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THE MICRO-INSTITUTIONAL DYNAMICS OF ENTREPRENEURSHIP IN THE UNIVERSITY

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This dissertation is submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy (PhD), National University of Ireland Galway.

December 2013
DECLARATION

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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ABSTRACT

This study explores how micro-institutional dynamics shape the entrepreneurial propensity of academics in the university context. The study was motivated by the need for greater understanding of the micro-foundations of the entrepreneurial university, and the potentially significant role of micro-level dynamics in the emergence and proliferation of entrepreneurial behaviour in academia. The study employs a qualitative and comparative case-study methodology in one Irish and one Belgian university, and extends understanding of the cognitive infrastructure which underpins the entrepreneurial university by identifying and analysing a number of mechanisms through which attitudes towards entrepreneurship are shaped at the micro-level. The study describes the manner in which locally embedded institutional logic shaped the perceived desirability and feasibility of entrepreneurial behaviour through role identities, means-ends assumptions, and guiding principles of organisation and behaviour. In so doing, the study advances a framework of findings that shows the emergence and proliferation of an entrepreneurial orientation in the university to be underpinned by micro-institutional dynamics which both enable and constrain entrepreneurial cognition and action. By demonstrating the influence of embedded role frames, local dynamics of legitimation, the socialisation and reinforcement of efficacy forming assumptions, and institutional trust dynamics, the study finds that local cultural-cognitive arrangements are of much importance to the emergence and proliferation of entrepreneurial behaviour in the academy. The study reveals that the identified mechanisms are of great significance to the emergence, or non-emergence of the entrepreneurial university, as the transformation of the “inner logic” (Etzkowitz 2003, p.109) of the institution is shown to be subject to the “gritty, messy, details of each university’s complex reality” (Clark 2001, p.12). In so doing, the study contributes to a number of important debates within the university based entrepreneurship literature, and extends understanding of how institutional structures and dynamics constrain or enable entrepreneurial cognition and action in the university context.
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I would like to thank the very many people who have helped and supported me throughout the journey which has led to the completion of this study. Firstly, I want to thank my supervisor Dr. James Cunningham whose advice, ideas, and support have been invaluable to me every step of the way. I am deeply grateful. I would like to acknowledge the funding support which has made this study possible. My PhD was funded by the Irish Social Science Platform within the Programme for Research in Third Level Institutions, administered by the HEA and co-funded under the European Regional Development Fund. I also offer my sincere gratitude to all the research participants who gave their time to the study and without whom this research would not have been possible.

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Finally to my family, your support means more than you will ever know. I hope I can always make you proud of me.
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CHAPTER ONE: INTRODUCTION

1.1. Introduction to the Study

This chapter will present the motivation and significance of this research study. The study explores the micro-foundations of the entrepreneurial university, and focuses on the manner in which micro-institutional dynamics shape the antecedents of entrepreneurial intent and condition entrepreneurial propensity in the university context. The study is anchored in the broader theoretical context of the national systems of innovation and triple-helix literatures, and is concerned with the perspectives of the modern university embedded within those frameworks. The significance of the topic within those wider fields is outlined in following section. An overview of the specific objectives of the research is then provided. The research is conducted in the empirical context of two university cases, one located in Ireland, and one located in Belgium, and this chapter will provide an outline of the methodological approach employed in exploring these cases. A summary of the study’s key findings and contributions will then be presented, before the chapter is concluded with an overview of the thesis structure.

1.2 Research Focus and Rationale

This study is concerned with the micro-foundations of the modern university’s changing role in wider society. Over the last thirty years, the role of this institution within the wider context of national economies has come under ever increasing levels of scrutiny, to the extent that the university itself has been drastically re-conceptualised as a major engine for economic growth and innovation within advanced, knowledge intensive economies (Etzkowitz and Leydesdorff 2000). Policy makers and researchers alike have consistently asserted the pivotal role of the National System of Innovation (NSI) in generating the conditions for sustained economic progress into the near future and
beyond (Cunningham and Harney 2006). It is difficult to overstate the centrality of universities and the research communities which inhabit them within this vision.

The dominant theoretical framework in articulating and conceptualising this pivotal role for the university is the triple-helix model. This model proposes a re-configuration of the inter-institutional dynamics of NSIs, wherein the boundaries between traditional institutional domains such as public and private, science and technology, or university and industry are in flux (Leydesdorff 2000). Within this perspective, it is academic research that carries the seeds of future economic and social development (Etzkowitz and Leydesdorff 1997), and it is through the innovative use of this research that the university embraces its ‘third mission’ of economic development. By so doing, it becomes an entrepreneurial university, cultivating the essential conditions for economic success (innovation, entrepreneurship, and management capabilities) in their wider regional and national contexts, in the process creating and maintaining the vital sources of competitive advantage (Clark 1998, Etzkowitz and Leydesdorff 2000, Etzkowitz et al. 2000).

Central to this perspective is the concept of university based entrepreneurship, which presents an interpretation of the academic role that is a significant departure from the traditional academic behavioural orientation (George and Bock 2009). In their engagement with the attendant activities of the entrepreneurial mission, academic researchers not only discover and develop promising research opportunities, but also commercialise their research for the creation of innovative goods and services (Benner and Sandstrom 2000). The micro-level proliferation of this activity is understood as a crucial dimension of the broader transformation of the university’s societal role. Yet it is also recognised that the micro-foundations of this phenomenon are largely unknown (Bercovitz and Feldman 2008, Jain et al. 2009, D’Este and Perkmann 2011, Guerrero and Urbano 2012). Given that the transformation of the university envisioned concerns the evolution of not only regulative and normative, but also cultural-cognitive institutional structures, this is not a trivial shortcoming. For as Etzkowitz (2003, p.109) acknowledges, it is change in the “inner logic” of academic work which underpins this revolution. In requiring the reconfiguration of this logic, the emergence of the
entrepreneurial university requires change in the powerful belief systems and associated practices which provide content and meaning to the university as an institution. As such, it requires and anticipates change in the roles, principles, and means-ends assumptions which serve as a link between institutions and human intentionality and action (Reay and Hinings 2009, Thornton and Ocasio 2008, Thornton et al. 2011). Based on a review of the university based entrepreneurship literature, this study asserts that understanding the manner in which this reconfiguration is both enabled and constrained by micro-institutional dynamics is a pressing concern within the field, as the cognitive underpinnings of the entrepreneurial university seem inextricably linked to the cognitive underpinnings of institutional change itself.

In addressing this concern, the study provides an in-depth, comparative case-study exploration of the manner in which these micro-institutional dynamics shape the entrepreneurial intentionality of academics in the university context. By exploring the manner in which role identities, principles of organisation, and means-ends assumptions embedded in the prevailing institutional logic shape the antecedents of entrepreneurial intent, the literature gains an understanding of entrepreneurship in the academy which lends itself not to deterministic or individualistic bias, but rather to an interpretation which gives appropriate emphasis to both individual agency and the idiosyncratic dynamics of local institutional arrangements. In so doing the study seeks to contribute an analytical framework which furthers understanding of the divergent rates of engagement with entrepreneurship observed across the university population, addresses the underlying sources of tension between the entrepreneurial and academic mandates, and explains the micro-processes through which entrepreneurial activities acquire congruence with academic norms (Bercovitz and Feldman 2008, Sanders and Miller 2010, Philpott et al. 2011, Perkmann et al. 2013).

1.3 Research Objectives

This study explored the manner in which micro-institutional dynamics shaped the antecedents of entrepreneurial intent and conditioned entrepreneurial propensity in the
university context. To this end, the study employed a neo-institutional lens of analysis, focusing on the relationship between institutional logic embedded in organising principles, role identities, and means-ends assumptions and the cognitive antecedents of entrepreneurial intent. A neo-institutional analysis, as distinct from analyses within the university based entrepreneurship field which find their conceptual origins in ‘old’ institutionalism or new institutional economics (Guerrero et al. 2006, Guerrero and Urbano 2011), was adopted due to both its inherent interest in how institutions condition organisational behaviour and its attendant motivations, and its specific concern with mechanisms which describe micro-level responses to pluralistic macro-institutional pressures. In identifying several significant themes from the university based entrepreneurship literature for which micro-institutional dynamics have considerable implications, research objectives were developed which attended to a number of theoretical and empirical gaps. These are briefly outlined in this section.

The overarching objective of the study was to add theoretical and conceptual depth to the phenomenon of entrepreneurship in the academy by adopting a neo-institutional perspective which better integrated the relationship between the university as a cultural-cognitive context for action with the formation of entrepreneurial intent. Synthesising these theoretical perspectives in this manner provides researchers of university based entrepreneurship with opportunities to more fully conceptualise the embedded agency which is so pivotal to its core questions (Battilana et al. 2009). The broader field of entrepreneurship has increasingly recognised the need to better integrate the role of context into theory development, with neo-institutional approaches such as that applied in this study being recognised as particularly suited to this aim (Zahra and Wright 2011, Thornton et al. 2012, Jennings et al. 2013). The study therefore sought to contribute to understanding of the micro-level mechanisms which underpin the cultural-cognitive transformation required for the emergence of the entrepreneurial university. Such research has the potential to better conceptualise the micro-foundations of knowledge transfer and the entrepreneurial university, and in so doing further understanding of how the proliferation of entrepreneurial behaviour is enabled and constrained by micro-institutional dynamics in this context (Etzkowitz, 1998, Benner and Sandstrom 2000, Krucken 2003, Owen-Smith 2003, Colyvas and Powell 2006, Colyvas 2007, Bercovitz and Feldman 2008, Wright et al. 2009, Jain et al. 2009, Bjerregaard 2010).
The **first research objective** which emerged from the review of the literature was to explore how locally embedded role frames, as a key mechanism through which the cultural-cognitive effect of institutions is manifested in everyday life, shape the personal attitudes of academics towards entrepreneurial behaviour. Roles shape behavioural boundaries for individuals and frame the meaning and legitimacy of that behaviour. As such, these role frames have consequences for the values, interactions, and practices of individual actors (Thornton and Ocasio 2008). This is key point of intersection between neo-institutionalism and the study of entrepreneurship in the academy, as the conceptualisation and re-conceptualisation of roles is recognised as a pivotal issue in both domains (Jain et al. 2009, Sanders and Miller 2010, Lam 2011). By pursuing this objective the study sought to address the recognised lack of understanding within the university based entrepreneurship literature of the cognitive underpinnings of the role modification which takes place when academics engage in entrepreneurial behaviour (Jain et al. 2009). The proliferation of studies within the field which draw attention to the importance of both role re-conceptualisation and the cognitive reframing of entrepreneurial behaviour and outcomes underlines the importance of this phenomenon to the understanding of knowledge transfer as a whole (Owen-Smith and Powell 2001, Mosey and Wright 2007, Jain et al. 2009, Lam 2010, Sanders and Miller 2010, Lam 2011).

The **second research objective** was to explore how micro-institutional legitimacy dynamics shape individual attitudes towards the desirability of entrepreneurial behaviour in an academic context. The absence of an empirically grounded model in this respect is a significant gap in the university based entrepreneurship literature (Bercovitz and Feldman 2008), and is not a trivial shortcoming, as it is through these micro-processes that the legitimacy of both behaviour and social function is first established, then internalised and reinforced by social actors (Greenwood et al. 2008). By exploring the relationship between the local legitimacy dynamics and the socialisation of attitudes towards entrepreneurial behaviour, the study sought to address this gap in the literature. In so doing, the study sought to identify the mechanisms through which the perceived desirability of entrepreneurship is framed, socialised and reinforced through the behavioural and attitudinal orientation of salient others in the local context.
The **third research objective** sought to advance understanding of how control and self-efficacy perceptions as they relate to entrepreneurial behaviour are shaped by institutional logic at the micro-level. The question this poses for entrepreneurship in the academy is a simple, but significant one. To echo Krueger et al. (2000), we know that a learned attitude such as self-efficacy is vital to academics’ engagement in entrepreneurship, so how do they learn it? As Goethner et al. (2012) argue, advancing understanding of how this factor is shaped is key to understanding how academics come to interpret the many challenges of commercial entrepreneurship. And as Glassman et al. (2003) suggest, merely describing the characteristics of entrepreneurial academics is not sufficient to this end. Rather it is necessary to explore and to theorise the cognitive underpinnings of self-efficacy formation. This study proposed that by exploring the manner in which the locally embedded institutional logic shaped the formation of self-efficacy assumptions we stood to learn much about how such attitudes are constructed and socially reinforced.

The final and **fourth research objective** was to explore how collective-efficacy perceptions as they relate to entrepreneurial behaviour were shaped by micro-institutional dynamics, and in particular, how institutional trust was significant to this process. Trust, as an essential element of human cooperation, itself proliferates in an institutional context in accordance with socially embedded organising principles that provide individuals with shared goals, values, and beliefs upon which that social cooperation may be predicated. These shared principles provide embedded actors with a basis for predicting the probable future actions of another actor, and it this which engenders certainty and trust. However, this is problematic in the context of the inter-institutional interaction which sits at the core of the entrepreneurial university and triple-helix literatures. The implied overlap between the helices (or domains) in this context requires the emergence of novel principles of organisation upon which trust may be predicated and from which the required cooperation may ensue. A review of the literature revealed that the manner in which the embedded characteristics of the university’s ‘social fabric’ enabled or constrained the emergence of this trust was poorly understood (Levin and Cross 2004). As such, this study sought to explore how the micro-level dynamics of trust may be significant to our understanding of entrepreneurial intentionality in the academic context, as collective-efficacy perceptions
might be sensitive to embedded assumptions and expectations about actors whose support was required for entrepreneurial engagement.

From an extensive review of the literature, and in accordance with the research objectives outlined above, an overarching research question, and four supporting questions were chosen to guide the study. These are presented in table 1.1.

<table>
<thead>
<tr>
<th>Primary Research Question</th>
<th>How do micro-institutional dynamics influence the entrepreneurial intent of academics in the university context?</th>
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<tbody>
<tr>
<td>Research Question 1</td>
<td>How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?</td>
</tr>
<tr>
<td>Research Question 2</td>
<td>How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?</td>
</tr>
<tr>
<td>Research Question 4</td>
<td>How are control and collective-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional trust dynamics at the micro-level in the university context?</td>
</tr>
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</table>

In the next section, an overview of the methodology employed in pursuing these questions will be provided.
1.4 Research Methodology

This study employed a critical realist research framework in pursuing its research objectives. Critical realism was deemed an appropriate framework for the study at hand for a number of reasons. The first of these is its emphasis on the interrelation between the three core elements of institutional theory, namely the actions of individuals, institutions themselves, and institutional logics (Leca and Naccache 2006). The second of these is the scope it provides for greater integration of the cognitive micro-processes of institutional persistence and change with higher order macro-institutional trends (Greenwood et al. 2011, Delbridge and Edwards 2013). The third is its rejection of the casual determinacy of macro-institutional pressures, and its emphasis on the importance of local context in the manifestation of institutional effects (Sayer 2000, Leca and Naccache 2006). Finally critical realism was deemed particularly suitable for the study at hand due to its accommodation of the subjectivist methodological approaches best suited to the conduct of theory building research in immature fields such as university based entrepreneurship (Markman et al. 2008).

A qualitative case study research strategy was chosen as the most appropriate methodological approach to the research objectives, in particular because of the suitability of this approach to investigation and analysis of the dynamics present in specific settings. Additionally, case-studies are suited to the fine-grained contextual analysis required by the research questions of this study. The study employed a comparative case-study approach, as the review of the literature indicated that the field suffers from a paucity of comparative research which could deepen understanding of important mechanisms (Kenney and Goe 2004). This scarcity of qualitative research was similarly recognised in the entrepreneurial cognition literature wherein calls have been made for urgent redress of this problem (Hindle 2004).

In addition to providing a case-study comparison of two European universities, the study also provides a novel comparison of two universities from different national contexts (Belgium and Ireland). The significance of national context is found in the
influence of deeply embedded value systems on political and social institutions, and as such the degree to which these value systems may shape the cultural legitimacy of entrepreneurial behaviour in a given social context (Hofstede 1980, Hofstede 2001, Hayton et al. 2002). While the focus of this study is on how the cultural-cognitive micro-context constrains and enables entrepreneurial intentionality in the university as opposed to the specific influence of cultural dimensions within the Irish and Belgian contexts in this respect, the significance of these dimensions should be considered in any reading of the study’s findings.

Finally, the study employed purposive sampling and semi-structured interviews in its collection of data, and this data was analysed using thematic coding. A detailed description of both the empirical cases and the methodological framework of the study is provided in chapter four, as well as a discussion of the limitations of research study.

1.5 Findings and Contribution of the Study

This section will briefly summarise the key findings and contributions of the study. The primary contribution of this research is a theoretical framework which furthers understanding of the underlying cognitive infrastructure of entrepreneurial intent in the university context. The study therefore contributes a conceptual and empirically grounded model of the relationship between the university as a cultural-cognitive context for action and the cognitive antecedents which underpin the entrepreneurial intent of academics. In this sense the study has explored and identified a range micro-institutional dynamics which shape the situated desirability and feasibility of entrepreneurship as a behavioural mode, and as such serve as the cultural-cognitive foundation of the entrepreneurial university itself.

With respect to **personal attitude and embedded role frames**, the study found that the embeddedness of an entrepreneurial orientation at the micro-level of action was manifested in **perceptions of functional and representational role tensions and contradictory logic** on the part of academics in either case, and as such revealed the
manner in which embedded interpretations of legitimate behaviour in the context of the academic role framed the meaning of entrepreneurial behaviour in different ways for interviewees. Secondly, the findings demonstrated the manner in which congruence between the prevailing and entrepreneurial role frames emerged as entrepreneurship was framed as a means of resolving functional and representational role anxieties, and thereby served as a means of reconciling contradictions in the prevailing institutional logic.

In exploring the influence of the local dynamics of legitimation on social norms, the study showed that the behavioural and attitudinal orientation of salient others played a significant part in the framing of the functional and representational legitimacy of entrepreneurial action. Role models emerged from analysis of the data as significant in the framing of means-ends assumptions as they pertained to entrepreneurship, and evidence of the functional legitimacy of entrepreneurship was revealed as particularly significant in the reconciliation of representational concerns. Peer attitudes were shown to be significant in the framing of entrepreneurial prestige and the identification of entrepreneurship as a means of acquiring academic capital. Finally, local leaders in positions of formal authority were influential in the formation of perceived role expectations, as well as both formal and informal evaluative role pressures as the interviewees interpreted them.

In exploring the effect of micro-level dynamics on self-efficacy perceptions, the study revealed a number of mechanisms which operated in conjunction with the dominant institutional logic in reinforcing individual level attitudes towards the feasibility of engaging in entrepreneurial behaviours. The findings of this study point to three primary mechanisms through which this effect was manifested. Firstly, accumulation of positive vicarious experience was a product of the social proximity of an individual to successful performances of an act by socially comparable individuals. Secondly, verbal persuasion was a product of social proximity to actors who had themselves a perception of entrepreneurial behaviour as both legitimate and feasible. And thirdly, interpersonal control was a product of the embeddedness within the local
context of means through which relationships necessary for successful outcomes could be formed.

Finally, and with respect to the manner in which micro-institutional dynamics influenced collective-efficacy perceptions, this study demonstrates the impact of two different types of trust on the collective-efficacy perceptions of the interviewed academics. The first of these was competence, or ability, based trust which relates to the characteristics that shape the perceived trustworthiness of an actor to perform well in a given domain (Mayer et al. 1995). The second type of trust which had significance was relational, or integrity, based trust which has its source in the ‘social bond’ which ties social actors to each other (Braithwaite 1998, McEvily et al. 2003).

Through these empirical findings the study makes a number of contributions to key themes and debates within the extant university based entrepreneurship theory. Firstly, the study contributes the ongoing debate on the nature of the re-conceptualisation of the academic role on the part of the individual actors in the university by showing this re-conceptualisation to be facilitated and legitimated by the framing of entrepreneurial behaviour as a means of addressing prevailing functional and representational role concerns as they are recognised by academic role incumbents. In this respect the study extends understanding of the perceptual underpinnings of assessments of the costs and benefits of entrepreneurship on the part of academics, and as such contributes to “a broader and psychologically richer” theorisation of this issue (Lam 2011, p.1355).

Secondly, the study contributes to theoretical perspectives on the challenges of top-down or planned approaches to cultivating entrepreneurship in the university, and as such builds on findings from a number of previous investigations of this issue (Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011), by highlighting the significance of the perceived impetus and underlying rationale for such policy and the attitudinal contrast when this rationale is interpreted as either reconstructive or elaborative with respect to the academic role.
Thirdly, the study builds upon previous studies in the literature which suggest that university's normative and structural adaptation to the entrepreneurial mission may reflect a largely superficial adaptation to the third mission, and similarly that the university as an institution may “change at the formal policy level without concomitant changes in cultural norms at the organisational or individual levels” (Krucken 2003, Lam 2010, p.310). The findings of the study resonate strongly with these propositions, and go further in identifying causal mechanisms that directly exhibit the manifestation of this effect in the formation of entrepreneurial intentionality. Additionally, the study contributes to understanding of the effects of this superficiality by highlighting a number of mechanisms through which embedded trust dynamics complicate the emergence of entrepreneurial intent despite normative or structural adaptations. In this respect the study contributes to understanding of why effort may or may not be mobilised in pursuit of the aims of the entrepreneurial mission by demonstrating how the peripheral or low value status of entrepreneurship within the value structures referred to by Brint (2005) and Mosey et al. (2012) diminishes intent to engage in entrepreneurship.

Fourthly, the study indicates that the effectiveness of the TTO in particular as a structural adaptation to the third mission may be limited by the manner in which their weak embeddedness in the local environment diminishes relational trust. The findings revealed that the proliferation of entrepreneurial orientation in a university context is somewhat dependent upon the development of the social bond between the academic community and entrepreneurial support structures like the TTO, as a sense of both shared purpose and mutual interdependence is required. The study contributes to the literature by furthering understanding of the qualitative nature the relationship between academics and TTO professionals (Owen-Smith and Powell 2001, Jensen et al. 2003, Levin and Cross 2004), and in this manner sheds light on the underlying factors which shape the willingness of academics to engage with TTO professionals.

Fifthly, by attending to efficacy perceptions (both personal and collective) the study contributes to understanding of how “entrepreneurial attitudes and control beliefs...may actually affect intentions to engage in academic entrepreneurship” (Goethner et al.
2012, p.638). In this respect the study contributes to the literature by demonstrating a number of mechanisms through which the “social contagion” effect identified by Azoulay et al. (2007) is manifested by revealing the manner in which vicarious experiences, verbal cues, and perceptions of interpersonal control socialise and reinforce embedded means-ends assumptions with respect to the feasibility of entrepreneurial initiatives in the university context.

**Sixthly,** the study contributes to debate on the motivations of academics when engaging in entrepreneurial behaviour by illustrating the role of micro-institutional dynamics in the framing of the feasibility of such behaviour (D’Este and Perkmann 2011, Lam 2011, Hayter 2011). The study reveals motivation to be subject to the functional and representational alignment of the entrepreneurial role frame with prevailing interpretations of legitimate academic behaviour and values, as the extent of this alignment has consequences for the mobilising resonance and thus the motivational force of the entrepreneurial mission. The study also suggests that egoistic motivation for engagement in entrepreneurial behaviour, a dimension of motivation identified as significant in previous studies (Lam 2011, Hayter 2011) is somewhat dependent upon the degree to which it was framed as a legitimate means of achieving pro-social and prestige bearing ends within the embedded institutional logic. In this respect the study makes an important contribution to the broader entrepreneurship literature in demonstrating how the outcome expectations and perceived self-interest which underpins entrepreneurial motivation in shaped by the context of action (Carsrud and Brannback 2011).

Further to this point, and finally, the study provides a **seventh** contribution to the theory by providing a synthesis of neo-institutional and entrepreneurship perspectives in the context of the university based entrepreneurship literature (Guerrero and Urbano 2012). It provides a response to the neglected intersection of these two frameworks (Battilana et al. 2009, Thornton et al. 2011, Jennings et al. 2013) and in so doing it addresses gaps in understanding of how it is “that institutions shape both the identification of opportunities” and how individuals may try to exploit them (Tolbert et al. 2011, p.1340). In answering such calls, this research has advanced its overarching objective
of exploring the micro-dynamics of the institutional transformation entailed within triple-helix perspectives of the university in general, and the cultural-cognitive underpinnings of entrepreneurial activity in the university in particular.

1.6 Overview of Thesis Structure

This thesis has nine chapters in total, and its structure is presented in table 1.2.

<table>
<thead>
<tr>
<th>Chapter One</th>
<th>Introduction</th>
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<tr>
<td>Chapter Two</td>
<td>Literature Review I</td>
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<tr>
<td>Chapter Three</td>
<td>Literature Review II</td>
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<tr>
<td>Chapter Four</td>
<td>Methodology</td>
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<tr>
<td>Chapter Five</td>
<td>Findings I</td>
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<tr>
<td>Chapter Six</td>
<td>Findings II</td>
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<tr>
<td>Chapter Seven</td>
<td>Discussions I</td>
</tr>
<tr>
<td>Chapter Eight</td>
<td>Discussions II</td>
</tr>
<tr>
<td>Chapter Nine</td>
<td>Conclusions</td>
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Chapters two and three provide the theoretical background to the research. In **chapter two**, a review of the knowledge economy, national system of innovation, and university based entrepreneurship literatures as they inform the research objectives of this study will be provided. This chapter will also address the extent to which from an entrepreneurial intentions perspective, the institutional dynamics of persistence and change which shape intentionality at the micro level are under-explored within the extant literature. As such, this chapter will present a discussion of the implications of this assertion for the university based entrepreneurship literature.

**Chapter three** will then provide a review of the literature which underpins the institutional perspective employed within the study. The emergence of neo-institutionalism as a lens of analysis in organisational studies will first be described,
after which the institutional logics perspective and its suitability for understanding the institutional persistence, diffusion, and change implicit within the entrepreneurial university construct will be discussed. An integrated framework for exploring the influence of the micro-institutional context on cognition in the context of entrepreneurial behaviour in the university will then be presented.

**Chapter four** will describe the research methodology chosen to address the study’s research questions. The chapter will discuss the major philosophical perspectives which underpin the scientific process, before presenting the arguments for the suitability of a critical realist perspective for the study at hand. The chapter will also provide the underlying rationale for the employment of comparative and qualitative case study methodological approach, before describing the empirical background of the case studies and the rationale for their selection. The sampling strategy, the procedures used for data collection and analysis, and the limitations of the study will also be discussed in detail.

**Chapter five** will present the research findings which concern the interviewed academics’ desirability perceptions as they are conceptualised within Krueger’s (2000) entrepreneurial intentions framework. Addressing the first two research questions, the findings which address the impact of institutionally embedded role frames on personal attitudes towards entrepreneurial behaviour will first be presented, before the second half of the chapter addresses the manner in which local legitimacy dynamics shaped social norms in the empirical cases.

Having analysed the findings of the study as they relate to desirability based antecedents of entrepreneurial intent in the chapter five, **chapter six** will describe the research findings as they relate to the underpinning elements of academics’ feasibility perceptions in the empirical cases. Addressing research questions three and four, the chapter will first describe the findings as they relate to the manner in which control and self-efficacy perceptions were shaped by embedded assumptions at the micro-institutional level. The second half of the chapter will address the findings which
emerged from research question four, focusing on the influence of micro-institutional trust dynamics on the perceived feasibility of entrepreneurial behaviour as it was shaped by collective-efficacy perceptions.

Chapter seven will then discuss the findings described in chapter five in the context of the extant literature. As such, it will discuss how the findings first address how locally embedded role frames shape the personal attitude of academics towards the desirability of entrepreneurial behaviour, and how this contributes to a number of debates in the university based entrepreneurship literature. In discussing the findings from research question two, the chapter will address the manner in which desirability perceptions as they relate to entrepreneurial behaviour were shaped by social norms at the micro-institutional level, and in particular how assumptions as to the legitimacy of entrepreneurship were socialised and constructed.

Chapter eight is the second discussions chapter, and as such will discuss the findings which are described in chapter six. The chapter will firstly discuss the manner in which micro-level mechanisms socialised and reinforced assumptions which in turn shaped self-efficacy perceptions of academics with respect to entrepreneurial behaviour, before discussing the influence of embedded trust dynamics on collective-efficacy.

Finally, chapter nine will conclude the study. It will review the objectives of the thesis, the gaps it sought to address, the conclusions it reached, and the contribution it makes to theory, policy, and practice. Lastly, the chapter will make some recommendations for future research in the light of the issues uncovered in this study.
CHAPTER TWO: LITERATURE REVIEW I - THE TRIPLE-HELIX AND ENTREPRENEURIAL BEHAVIOUR IN THE UNIVERSITY

2.1 Introduction

This chapter will provide a review of the knowledge economy, national system of innovation (NSI), and university based entrepreneurship literatures as they inform the research objectives of this study. The knowledge economy will be discussed in section 2.2, before a description of the innovation systems and triple-helix literature is provided in section 2.3. Section 2.4 will consider the re-conceptualisation of the university within these frameworks, as well as analysing the implications of the institutional transformation envisioned within them. Having discussed the reconfiguration of the institutional dynamics of the modern university anticipated within these perspectives, the chapter will then address the manner in which the university has been framed as a context for entrepreneurial action at the micro-level in section 2.5. The chapter will then in section 2.6 address the extent to which from an entrepreneurial intentions perspective, institutional dynamics which shape intentionality at the micro-level are under-explored within the extant literature. In section 2.7, the implications of this assertion for the university based entrepreneurship literature will be discussed. The contribution to the literature offered by an exploration of the influence of micro-institutional dynamics on the antecedents of entrepreneurial intent will be presented.

2.2 Knowledge and the Knowledge Based Economy

This section will provide an overview of the knowledge based economy concept, and will discuss the re-conceptualisation of knowledge as a driver of economic progress within this framework.
2.2.1 The Knowledge Economy

Throughout recent decades, the knowledge based economy (KBE) has emerged as the dominant economic development paradigm of the age, with an emphasis on the role of knowledge creation and distribution as the key driver of economic growth (Harris 2001). Drucker (1969) is credited with the popularisation of the phrase ‘knowledge economy’ which he in turn attributes to the American industrial scientist, Frederick Taylor, and which he argued was the successor to the industrial society, characterised by both ‘boundarylessness’ and knowledge driven upward mobility. “Knowledge” Drucker argued, “has become productive. The systematic and purposeful acquisition of information and its systematic application, rather than ‘science’ or ‘technology’, are emerging as the new foundations for work, productivity, and effort throughout the world” (Drucker 1969, p.266).

In the decades which followed Drucker’s initial presentation of this principle, a wide array of interpretations and lines of research followed in response to the concept of the KBE. These trends also reflected a technologically driven shift from tangible to intangible or information based goods (Powell and Snellman 2004). Reviewing the major streams within this new economics of knowledge, Harris (2001) points to (1) the classification of knowledge as a factor input, (2) the treatment of knowledge as information objects and knowledge products, (3) the examination of knowledge spillovers and localisation effects, (4) the conceptualisation of the relationship between knowledge and income distribution, and (5) the placing of emphasis on knowledge networks as the dominant approaches to emerge in the attempt to push knowledge into a conventional economic framework.

2.2.2 Knowledge and Economic Progress

Unifying the various schools of thought that emerged was the centrality of the idea that advances in scientific theory were a critical source of innovation (Powell and Snellman 2004), and therefore, of economic and social progress. For policy makers and scholars
alike, the revival of growth theory, and the new growth theory’s emphasis on the endogenisation of technological progress served to enhance the significance of the underlying processes which drive this innovation (Freeman 1995, Olssen and Peters 2005, Sharif 2006). As knowledge itself was increasingly recognised as a primary source of economic advantage, the role of societal institutions both as producers of knowledge and as agents of its diffusion became increasingly critical within models of economic development (Etzkowitz et al. 2000).

In their efforts to grapple with this emerging paradigm, policy makers increasingly focused on two issues. The first was the national and regional research and development (R&D) infrastructure, and the second was systematic interpretations of innovation processes which focused on scientific education and training. The challenge confronting them was by its very nature a difficult one, however, given the complexity of the processes and institutions which are involved in the production and diffusion of knowledge. This difficulty was exacerbated by a disproportionate focus on the nature of knowledge production in the literature which was not complemented by similar attention to knowledge dissemination and impact, and a failure to adequately define the meaning of knowledge in the unique context their policies attempted to influence (Powell and Snellman 2004, Rooney et al. 2005). Consequently, as argued by Rooney et al. (2005), this impoverished conceptual basis for policy engendered a technocratically oriented policy discourse. This discourse, understanding knowledge in terms of its instrumental or industrial value, deals largely with surface features of knowledge systems at the expense of “deeper and more fundamental social, cultural, and communication processes that condition knowledge creation and use” (Rooney et al. 2005, p.2).

Despite a renewed focus on the role of social institutions in economic development then, the underlying social infrastructure of the knowledge society has been somewhat neglected to this day. An underestimation of the relational character of knowledge, and the social and psychological idiosyncrasies of local environments which enable, block, or filter its creation and dissemination has ultimately served to undermine policy frameworks with basic conceptual shortcomings (Powell and Snellman 2004, Rooney
et al. 2005). The significance of these issues will become more apparent as we progress towards the micro-level of analysis, and the inter-institutional interactions envisioned within triple-helix perspectives are analysed in terms of their implications for micro-level behaviour.

2.3 National Systems of Innovation and the Triple-Helix Model

This section will discuss the national systems of innovation framework and the emergence of the triple-helix model as a central analytical perspective within this literature. It will first address the emergence of innovation systems as a lens of economic analysis, before describing the inter-institutional emphasis of the triple-helix model.

2.3.1 The National System of Innovation

A crucial concept in the effort to better understand the significance of relational factors as they operate at the macro level is the national system of innovation (NSI). This approach endeavours to construct a holistic framework within which the complex networks of actor relationships involved in the creation and diffusion of innovative knowledge can be better understood (Freeman 1985, Lundvall 1992, Nelson 1993). The systems approach has emerged in the place of linear interpretations of innovation, framing innovation as a more complex and dynamic process which depends upon an intricate web of interactions involving a wide variety of social and economic actors (Rothwell 1992). An important claim within this perspective, therefore, is that innovation occurs not in isolation but in the context of a system of institutional characteristics and relationships that both differ across systems and heavily influence patterns of innovation and learning at the organisational level (Freeman 1995, Nelson 2001, Edquist 2004, Filippetti and Archibugi 2010).
The innovation systems approach accordingly affords great significance to the institutionalised environments within which innovation is to take place (Edquist 1997). As Fillipetti and Archibugi (2010) emphasise, the NSI perspective adapts this stance in order to focus on the national context, as it is this context which provides the historical backdrop for the inter-institutional interactions through which innovation is carried out. The significance of the national frame of analysis spans from its recognition of nationally distinct and path-dependent institutional evolution and change (Lundvall 1998, Leydesdorff 2005), but as Edquist (1997) argues, the frame of analysis employed is typically dependent on what is intended to be examined. Edquist’s comment reflects criticism of the nation as the dominant unit of analysis from scholars who stress the significance of regional or sectoral characteristics. Despite these concerns, however, the NSI perspective has remained preeminent.

It is within this perspective that institutions serve as the major building blocks of the system (Edquist 1997). As Edquist and Lundvall (1993) suggest, it is the institutionally determined social capabilities of a nation which in turn shape that nation’s innovative capacity. Institutions, as systems of incentives and constraints (North 2003), play a significant role in determining structure and behaviour at the organisational level, producing patterns of action that ultimately lead to distinct macro level economic dynamics (Fillipetti and Archibugi 2010). The concept of the institution will be discussed in greater detail in chapter three, but for now it is sufficient to state that in establishing the rules of the game for actors, institutions also serve to dictate behavioural boundaries and the logics of action which prevail within given domains (North 1990, DiMaggio 1997, Kraatz and Block 2008).

Of major interest to both scholars and policy makers with respect to the NSI, therefore, is the nature and intensity of interactions and behavioural overlaps between actors from the key and distinctive institutional domains of government, industry, and the university. As Adler (2001) argues, the effective exchange of knowledge is dependent upon a shared sense of destiny, or on shared value systems which influence what is regarded as knowledge in the first place (Pillay 2005). As such, institutional
boundaries, as well as the role and value systems which prevail in the institutional domains they divide are of major significance.

2.3.2 The Triple-Helix Model

The leading theoretical framework in conceptualising the “configuration of institutional forces emerging within innovation systems” (Etzkowitz et al. 2000, p. 314) is Etzkowitz and Leydesdorff’s (2000) triple-helix model, which proposes a dynamic and mutually interdependent process of interaction between government, industry, and the university that generates the knowledge infrastructure through which innovation proliferates. The configuration envisioned by the model’s proponents entails the overlap of these three institutional spheres, with each institution at times engaging in activities traditionally understood as being situated outside of their institutional domain (Etzkowitz and Leydesdorff 2000). As Leydesdorff and Etzkowitz (2001) argue:

“The university takes the role of industry, transferring technology to infuse existing firms with new life and helping form new firms in incubator facilities. Government takes the role of industry, helping to support these developments through funding programs and changes in the regulatory environment. Industry takes the role of the university in developing training and research, often at the same high level as universities.”

This institutional overlap is understood as necessitating and facilitating the emergence of hybrid organisational forms that create new systems of meaning, in the process serving to span institutional boundaries and create entirely new institutional paradigms (DiMaggio 1988, Etzkowitz and Leydesdorff 2000, Garud et al. 2002). The technology transfer office (TTO) is one such example of this phenomenon.
As Cunningham and Harney (2006) note, the emergence of the triple-helix model was an indication of the aforementioned shift in the understanding of inter-institutional innovative processes, a shift which Etzkowitz (2002) suggests arose as a consequence of four primary factors:

- **internal transformation of each of the helices**, and in particular the redefinition and expansion of traditional academic tasks,
- **growing impact of one helix upon the other** – the Bayh/Dole Act for example was a government policy radically changing the framework for university activity by granting proprietary rights of federally funded research to universities,
• **new tri-lateral networks** and organisations arising out of interactions between the three helices, and

• **recursive effects**, as the helices further develop their capacities within existing networks they develop the capacity to create new network and organisational forms.

As an analytical tool, therefore, what the triple-helix sought to assert was that the boundaries between traditional institutional domains such as public and private, science and technology, or university and industry are in flux (Leydesdorff 2000). This contention suggested that there was a fundamental shift in the character of these institutions and their institutional arrangements. As the four primary factors referred to above suggest, of critical importance within this paradigmatic shift is the role and function of both the university and academia. As Etzkowitz and Leydesdorff (1997) assert, “The development of academic research capacities carries within itself the seeds of future economic and social development in the form of human capital, tacit knowledge and intellectual property”, and as such, the systemic role of the university within the innovation process is understood within this perspective as being significantly enhanced. Etzkowitz (2003) states that we have seen an evolution of the university from its traditional research based institutional form, to a form which he characterises as the ‘entrepreneurial university’, with the university’s role in economic development being enshrined as the ‘third mission’ (Etzkowitz et al. 2000). While the university has always faced a plurality of societal expectations, it is necessary here to trace a brief history of the emergence of this particular ‘mission’, and the revolution which has prompted the emergence of the entrepreneurial university. This will be provided in section 2.4.

### 2.4 Re-Conceptualisation of the Role of the University

Having looked at the triple-helix model in the previous section, this chapter will now discuss the emergence of the entrepreneurial university and consider more closely the
implications of the transformative institutional change envisioned within that perspective.

2.4.1 The Entrepreneurial University

The re-conceptualisation of the role of academic institutions has seen them characterised as not only highly important for national economies but as integrated, primary economic actors within these economies (Brennan et al. 2007). Within this function as creators of the knowledge that drives economic success and product innovation, the university adapts multiple roles, in terms of both the cultivation of the essential conditions for success (innovation, entrepreneurship, and management capabilities) and the creation and maintenance of the vital sources of competitive advantage (Clark 1998, Etzkowitz 1998, Etzkowitz et al. 2000, Cunningham and Harney 2006, Guerrero et al. 2012). In characterising this transformation as the emergence of the entrepreneurial university, Etzkowitz (2003) has proposed that a second academic revolution has taken place. Before we look at the nature of this revolution, however, it is important to first outline what it is that the university has transformed from.

The classical university is generally understood as being an institution of teaching and research, with its primary function as a societal institution being understood in those terms. Accordingly, the primary activities engaged in by the university as it is classically understood include the development of individual learning and human capital, the socialisation and cultivation of citizens, serving as a forum for independent criticism of society, and the preservation of knowledge for future generations (Gumport 2000). In presenting the characteristics of the ideal type of the traditional university as a public institution, Olssen (2002) defines its modes of internal governance in the terms outlined in table 2.1.
<table>
<thead>
<tr>
<th><strong>Mode of Operation</strong></th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode of Control</strong></td>
<td>‘Soft’ Managerialism, Collegial-Democratic Voting, Professional Consensus, Diffuse Control</td>
</tr>
<tr>
<td><strong>Management Function</strong></td>
<td>Leaders, Community of Scholars, Professions, Faculty</td>
</tr>
<tr>
<td><strong>Goals</strong></td>
<td>Knowledge, Research, Inquiry, Truth, Reason, Elitist, Not for Profit</td>
</tr>
<tr>
<td><strong>Work Relations</strong></td>
<td>Trust, Virtue Ethics, Professional Norms, Freedom of Expression and Criticism, Role of the Public Intellectual</td>
</tr>
<tr>
<td><strong>Accountability</strong></td>
<td>‘Soft’ Managerialism, Professional-Bureaucratic, Peer Review and Facilitation, Rule-based (ex-ante)</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>The Kantian Ideal of Reason, Specialisation, Communication, Truth, Democracy</td>
</tr>
<tr>
<td><strong>Pedagogy/Teaching</strong></td>
<td>Full Year Courses, Traditional Academic Methods and Course Assessment Methods, Knowledge for its own Sake, Mode 1 Knowledge</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>Integrally Linked to Teaching, Controlled from within the University, Initiated and Undertaken by Individual Academics</td>
</tr>
</tbody>
</table>

(Adapted from Olssen 2002)

Against the backdrop of the generically understood ‘traditional’ model of the university, Etzkowitz (1998) proposes that a second ‘academic revolution’ has taken place, which has fundamentally transformed the nature of the university and its
attendant function as a social institution. The first academic revolution is presented within this perspective as having taken place in the late 19th century with research emerging as a primary institutional function for the university, alongside its previous teaching mission. In articulating the contemporary role of both the university and academia within the triple-helix, Etzkowitz et al. (2000, p.314) argues that the university has transcended in form and function from its orientation as a research institution to “an academic structure and function that is revised through the alignment of economic development with research and teaching as academic missions” (table 2.2).

<table>
<thead>
<tr>
<th>Teaching</th>
<th>Research</th>
<th>Entrepreneurial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preservation and dissemination of knowledge</td>
<td>First academic revolution</td>
<td>Second academic revolution</td>
</tr>
<tr>
<td>New missions generate conflict of interest controversies</td>
<td>Two missions: teaching and Research</td>
<td>Third mission: economic and social development; old missions continued</td>
</tr>
</tbody>
</table>

(Ètzkowitz 2003)

It is important to note that significant heterogeneity exists and always has existed in the university population in the first instance (Martinelli et al. 2008), and as such, any evolution or revolution of institutional form must be understood in light of the fact that this change has taken place in the context of an organisational population which will have displayed differing degrees of conformity to any ideal type. The significance of this, as argued by Martinelli et al. (2008) and Philpott et al. (2011), is that assumptions of an isomorphic development path as expressed by Etzkowitz et al. (2000) to the institutionalisation of economic development as the university’s third mission must be viewed with a degree of caution. Underlying institutional tensions and contestations which give rise to institutional persistence can easily be misread, understated, or outright ignored within this perspective (Philpott et al. 2011), with the external pressures responsible for driving institutional change deemed immutable, and mechanisms of institutional persistence ignored.
2.4.2 Institutional Transformation

In arguing the case for the global nature of this transformation, however, Etzkowitz et al. (2000, p.329) point to a number of important developments which have taken place over the last number of decades:

The transformation of academia from a ‘secondary’ to a ‘primary’ institution is a heretofore unexpected outcome of the institutional development of modern society (Mills, 1958). In consequence, “the knowledge industry in modern societies is no longer a minor affair run by an intellectual elite, an activity that might be considered by pragmatic leaders as expendable; it is a mammoth enterprise on a par with heavy industry, and just as necessary to the country in which it is situated” (Graham, 1998, p.129)

This re-conceptualisation of the economic significance of knowledge has seen the re-organisation of higher education in line with utilitarian principles, with an attendant shift in the dominating institutional logic of higher education institutions (HEIs). (Gumport 2000) “The dominant legitimating idea of public higher education” Gumport (2000, p.4) suggests, “has been moving away from the idea of higher education as a social institution, and moving toward the idea of higher education as an industry.” While Gumport’s general view of this transformation is somewhat critical of this shift in the underlying logic of the university as an institution, and in many ways a counter-argument to more optimistic assessments of the same historical trend, in one important respect if not all others both she and Etzkowitz are in agreement. The shift in the nature of the university as a social and economic actor is institutional, and not merely operational or strategic in nature. As such, the institutional dynamics at play are of great significance.

The role of the university within the triple-helix is understood as being attentive to the internal alignment of its teaching and research functions with the economic development mission and its orientation towards external opportunities, pursued in a
synergistic fashion with government and industry actors (Etzkowitz et al. 2000). As a consequence, the university is conceptualised as performing a variety of important economic functions in a manner which has become increasingly prevalent over the past three decades, and can be broadly regarded as ‘entrepreneurial’ (Mansfield 1998, Etzkowitz 2000, Grimaldi et al. 2011). Primarily, the university is expected to innovate, recognise, and create economic opportunities, adopting both at the aggregate and individual level an entrepreneurial attitude towards the conduct of research and the utilisation of expertise embodied in its human capital (Clark 1998, Kirby 2005, Guerrero et al. 2012).

Critically, such activities require a process and realisation of internal transformation whereby the university is required to adopt an entrepreneurial orientation. This is a point of great importance, for it is the ascendance of this entrepreneurial orientation that is most central to the reconfiguration of institutional arrangements predicted within the triple-helix model. As Etzkowitz (2003, p.109) states, it is the “inner logic” academic work which undergoes a metamorphosis, as the university takes on both structural and cultural characteristics which foster an entrepreneurial culture. The emergence of a favourable disposition towards entrepreneurial endeavour at the individual level is ultimately what underpins the proliferation of entrepreneurial activity (Vanaelst et al. 2006). The institutional transformation entailed with respect to the university, therefore, is fundamentally concerned with the emergence of particular modes of behaviour at the micro-level. To this end structural and cultural-cognitive reconfigurations are required. The next section will discuss the implications of this broader institutional reconfiguration at the micro-level in the university.

2.5 Entrepreneurial Behaviour at the Micro-Level - The University Context

This section will discuss the characteristics of the entrepreneurial university and identify challenges posed by micro-institutional processes for the emergence of an entrepreneurial orientation at the micro-level.
2.5.1 Characteristics of the Entrepreneurial University

The emergence of an entrepreneurial orientation on the part of the university is understood as an essential process of institutional evolution within the triple-helix model of systematic innovation. Accordingly, this study focuses on the university as the context for action at the micro-level from which entrepreneurial modes of behaviour are to emerge, advancing the general proposition that it is the dynamics of institutional persistence and change which operate at this level that serve as the micro-foundations for the triple-helix as a whole. A chief conundrum within the broader literature on university-industry interaction is the manner in which the extent and intensity of such interactions are shaped by micro-level contextual factors (Rothaermel et al. 2007, Philpott et al 2011, Guerrero and Urbano 2012).

We have seen that the entrepreneurial university has been presented by Etzkowitz et al. (2000) as the evolved form of an institution which has undergone two major processes of historical change, which he describes as revolutionary and therefore transformative in their scope and consequences. Each revolution has seen universities take on a variety of structural and cultural characteristics which mark them to a greater or lesser degree as part of the evolved population. Understandably, the tumultuous nature of such change creates dispute as to the specific set of traits which constitute the ideal type of the new institutional order. Clark (1998) set out in broad terms the following influential framework of the unifying characteristics of an institutionalised entrepreneurial orientation, which in many respects laid the foundation for the development of the entrepreneurial university construct within the literature:

- a strengthened steering-core,
- an expanded developmental periphery,
- a diversified funding base,
- a stimulated academic heartland,
- an entrepreneurial academic culture.
As Clark (2001, p.12) acknowledged, such descriptive categories represent generalisations which operate a step above the “gritty, messy details of each university’s complex reality.” Nevertheless, and as Clark was eager to emphasise, they serve as a useful guiding framework for further analysis on the nature of the entrepreneurial university and offer a concise basis for theoretical development. Building upon this and other delineations of the entrepreneurial university over the course of the past decade, Guerrero et al. (2012) present the model detailed in figure 2.2 as a comprehensive framework of the institutional and organisational factors which underpin analysis in the field. This framework presents the entrepreneurial university in terms of its formal and informal institutional factors, its resources, and its capabilities.

<table>
<thead>
<tr>
<th><strong>Institutional and Organisational Factors</strong></th>
<th><strong>Outcomes</strong></th>
<th><strong>Outputs</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formal Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Activities</td>
<td>Economic</td>
</tr>
<tr>
<td></td>
<td>Entrepreneurial Activities</td>
<td></td>
</tr>
<tr>
<td><strong>Entrepreneurship Education Programmes</strong> (Lambert 2003, Witte 2004, Hynes and Richardson 2007)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Informal Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Models</td>
<td>(Owen-Smith and Powell 2001, Stuart and Ding 2006, O’Shea et al. O’Shea et al. 2007)</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Capital</td>
<td>(Clarysse et al. 2005, Vanaelst et al. 2006, Wright et al. 2007)</td>
<td></td>
</tr>
<tr>
<td>Capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status and Prestige</td>
<td>(George et al. 2002, Sine et al. 2003, O’Shea et al. 2005)</td>
<td></td>
</tr>
</tbody>
</table>

(Guerrero et al. 2012)

From the institutional perspective adopted within this model, the economic and social outputs of the entrepreneurial university envisioned within triple-helix perspectives are arrived at through the presence of a number of institutional factors which are categorised as ‘formal’ (primarily regulative) or ‘informal’ (primarily cultural-cognitive) (North 1990, Guerrero and Urbano 2012), and which serve as the foundation of the university’s entrepreneurial orientation. Additionally, the model presents the
configuration of the university’s internal resources and capabilities as essential for the enablement of entrepreneurial intent engendered by formal and informal conditions. Thusly, it summarises the key contextual features of the entrepreneurial university which have been emphasised within the literature as collectively constituting an environment conducive to entrepreneurial behaviour on the part of embedded individuals.

2.5.2 The Micro-Institutional Environment

Reflecting that literature, however, the model does not offer much insight into the underlying dynamics which shape the institutional transformation required for the emergence of such structural and cultural realities. While the literature offers a robust framework against which relative degrees of conformity to the ideal type can be assessed, it tells us comparatively little about how the identified factors are shaped by the prevailing institutional orientation in a given context (Benner and Sandstrom 2000, Krucken 2003, Colyvas and Powell 2006, Wright et al. 2009, Guerrero and Urbano 2012, Perkmann et al. 2013). Understanding of the mechanisms through which the legitimisation of role conceptions consistent with the university’s entrepreneurial orientation is advanced or impeded at the micro-level is extremely limited (Jain et al. 2009, D’Este and Perkmann 2011). Additionally we know little about how micro-level social dynamics frame the variety of challenges academics face in entrepreneurial activities, and how the assumed severity of these challenges is socialised and reinforced.

Indeed, the manner in which institutional persistence or conflict in the university moves to the state of institutional complementarity depicted in the triple-helix is largely overlooked. As Philpott et al. (2011) demonstrates, the ‘European Paradox’, or the perceived under-performance within the EU with respect to the commercial and innovative outputs of R&D points to the critical importance of this process, and an attendant likelihood that underlying institutional mechanisms play a pivotal role. If we are to take seriously the notion of the entrepreneurial university as a significant
institutional actor in the shaping of behaviours relevant to triple-helix models of innovation systems, then we must understand the mechanisms through which it does so. Accordingly, the following section will discuss the significance of the university as a context for such actions, as the individual level implications of the broader institutional transformation entailed in the triple-helix are considered.

2.6 Entrepreneurial Behaviour at the Micro Level - The Academic

The previous section discussed the characteristics of the entrepreneurial university and the potential importance of micro-institutional processes for the emergence of an entrepreneurial orientation in the university context. This section will extend that discussion by considering the re-conceptualisation of the academic role within the entrepreneurial university framework, and addressing the significance of models of entrepreneurial intentionality within this process.

2.6.1 Re-Conceptualising the Academic Role

This transformation of the traditional role of higher education institutions has led to an increasing expectation for the academy to generate ‘useful’ information and to ‘transfer’ it to the wider economy (Gassol 2007). In their engagement with this entrepreneurial process, academic researchers are expected not only to discover and develop promising research opportunities, but additionally to strategically develop and commercialise their research for the creation of innovative goods and services (Benner and Sandstrom 2000). From their review of the literature, Klofsten and Jones-Evans (2000) identify and classify this ‘entrepreneurial’ activity on the part of academia under eight specific headings which are detailed in table 2.3.
Table 2.3: Academic Entrepreneurship Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large scale science projects</td>
<td>Obtaining large externally funded research projects, either through public grants or through industrial sources</td>
</tr>
<tr>
<td>Contracted Research</td>
<td>Undertaking specific research projects with the university system for external organisations</td>
</tr>
<tr>
<td>Consulting</td>
<td>The sale of personal scientific or technological expertise to solve a specific problem</td>
</tr>
<tr>
<td>Patenting/Licensing</td>
<td>The exploitation of patents or licenses by industry from research results</td>
</tr>
<tr>
<td>Spin Off Firms</td>
<td>The formation of new firms or organisations to exploit the results of the university research</td>
</tr>
<tr>
<td>External Teaching</td>
<td>Provision of short courses to non-university personnel/students and external organisations</td>
</tr>
<tr>
<td>Sales</td>
<td>Commercial selling of products developed within the university</td>
</tr>
<tr>
<td>Testing</td>
<td>Provision of testing and calibration facilities to non university individuals and external organisations</td>
</tr>
</tbody>
</table>

(Klofsten and Jones-Evans 2000)

In an effort to conceptualise the roles associated with these behaviours, the literature has variously defined academics engaging in such activities as ‘academic entrepreneurs’, ‘entrepreneurial academics’, or ‘scientific entrepreneurs’ (Spilling 2008). While Brennan et al. (2007) offer a broad definition of an academic entrepreneur as someone who “engages in related entrepreneurial endeavours as an adjunct to their academic activities”, Perkmann et al. (2013, p.423-424) further distinguish between
‘academic engagement’, which they define as “knowledge-related collaboration by academic researchers with non-academic organisations”, and ‘academic entrepreneurship’ which they define along with intellectual property collaboration as representative of commercialisation.

Because the focus in this study is on understanding the mechanisms which shape the intent of individuals to act entrepreneurially in the sense articulated by Etzkowitz et al. (2000) in their conceptualisation of the entrepreneurial university, as opposed to their intent to choose between different mechanisms of knowledge transfer, this study deliberately adopts a broad focus with respect to the types of entrepreneurial activities academics may choose to engage in. Focusing on a similar set of entrepreneurial behaviours to those outlined by Klofsten and Jones-Evans (2000) in table 2.3, Philpott et al. (2011) outline the spectrum of activities presented in figure 2.3 in terms that allow us to conceive of academic behaviours in terms of their proximity to the entrepreneurial and traditional academic paradigms.

Figure 2.3: Traditional - Entrepreneurial Academic Behavioural Paradigm

Closer to the Entrepreneurial Paradigm

Creation of a Technology Park
Spin-off Firm Formation
Patenting and Licensing
Contract Research
Industry Training Courses
Consulting
Grantsmanship
Publishing Academic Results
Producing Highly Qualified Graduates

Closer to the Traditional Paradigm

(Philpott et al. 2011)
Regardless of the specific manifestation of entrepreneurial orientation that is observed, implicit within all such theoretical frames is a conceptualisation of the academic role which is also situated somewhere on the traditional-entrepreneurial continuum. This principle is captured in Lam’s (2011) typology of academic orientation, which is presented in table 2.4.

<table>
<thead>
<tr>
<th>Orientational Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Traditional</td>
<td>Believes academia and industry should be distinct and pursues success strictly in academic arena</td>
</tr>
<tr>
<td>Pragmatic Traditional</td>
<td>Believes academia and industry should be distinct, but also recognises need to collaborate for pragmatic reasons</td>
</tr>
<tr>
<td>Hybrid</td>
<td>Believes in the fundamental importance of science - business collaboration for scientific advancement, but also recognises need to maintain boundary</td>
</tr>
<tr>
<td>Entrepreneurial</td>
<td>Believes in the fundamental importance of science - business collaboration for knowledge application/exploitation</td>
</tr>
</tbody>
</table>

(Lam 2011)

As such, the significance of the entrepreneurial university, as the institutional context for action, comes from the manner in which it constrains, enables, or otherwise affects the tendency of academics who inhabit them to conceive of their role in a manner which is compatible with entrepreneurial behaviour. Through its formal and informal conditioning factors, its resources, and its capabilities, the entrepreneurial university is understood within the literature as a primary factor in the cultivation of entrepreneurial intent.
While a number of studies have detailed the manner in which the expansion of the traditional academic role boundaries to incorporate entrepreneurial action is often manifested as a reframing of commercial ends as serving academic goals (Mosey and Wright 2007, Jain et al. 2009, Sanders and Miller 2010, Lam 2010, Lam 2011), these studies bring us no closer to understanding the relevance of the entrepreneurial university in this process. The mechanisms through which the role dissonance inevitably entailed in the emergence of a new institutional orthodoxy is alleviated or exacerbated by contextual factors is not explained within such a framework. In the absence of such explanatory mechanisms the proliferation of entrepreneurial intent so integral to the entrepreneurial university is only partially understood (O’Shea et al. 2007, Guerrero and Urbano 2012).

2.6.2 Modelling Entrepreneurial Intentionality

This problem is underscored when one considers the nature of entrepreneurial intentionality itself. Entrepreneurship, as defined by Hisrich et al. (2005), is the process of recognition, evaluation, and exploitation of opportunities. As Krueger (2000) argues, the recognition or identification of such opportunities is itself based on a cognitive infrastructure which shapes how opportunities are perceived, and as such how intention to act is formed:

“Understanding what inhibits entrepreneurial activity in an organisation requires understanding how intentions towards a prospective course of action are constructed. Mental models of what we intend reflect why we intend an action. Intentions-based models capture how individuals really formulate mental models. Based on well-developed theory and robust empirical evidence about intentions, we have proposed a social psychological model of how opportunities emerge. Perceptions of desirability (personal and social) and perceptions of feasibility (personal and organisational) are critical to the construction of intentions towards important behaviours.” (Krueger 2000, p.20).
This model is presented in figure 2.4. What intentions based models propose is that the levels of entrepreneurial activity observed in a given organisational context will in turn reflect the level of opportunity perception displayed by embedded individuals (Shapero 1982). The implication for the university is that the factors which shape the level of opportunity recognition displayed by academics underpin the entrepreneurial orientation of the organisation itself, and thus its likelihood of becoming an entrepreneurial university in the first place.

![Figure 2.4: Krueger’s Model of Entrepreneurial Intent](image)

(Krueger 2000)

As a means of offering a classification of these factors, and drawing on both Shapero’s (1982) model of the entrepreneurial event and Ajzen’s (1987) theory of planned behaviour, Krueger (2000) presents the following four factors as the major antecedents of behavioural intent:
1. **Perceived Desirability (Personal Attitude)**

   Along with social norms, personal attitude forms the basis of the perceived desirability of the target behaviour. Personal attitude is dependent upon perceptions of the consequences of performing the behaviour on a personal level in terms of potentially beneficial or negative outcomes.

2. **Perceived Social Norms**

   This construct, as the second base element of perceived desirability, is dependent upon perceptions of the attitudes of salient others in the individual life and work towards the performance of the behaviour in question. In an organisational context these salient others may be colleagues, leadership figures, or role models.

3. **Perceived Self-Efficacy**

   Self-efficacy refers to the individual’s perception of competence in the performance of the target behaviour. It is additionally linked to persistence in the performance of the target behaviour in the face of obstacles.

4. **Perceived Collective-Efficacy**

   If the target behaviour requires the assistance of other organisational figures for its performance, perceptions of collective-efficacy are likely to be significant. Perceptions of low collective-efficacy may consequently inhibit intent to perform the target behaviour.

The cognitive infrastructure constituted by these constructs is what shapes the individual’s intent, and therefore propensity, to perform the relevant behaviour. Propensity is defined in this context as the individual’s disposition towards performance of the act (Shapero 1982). The significance of these behavioural antecedents is reflected in a number of studies in the university based entrepreneurship
literature which emphasise their value as a focal point for analysing the emergence of entrepreneurship (Goethner et al. 2012, Obshonka et al. 2012). However, the manner in which these factors are shaped by micro-institutional dynamics is largely unexplored (Thornton et al. 2011, Guerrero and Urbano 2012). Indeed, as Krueger (2007) argues, understanding of the underlying structural factors which enable or constrain entrepreneurial thinking is generally under-explored in the entrepreneurial intentions literature. Learning of entrepreneurial attitudes, and the internalisation of biases and assumptions which have much influence on control beliefs, is strongly linked to social context and as such is of much importance to understanding of what underpins entrepreneurial action (Krueger 2007).

This is a significant shortcoming in the field of interest here, as the entrepreneurial university is in part understood as a social and cultural environment which supports entrepreneurial behaviour (Clark 1998), therefore shaping in some way how individual academics perceive the feasibility and desirability of associated acts (Shapero and Sokol 1982). Universities, however, are “complex social organisations with distinctive cultures” and their unique orientation is reflected in the embedded values, attitudes, beliefs, which have consequences for the behavioural patterns of their members (Sporn 1996, p.41). Failure to account for the interactional effect of these situational factors with individual factors is, as O’Shea et al. (2007) argue, to settle for only a partial explanation of the emergence of the entrepreneurial university. Understanding the formation of intentions must therefore go beyond analysis of individual characteristics and consider the influence of micro-institutional dynamics in this process.

2.7 Implications for our Understanding of Entrepreneurial Behaviour in the Academy

Krueger’s (2000) intentions model poses significant questions for both contemporary interpretations of entrepreneurial behaviour on the part of academics, and the emergence of entrepreneurial universities themselves. The formation of entrepreneurial intent appears to be subject to micro-level institutional mechanisms which underpin
institutional transformation in a number of ways (Guerrero and Urbano 2012). The implications of this assertion will be discussed in the following sections.

2.7.1 Micro-Cognitive Underpinnings of the Entrepreneurial University

The emergence of the entrepreneurial university is understood within the literature as a process of institutional evolution, with underlying institutional mechanisms of persistence and change consequently being of great significance. Additionally, as all universities vary in their adherence to any ideal type, they will be subject to distinctive and local arrangements of contending institutional orders (Sporn 1996). As Dacin (1997) argues, such arrangements matter for organisations because of their role in shaping both individual preferences and the perceptions held by those individuals with respect to various activities.

Wright et al. (2009) assert that these contextual characteristics are likely to have a considerable impact on the development of commercialisation processes, and consequently, are likely to play a substantial role in shaping the emergence of behaviour which can be considered ‘entrepreneurial’ in any sense. The motivation for legitimacy seeking behaviours is influenced by the socially constructed norms of the prevailing institutional order, suggesting that there is a relationship between the extent to which particular activities are considered legitimate on the one hand, and the extent to which there exists a propensity for the engagement with such activities on the other (Dillard et al. 2004).

The literature therefore suggests that the cognitive underpinnings of the institutional order referred to by Etzkowitz et al. (2000) as the entrepreneurial university, are themselves directly related to the cognitive underpinnings of entrepreneurial intent. Although a number of studies point to the importance of role re-conceptualisation along a traditional-entrepreneurial continuum as an underlying element of entrepreneurial behaviour itself (Jain et al. 2009, Lam 2011), the micro-institutional dynamics through
which the cultural-cognitive context of the university constrains or enables this process is greatly under-explored (Bercovitz and Feldman 2008, Jain et al. 2009, Urbano and Guerrero 2011). As such, significant questions remain as to how tensions and contradictions between various points on Philpott et al.’s (2011) behavioural spectrum are both manifested and are resolved. This raises the questions of how the recognition and evaluation of entrepreneurial opportunities is shaped by the entrepreneurial orientation of the university itself (Philpott et al. 2011, Guerrero and Urbano 2012).

The answers to such questions are central to our understanding of both entrepreneurial behaviour on the part of academics, and the emergence of the entrepreneurial university itself. As Jain et al. (2009, p.922) argue, exploring such questions “can illuminate key policy debates related to the evolving character of universities.” Empirical evidence supports the assertion that the inhibition or cultivation of entrepreneurial intent in an organisation is ultimately defined by the organisation’s role in increasing or decreasing desirability and feasibility perceptions (Krueger 2000). As the organisations in question in this study, namely universities, themselves represent highly institutionalised environments with unique cultural attributes (Sporn 1996), the interplay between the institutional dynamics at work and the formation of these perceptions is of great significance to scholars and policy makers alike. In the following sections, the contribution to the literature posed by an exploration of these issues will be outlined as it relates to both desirability and feasibility perceptions at the micro-level.

2.7.2 Perceived Desirability and the Embeddedness of Entrepreneurial Logic

In framing the perceived costs and benefits of engaging in a given mode of behaviour, desirability perceptions are in many respects fundamental to the entrepreneurial act (Krueger 2000). As such, the manner in which they are shaped by micro-institutional dynamics is of interest to a number of debates within the university based entrepreneurship literature. As the neo-institutional literature demonstrates, behaviour in any organisational context is not pursued purely on the basis of rational cost-benefit analyses. Rather, an actor’s survival and success in a given institutional domain is
largely dependent upon its attendance to externally legitimated standards and structures (Meyer and Rowan 1977, Greenwood et al. 2008, Thornton and Ocasio 2008). Indeed, these structures play a significance part in shaping what is regarded as success in the first place (Thornton and Ocasio 2008).

The implications for the university based entrepreneurship literature are manifold. By exploring the impact of micro-institutional dynamics on the desirability of entrepreneurial behaviour, understanding of both the acquisition and proliferation of the legitimacy of entrepreneurial behaviour is manifested at the micro-level in the university may be significantly enhanced (Owen-Smith and Powell 2001, Benner and Sandstrom 2002, Krucken 2003, Owen-Smith 2003, Colyvas and Powell 2006, Colyvas 2007, Wright et al. 2009, Bjerregaard 2010, Guerrero and Urbano 2012).

Additionally, and as discussed previously in this chapter, the centrality of roles in this process is of much significance within the literature. Social roles, to the extent that they shape behavioural boundaries, are a key mechanism through which behaviour is shaped by institutions, as in their institutionally given specifications they influence what an individual will regard as an appropriate and desirable course of action (Scott 2001, Reay et al. 2006, Delbridge and Edwards 2008). The manner in which micro-institutional dynamics condition the perceived legitimacy of entrepreneurial behaviour is of much interest, as both the persistence and transformation of the academic role in both the individual and collective sense is integral to the emergence of the entrepreneurial university (Jain et al. 2009, Lam 2010, 2011). This also has implications for the study of entrepreneurial motivation, as it is within the web of taken-for-granted goals and assumptions which prevail in that context that desirable and motivating ends are identified (Thornton and Ocasio 2008, Carsrud and Brannback 2011).

Similarly, the dynamics of behavioural legitimation at the micro-level pose significant implications for the manner in which entrepreneurial behaviour is reframed as attending to academic ends, a phenomenon recognised within the literature as a key element of

In conclusion, exploring the impact of institutional dynamics on the proliferation of entrepreneurial desirability as they are manifested at the micro-level in the university would address calls in the literature for deeper exploration of both the contextual factors which shape the antecedents of entrepreneurial behaviour, and the mechanisms through which entrepreneurial desirability is socially reinforced. In the next chapter, the proposed synthesis of the university based entrepreneurship concepts referred to here and the neo-institutional mechanisms which may further explain their operation will be discussed in greater detail. A summary of the proposed contributions to the literature outlined in this section is provided in table 2.5.

<table>
<thead>
<tr>
<th><strong>Table 2.5: Proposed Contributions - Desirability Perceptions and Micro-Institutional Dynamics</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Contribution</td>
</tr>
<tr>
<td>(1) Develop current understanding of the processes through which entrepreneurial legitimacy is both constrained and advanced in the university context</td>
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<td><strong>(6)</strong></td>
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<td><strong>(7)</strong></td>
</tr>
</tbody>
</table>
2.7.2 Perceived Feasibility and the Embeddedness of Entrepreneurial Logic

Perceived desirability is not the only significant factor in the formation of entrepreneurial intent, perceived feasibility is also of much importance (Krueger 2000). The significance of feasibility perceptions spans from their impact on the propensity of individuals to pursue, and indeed identify, entrepreneurial opportunities (Krueger 2000). In this sense, the formation of efficacy perceptions is of much significance in the emergence of an entrepreneurial orientation in the university. Consequently, they are central to the institutional transformation which underpins the triple-helix model as a whole (Etzkowitz et al. 2000, Glassman et al. 2003, Prodan and Drnovsek 2010). Efficacy perceptions are fundamental to what Shane and Eckhardt (2003) refer to as the interaction between individuals and opportunities. Whereas desirability perceptions are underpinned by what one is motivated by, feasibility perceptions are underpinned by the plausibility of engagement in a certain behaviour generating those desired outcomes. They are therefore related to judgements of how well the individual, and any other individuals or groups whose assistance may be required, can execute the course of action which is required in the satisfactory resolution of the anticipated scenario (Bandura 1982, Ajzen 1991).

Delineated as self-efficacy and collective-efficacy assessments, the manner in which these perceptions are shaped by institutional dynamics at the micro-level is significant in the context of several key themes within the university based entrepreneurship literature. Firstly, exploring this issue stands to develop current understanding of the relationship between the socio-cultural context of the individual academic and their assessment of entrepreneurial opportunities as scenarios within which they could expect to generate satisfactory outcomes (Wood and Locke 1990, Tubbs and Ekeberg 1991, Argyres and Liebeskind 1998, Chell and Allman 2003, Kenney and Goe 2004, Shane 2004, O'Shea et al. 2007, Goethner et al. 2012). In this respect, the micro-level dynamics through which such assumptions are socially reinforced may be central to the recognition and evaluation stages of entrepreneurial opportunities. They may as such be an important factor in shaping what comes to be perceived as an opportunity in the first place. This also poses significant implications for understanding of entrepreneurial
motivation within the field, as an individual’s motivation to engage in a behaviour is shaped by the perceived likelihood of it achieving certain ends (Tubbs and Ekeberg 1991, Carsrud and Brannback 2011).

The collective dimension of feasibility also draws attention to the importance of the academics perceptions of entrepreneurial support structures in the formation of entrepreneurial intent. One such structure is the TTO, which is intended to facilitate academics’ access to the capabilities and resources necessary for entrepreneurial endeavours, as well as serving as important boundary-spanning organisation between the institutional domains of the university and industry (Siegel et al. 2003, Siegel et al. 2004, Markman et al. 2005, Wright et al. 2008, Giaretta 2013). Perceptions of TTO effectiveness may vary significantly (Siegel et al. 2003, Siegel et al. 2007), and this in turn has important implications for collective-efficacy perceptions as it shapes the perceived risk of initiatives which require the TTO’s participation. In the context of the traditional relational patterns of the academic domain, TTOs and TTO professionals are institutionally novel actors, and as such the willingness of academic actors to engage with them may be positively or negatively influenced by the embeddedness of an entrepreneurial orientation in the local context (Siegel et al. 2003, Jensen et al. 2003, Powers and McDougall 2005).

Similarly, this embeddedness may be reflected in the flexibility and support offered by administrative structures and the bureaucracy of the university, which is itself a crucial factor in the formation of feasibility assessments (Siegel et al. 2003, Cunningham and Harney 2006). As Krucken (2003) suggests the establishment of TTOs may represent no more than symbolic or superficial adaptation to the third mission in a university context, and as Lam (2010, p.310) similarly suggests, it is “possible for an institution seeming to change at the formal policy level without concomitant changes in cultural norms at the organisational or individual levels.” The substantiveness of this commitment may be of much significance to collective-efficacy perceptions, and consequently to both policy and theory within the field.
In conclusion, an exploration of the manner in which micro-institutional dynamics shape the perceived feasibility of entrepreneurial behaviour would enhance current understanding of the contextual factors which shape the antecedents of entrepreneurial intent. This would pose significant implications for several streams of research within the university based entrepreneurship literature, including the socialisation of assumptions relating to the feasibility of entrepreneurial behaviour, the nature of opportunity recognition, evaluation, and exploitation, the nature of entrepreneurial motivation, and manner in which perceptions of entrepreneurial support structures are formed. The proposed synthesis of the university based entrepreneurship concepts referred to here and the neo-institutional mechanisms which may further explain their operation will be discussed in greater detail in the next chapter. A summary of the proposed contributions to the literature outlined in this section is provided in table 2.6.

<table>
<thead>
<tr>
<th>Proposed Contribution</th>
<th>University Based Entrepreneurship Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Develop current understanding of the manner in which feasibility perceptions are shaped and reinforced in the university context</td>
<td>The Socialisation of Feasibility Perceptions (Kenney and Goe 2004, Mosey and Wright 2007, O’Shea et al. 2007, Goethner et al. 2012)</td>
</tr>
<tr>
<td>(2) Develop current understanding of the process through which academics identify, evaluate, and decide to exploit entrepreneurial opportunities</td>
<td>Opportunity Recognition, Evaluation, and Exploitation (Shane 2004)</td>
</tr>
<tr>
<td>(3) Develop current understanding of entrepreneurial motivation by exploring the formation of efficacy perceptions in the university context</td>
<td>Motivation to Engage in Entrepreneurial Behaviour (Morales-Gualdrón et al. 2009, D’Este and Perkmann 2011, Hayter 2011, Abreu and Grinevich 2013)</td>
</tr>
</tbody>
</table>
Develop current understanding of the manner in which academic willingness to engage with TTOs is shaped in the university context


Develop current understanding of academic perceptions of administrative barriers to entrepreneurship and the attendant implications for collective-efficacy perceptions

Administrative Support for Entrepreneurship (Krucken 2003, Siegel et al. 2003, Cunningham and Harney 2006)

Develop current understanding of academic perceptions of organisational adaptation to the third mission in the university context, and the attendant implications for collective-efficacy perceptions.

Substantive vs. Superficial Adaptation to the Third Mission (Krucken 2003, Lam 2010, Bercovitz and Feldman 2008)

### 2.8 Conclusion

This chapter has presented the background literature to the central questions pursued in this study. The emergence of the KBE as the dominant economic paradigm of our age, with its attendant emphasis on the role of knowledge creation and distribution as the key driver of economic growth, has been described. The chapter then presented the NSI construct, which endeavours to construct a holistic framework within which the complex networks of actor relationships involved in the creation and diffusion of innovative knowledge can be better understood. In conceptualising the configuration of institutional forces with which systems perspectives of innovation are concerned, the
triple-helix has emerged in the literature as the leading theoretical model. This model proposes a dynamic and mutually interdependent process of interaction between government, industry, and the university that generates the knowledge infrastructure through which innovation proliferates. Consequently, it predicts a process of institutional transformation wherein the university evolves from its traditional institutional form to the entrepreneurial university, and within which the third mission of economic development is institutionalised.

This chapter has asserted that the emergence of the entrepreneurial university is underpinned by processes of institutional persistence and change through which the desirability and feasibility of entrepreneurial behaviours are shaped. Consequently, the argument that antecedents of entrepreneurial intent are themselves subject to prevailing institutional arrangements in a given organisational context was presented, and as such the institutional mechanisms through which perceptions of desirability and feasibility are formed were deemed of great significance to our understanding of the micro-foundations of the triple-helix as a whole. An outline of this emergent framework is presented in figure 2.5.

In the following chapter, a framework which further integrates the institutional perspective on the emergence and persistence of behavioural modes with the outlined model of entrepreneurial intent will be presented. In the process, the argument presented in this chapter that the value of this integrated perspective spans from its conceptualisation of the antecedents of entrepreneurial behaviour in the university in a manner which reflects the institutional transformation entailed will be illustrated. It is the cognitive underpinnings of this transformation which ultimately serve as the foundation of the triple-helix as a whole.
Figure 2.5: Overarching Research Framework

- Antecedents of Entrepreneurial Intent
- Micro-Institutional Dynamics
- Cognitive Underpinnings of Entrepreneurial Propensity
- University’s Entrepreneurial Orientation
CHAPTER THREE: LITERATURE REVIEW II - THE MICRO-INSTITUTIONAL CONTEXT AND ENTREPRENEURIAL INTENTIONS IN THE UNIVERSITY

3.1 Introduction

Having provided a review of the knowledge based economy, innovation systems, and university based entrepreneurship literatures as they relate to the research objectives in the previous chapter, this chapter will provide a review of the literature which underpins the institutional perspective employed within the study. The emergence of neo-institutionalism as a lens of analysis in organisational studies will first be described in section 3.2, after which the institutional logics perspective and its suitability for understanding the institutional persistence, diffusion, and change implicit within the entrepreneurial university construct will be discussed in section 3.3. A framework for exploring the manner in which the micro-institutional context may have consequences for entrepreneurial cognition and action in the context of the university will then be presented in section 3.4, focusing in particular on the potential for micro-level dynamics to shape the antecedents of entrepreneurial intent presented in Krueger’s (2000) intentions model. Finally, a summary of the proposed contribution of the study will be provided before the chapter is concluded.

3.2 Institutions

Having discussed in the previous chapter the extent to which from an entrepreneurial intentions perspective, the micro-institutional dynamics which shape intentionality at the micro-level are under-explored within the university based entrepreneurship literature, this section will develop the conceptual framework adopted by this study in addressing this gap in the literature. Firstly, a review of the central tenets of the
institutional theory literature will be provided, after which the emergence of neo-institutional analysis within the field of organisation studies will be discussed.

3.2.1 What are Institutions?

An institution is a relatively enduring set of rules and organised practices, embedded in cultural-cognitive, normative, and regulative structures and activities that provide both meaning and legitimacy to social behaviour (March and Olsen 1995, Scott 1995). As Meyer and Rowan (1977) state, the development of formal structures within organisations is a manifestation of the powerful institutionalised rules through which an actor identifies its social purposes, and describes the appropriate means through which these purposes may be pursued. Consequently, institutional theory concerns itself with the deep seated, more durable aspects of social structure, including the processes through which rules, norms, and routines are established as rigid guidelines for social behaviour (Scott 2001). Institutional theory is therefore concerned with some of the most fundamental questions of organisational science (Greenwood et al. 2008).

DiMaggio and Powell (1991) argue that the institutional perspective finds its roots in Durkheim’s theory of social facts. Immergut (1998, p.16) similarly suggests that at the theoretical core of institutionalism is Durkheim’s contention that “categories of thought precede thought, and that these categories are social or cultural constructs.” In analysing the significance of this contention in Durkheim’s seminal sociological text, ‘The Division of Labour in Society’ (1933), Jones (1986, p.61) states that:

“Because the essential trait of social facts is their external coercive power, Durkheim first suggested that they could be recognised by the existence of some predetermined legal sanction or, in the case of moral and religious beliefs, by their reaction to those forms of individual belief and action which they perceived as threatening. But where the exercise of social constraint is less direct, as in those forms of economic organisation which give rise to anomie, their presence is more easily ascertained by their "generality combined with objectivity", i.e., by how widespread they are within the
group, while also existing independently of any particular forms they might assume. But whether direct or indirect, the essential defining characteristic of social facts remains their external, coercive power, as manifested through the constraint they exercise on the individual.”

In Durkheim’s theorising we can see the roots of the institutional tradition in two respects. Firstly, in its focus on those principles which take on a fact like status in the social realities of both individuals and organisations, and secondly, in its concern with the manner in which these ‘facts’ pose sanctions for non-conformity. As Jones (1986) maintains, Durkheim’s conceptualisation of social facts was not limited merely to patterns of functional behaviour such as thinking, acting, or interpreting environmental events. They were also presented as an underlying factor in the structure of society itself, affecting everything from networks of communication to the relationships between its various parts. Indeed, Durkheim argued, society’s structure was nothing more than functions which had become consolidated over long periods of time (Giddens 1984, Jones 1986). This argument is reflected in Powell and Colyvas’ (2008, p.281) review of the micro-institutional literature in which they state that “social order is created on the ground floor, through situated local practices. As practices are reproduced over time and across settings, macro categories emerge from these interactions and negotiations.”

The significance of institutions in the analysis of organisational dynamics, therefore, is that organisational behaviour both at the field and the micro-level is subject to pressures generated by the fact-like values, norms, and attitudes which prevail in an institutional domain (Meyer and Rowan 1977, Zucker 1983). What this means for behaviour and structural form in an organisational context is that they are not merely a response to the demands of technical efficiency, rather they are also subject to powerful institutional mechanisms which generate considerable pressures for conformity. The emergence of this new mode of institutional analysis at the micro-level will be discussed in the following section.
3.2.2 Neo-Institutional Theory and the Study of Organisations

In its analytical origins in the study of organisations, the theory of institutions can trace its origins to both Selznick’s (1948, 1949, 1957) empirical work on the nature of an organisation’s relationship with its institutional environment, and Parson’s (1956) theories on the process through which institutions integrate organisations with each other in accordance with rules, contracts, and authority (Thornton and Ocasio 2008). It was in the late 1970s and early 1980s, however, that the beginning of a major revitalisation in scholarly enthusiasm for institutional analysis was sparked. The three central texts of this resurgence were papers by Meyer and Rowan (1977), Zucker (1977), and DiMaggio and Powell (1983), which collectively set forth the five basic principles outlined in Table 3.1.

| Table 3.1: The Five Key Principles of the Late 1970s/Early 1980s Institutional Thesis |
|---------------------------------|----------------------------------------------------------------------------------|
| **1**                          | Organisations are influenced by their *institutional contexts*, which consist of rationalised myths of appropriate conduct. |
| **2**                          | Organisations with difficult to define and/or evaluate outputs are especially sensitive to institutional pressures. Such organisations are referred to as *institutionalised organisations*. |
| **3**                          | Organisations become isomorphic with their institutional context in order to secure social approval (*legitimacy*), which provides survival benefits. |
| **4**                          | Conformity to institutional pressures may be contrary to the dictates of efficiency, and conformity may therefore be *ceremonial*, with symbolic structures *decoupled* from an organisation’s technical core. |
| **5**                          | Institutionalised practices are typically *taken-for-granted*, widely accepted, and resistant to change. |

(Adapted from Greenwood et al. 2008)
This scholarly movement, which came to be known as ‘the new (or neo) institutionalism’, additionally came to be associated with a rejection of rationality as a basis of explanation for organisational structure and action, emphasising the power of legitimacy as opposed to efficiency in explaining success and survival (Greenwood et al. 2008, Thornton and Ocasio 2008). In this respect, they acknowledged the futility of attempting to explain human behaviour without reference to history, culture, tradition, and idiosyncratic and localised institutional configurations. Neo-institutionalism therefore challenged rational choice models of the individual and the organisation, seeking instead to draw greater attention to both the social and historical contexts within which behaviour arose (DiMaggio and Powell 1991). As Scott (2008) illustrates, neo-institutionalist thinking quickly took root in a wider variety of intellectual traditions, with various streams emerging in political science, economic, and sociological thought. In his review of the developments within institutional theory over the preceding decades, Scott (1995, 2001) presented a unifying framework within which the various strands could be distinguished in the form of his ‘pillars’ of institutional analysis. These pillars are outlined in table 3.2.

<table>
<thead>
<tr>
<th>Table 3.2: Scott’s Three Pillars of Institutional Analysis</th>
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<tbody>
<tr>
<td>Basis of Compliance</td>
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<tr>
<td>Basis of Order</td>
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<tr>
<td>Mechanisms</td>
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<tr>
<td>Logic</td>
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<td>Indicators</td>
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The regulative dimension of Scott’s framework refer to rule based sanctions through which an institution regularises and constrains behaviour, the normative dimension is concerned with the prescriptive, evaluative, and obligatory dimensions of social interaction, and finally the cultural-cognitive dimension refers to the shared frames of perception through which events are interpreted and meaning is created (Scott 1995). This thesis is primarily concerned with the cultural-cognitive dimension of institutionalism, arguing that the foundational infrastructure for the entire institutional framework is ultimately to be found at this level (Scott 2004). Indeed as Phillips and Malhotra (2008) argue, cultural-cognitive avenues of investigation are the distinctive contribution of organisational science to the field of institutionalism as a whole. It is this which distinguishes the neo-institutional approach from the ‘old’ institutionalism, which focused on influence and coalitions as opposed to the emphasis on legitimacy, embedded routine, and meaning systems so prevalent in the neo-institutional perspective (Greenwood and Hinings 1996). Neo-institutionalism therefore provides scholars of organisational analysis with a more robust framework for addressing the variability in micro-level responses to institutional pressures (Greenwood et al. 2008). In particular, it provides a better developed conceptual basis for understanding the internal organisational dynamics which constrain and enable the emergence of novelty which underpins institutional transformation (Greenwood and Hinings 1996).

Within this lens of analysis, preferences are explicitly understood as being defined in context, and as such within a web of taken-for-granted goals and assumptions which are informed by mandated social obligations and attendant pressures for conformity
(Thornton and Ocasio 2008). The development of this cultural-cognitive tradition will be described in more detail in the following section.

3.2.3 Developments in the Cultural-Cognitive Pillar of Institutionalism

As the field of organisational institutionalism developed, questions relating to the cultural-cognitive underpinnings of institutional effects grew ever more prominent (Greenwood et al. 2008). As DiMaggio (1991) noted, the passivity of organisations in the face of institutional forces was increasingly acknowledged as overstated, and as such the internal processes triggered by field influences themselves produced an array of responses and configurations which were far from homogenous. The nature of these processes and the micro-level strategies engaged in response to institutional influences became the focus of multiple new lines of investigation, all of which called into question assumptions of isomorphism. As Thornton and Ocasio (2008) argue, new schools of thought which shared with the seminal theories of neo-institutionalism an interest in cultural rules and cognitive structures instead began to focus both on the coexistence of multiplicities of institutional logics, and the manner in which the dominant institutional logic was interpreted and given meaning by those at the organisational and individual levels. This dominant logic provided actors with shared motives and role identities, but these in turn were elaborated, manipulated, and variously employed in self-interest by the actors themselves (Friedland and Alford 1991).

Consequently, institutional logics presented new ways of understanding the persistence, diffusion, and change of institutions. The manner in which institutions contended for dominance, and the inherent contradictions in logic which arose in the process, endowed both individuals and organisations with the cultural resources required for the emergence of local approximations of institutional orthodoxy (Friedland and Alford 1991). Within this perspective, we come to see action as a consequence of interplay between institutional structure and individual agency. Behavioural legitimacy, and the legitimacy of novel institutional forms, is therefore a product of the attendance of new
behaviours or structural forms to cognitively and normatively recognised goals, which themselves fall within a shared logical system with professionally, organisationally, or sectorally defined boundaries (Thornton and Ocasio 2008). As March and Olsen (2005) surmise, these logics impact upon identity, character and preferences at the individual level, and consequently impress upon the individual both the type of person they are and the type of person they want to be. As such they pose great significance for our understanding of the entrepreneurship which underpins the emergence of novel structures and behaviours.

3.3 Institutional Pluralism and Logics

Having outlined the background to the emergence of neo-institutional analysis of organisations in the previous section, this section will describe two key conceptual frameworks which have been become increasingly significant within the cultural-cognitive lens of analysis in particular. These are institutional pluralism and institutional logics. This section will therefore develop the conceptual and theoretical basis for the exploratory framework presented in section 3.4.

3.3.1 Pluralistic Environment of Institutions and Individuals

A central element of the cognitive dimension of institutionalism is the emphasis on the institutionally pluralistic environments within which organisations and individuals operate (Kraatz and Block 2008). It therefore recognises the continual state of contestation and intermittent periods of overt conflict which come to define any organisation or individual’s institutional reality. As Kraatz and Block (2008, p.243) state:

"An organisation is subject to multiple regulatory regimes, embedded within multiple normative orders, and/or constituted by more than one cultural logic. It is a participant in multiple discourses and/or a member of more than
one institutional category. It thus possesses multiple, institutionally derived identities which are conferred upon it by different segments of its pluralistic environment. An ideal-typical example of such an organisation is the American research university. Clark Kerr well-captured the pluralistic character of these organisations when he observed that the American university is ‘so many different things to so many different people that it must, of necessity, be partially at war with itself’ (Kerr, 1963, p.8).”

The university, Kraatz and Block (2008) continue, is like other organisations in that it is subjected to the competing demands of a heterogeneous institutional environment, and as a result, it comes to generate in its own structures persistent and deep-rooted tensions and contradictions as its multiple identities come into contact with one another. If institutions are understood as the rules of the game, then the organisation confronting institutional pluralism plays more than one game at a time. The institutional obligations to which the organisation is subjected create behavioural mandates for the organisation to fulfil, and these in turn manifest themselves as contending logics of action at the micro-level.

### 3.3.2 Institutional Logics

Three important definitions in the emergence of logics of action in the institutional literature are provided in table 3.3. While these definitions vary in their emphasis, what unifies them is the assertion that both individual and organisational behaviour can only be fully understood in its social and institutional context, and it is this context which both regularises behaviour and presents opportunities for agency and change (Thornton and Ocasio 2008).

<table>
<thead>
<tr>
<th>Table 3.3: Defining Institutional Logics</th>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
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<tr>
<td>The complicated, experientially constructed, and thereby contingent set of rules, premiums</td>
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</table>
and sanctions that men and women in particular contexts create and recreate in such a way that their behaviour and accompanying perspective are to some extent regularised and predictable.

The prevailing institutional order has a central logic that guides its organisational principles and provides actors with vocabularies of motive and a sense of self. The practices and symbols are available to social actors at the individual, group, and organisational level to elaborate.

The socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organise time and space, and provide meaning to their social reality.

<table>
<thead>
<tr>
<th>and sanctions that men and women in particular contexts create and recreate in such a way that their behaviour and accompanying perspective are to some extent regularised and predictable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prevailing institutional order has a central logic that guides its organisational principles and provides actors with vocabularies of motive and a sense of self. The practices and symbols are available to social actors at the individual, group, and organisational level to elaborate.</td>
</tr>
<tr>
<td>The socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organise time and space, and provide meaning to their social reality.</td>
</tr>
</tbody>
</table>

(Adapted from Thornton and Ocasio 2008)

Three key principles of the logics construct are of particular significance in the context of micro-institutional analysis. The first, as DiMaggio (1997) acknowledges, is its appealing conceptualisation of the manner in which external rituals and stimuli interact with cognitive models of social behaviour, therefore providing a framework for understanding the emergence of the routine behaviour that underpins institutional change. Second, institutional logic accommodates the fragmented cultural realities of social actors implied in pluralistic perspectives and thereby allows us to frame cultural conflict as the product of inconsistent institutional logics (DiMaggio 1997). And third, these logics of action are embedded to greater or lesser degrees in the roles, values, interactions, and practices of organisational members (Thornton and Ocasio 2008). Berente and Yoo (2011) provide a framework which neatly captures the four
dimensions through which the logics construct may be operationalised in qualitative analysis. These dimensions are presented in table 3.4.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>(1) Organising Principles</td>
<td>These guide activity and provide embedded actors with goals and values</td>
</tr>
<tr>
<td>(2) Means-Ends Assumptions</td>
<td>These describe appropriate ends, the means through which they may be pursued, and the causal relationships which link the two</td>
</tr>
<tr>
<td>(3) Role Identity</td>
<td>The individual or collective role identities which frame the content of role behaviour and its underlying legitimacy</td>
</tr>
<tr>
<td>(4) Domains</td>
<td>The spheres of social activity to which institutional principles, assumptions, and role identities are relevant</td>
</tr>
</tbody>
</table>

(Adapted from Berente and Yoo 2011)

It is through these dimensions that the causal power of the underlying logic of institutions is variously manifested in a given social context. Differing interpretations of legitimate organising principles, means-ends assumptions, and role identities contend for dominance in social domains. Clearly, these processes are of much concern to understanding of institutional change, as the contradictions and tensions generated by institutional overlap are fundamental to understanding of the nature of both the persistence and change of social structure and practices (Seo and Creed 2002). Additionally, however, they are of particular relevance in the context of the triple-helix, wherein the overlap and integration of institutions and their attendant logic is of much importance. They therefore seem fundamental to analysis of the emergence of an entrepreneurial orientation in the university, and some significant implications for the university based entrepreneurship literature will be addressed in the following section.
3.3.3 Dimensions of Institutional Logic and Entrepreneurship in the University

Firstly, understanding the emergence and contestation of new *organising principles* within institutional logics is fundamental to our understanding of the micro-foundations of institutional persistence and change (Townley 2002). Organising principles provide institutionally embedded individuals with shared goals, values, and beliefs upon which social cooperation may be based. As such, they facilitate the emergence of trust, as these shared principles provide a basis for predicting the probable future actions of another actor (Sonpar et al. 2009). However, while trust may facilitate cooperation in the context of given institutional domain, it is problematic in the context of inter-institutional interaction where the same mutual recognition of underlying principles may not be in evidence. This is an issue which has much resonance within the university based entrepreneurship literature, where trust is recognised as a critical issue in both the effectiveness of knowledge transfer generally (Santoro and Gopalakrishnan 2000, Mora-Valentin et al. 2004, Bruneel et al. 2010, Garret-Jones et al. 2010, Plewa et al. 2013), and in the willingness of academics to engage with boundary actors such as TTOs in particular (Siegel et al. 2003, Jensen et al. 2003, Levin and Cross 2004, O’Shea et al., 2005 Powers and McDougall 2005).

Secondly, the *framing of means-ends assumptions* is central to our understanding of what legitimises modes of behaviour, and what motivates individuals to engage in them. Thornton and Ocasio (2008, p.112) state that “institutional logics shape and create the rules of the game, the means-ends relationships by which power and status are gained, maintained, and lost in organisations.” This has much significance in the emergence of entrepreneurial behaviour in the academy, as it is central to the process through which academics come to identify entrepreneurship as either a legitimate means through which to pursue their objectives, or a legitimate end in its own right.

Thirdly, *role identities*, both in terms of their content and their underlying legitimacy are a central issue within the university based entrepreneurship literature. As outlined in
chapter two, the re-conceptualisation of roles or the reframing of their attendant behaviours is recognised as a fundamentally important dimension of the micro-foundations of academic behaviour (Mosey and Wright 2007, Jain et al. 2009, Lam 2010, Sanders and Miller 2010, Lam 2011). Roles frame the legitimacy of given modes of behaviour for individuals, and the degree to which an act is congruent with a role in a given context shapes the legitimacy costs of benefits associated with it (Meyer and Rowan 1977, Brown et al. 2012).

Finally, institutional **domains** are inherently significant within triple-helix perspectives given the overlap of institutional spheres that underpins it as a model of systemic innovation. Institutional logic dictates the behavioural boundaries and the logics of action which prevail within given domains, and as such condition individual attitudes both towards the legitimacy those behaviours and the logic of exogenous institutional domains (DiMaggio 1997, Kraatz and Block 2008). Given what Lam (2010) describes as the sociologically ambivalent nature of the ‘boundary work’ involved in entrepreneurial behaviour for academics as they traverse these domains, the manner in which this ambivalence is reconciled as the domains overlap and intersect one another is of much significance to the wider field.

When rival or alternative logics appear, tension is often manifested as mechanisms of institutional persistence serve to maintain the dominance of existing logics and the pre-existing institutional order (Kraatz and Block 2008). Individual agency, meanwhile, seeks opportunity in the emergent institutional contradictions, a phenomenon we will look at in more detail in the next section.

### 3.3.4 Entrepreneurship and Institutional Change

Debate on the relationship between processes of institutional persistence and change is at the very core of institutional theory itself. Institutions are understood as sources of stability and order (Scott 2001). Yet, institutions do change, both in form and content over time (Greenwood and Hinings 1996, Johnson et al. 2000, Brown et al. 2012). How
they change, how institutional entrepreneurs emerge, and how legitimacy is attained are the critical questions (Greenwood et al. 2008). These questions reflect the long standing ‘structure-agency’ problem within the field. As Garud et al. (2007) state, theories which privilege structure over agency and vice-versa sway in emphasis from overly deterministic perspectives, to excessively individualistic models which decontextualise action in a manner which is demonstrably ahistorical.

A solution proposed in the institutional logics field is the concept of embedded agency (Greenwood and Suddaby 2006, Greenwood et al 2008, Thornton and Ocasio 2008). Embedded agency rejects depictions of institutionally embedded individuals as passive recipients of institutional forces, but it does not in the process conceive of change as the produce of rugged entrepreneurial heroes (Powell and Colyvas 2008). It instead emphasises that the enactment of behaviour is not attributable solely to individual agency, but also to socially constructed constraints, premises, and traditions (Green et al. 2009). While individuals may act in self-interest in their pursuit of economic and social advantage, both their conceptualisation of self-interest and their agency to pursue it is simultaneously constrained and enabled by the prevailing institutional logics (Giddens 1984). Preferences, therefore, are defined in context, as are ambitions and designs on future endeavours. As Garud and Karnøe (2003) suggest, the structures within which actors are embedded do not merely provide those actors with constraints on agency, they also serve as a platform for engagement in entrepreneurial action, and provide the raw material for institutional transformation. From the pluralistic standpoint of the logics perspective, we can interpret this material as the diverse and contradictory ideas advocated by the multiple institutions which shape the actor’s environment. The transferral of these ideas and their legitimisation in new institutional domains can itself be understood as underpinning the emergence of novelty (Garud et al. 2007).

Much as the literature referring to emergence of entrepreneurial behaviour on the part of academics explains little about the underlying cognitive processes involved, however, institutional entrepreneurship also requires explanation as to how cognition comes to be manifested as action in an institutional context (Zucker 1977, George et al. 2006). Battilana et al. (2009) reach similar conclusions in their comprehensive review.
of empirical research in the field, and make four recommendations for future work in the field that are particularly relevant to the study at hand. These are presented in table 3.5.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>(1) Research which emphasises an embedded understanding of agency</td>
<td>Research in the field which explores the nature of entrepreneurship in specific social contexts within which actors are embedded, as opposed to studies which disembodied actors and tend towards ‘heroic’ portrayals, is critical to understanding the process of institutional entrepreneurship</td>
</tr>
<tr>
<td>(2) Research which exploits synergies between institutional entrepreneurship and other streams of entrepreneurship research</td>
<td>Synthesis of institutional perspectives of entrepreneurship with streams of entrepreneurship research within other fields offers the best hope of fully conceptualising the nature of embedded agency, and consequently an understanding of entrepreneurship which may enable actors to more effectively direct institutional change</td>
</tr>
<tr>
<td>(3) Qualitative and comparative research which offers a fine-grained analysis of the dynamics of divergent change</td>
<td>A methodological framework which employs a comparative and qualitative approach is most appropriate for generating new insights within the field, yet multi-case comparative studies are rare.</td>
</tr>
<tr>
<td>(4) Research which focuses on the individual and local level of analysis</td>
<td>Scant attention has been paid to the individual and local level of analysis, which has led to an insufficient consideration of the significance of local factors such as identities and norms.</td>
</tr>
</tbody>
</table>

(Battilana et al. 2009)
Suddaby (2010, p.17) supports these conclusions in contending that “if we take seriously the notion that institutions are powerful instruments of cognition, there must be some opportunity in conducting research on how institutional logics are understood and influence at the individual level of analysis.” Models of embedded agency address the manner in which action comes to shape the institutional environment, but do not go as far as illustrating the links between institutional change and the micro-cognitive processes which set this action in motion. George et al. (2006) acknowledge this shortcoming and advance the theory that the cognitive underpinnings of institutional change are best understood in terms of how institutional pressures or novel logics represent scenarios which threaten an individual’s control over outcomes, or represent opportunities to enhance it.

In other words, novel institutional logics interact with the underlying cognitive infrastructure of the individual’s own processes of opportunity recognition. Opportunities relating to scenarios within which actors possess an expectation of mastery or control are most likely to generate non-isomorphic (or entrepreneurial) behaviours, as such expectations are associated with greater levels of risk taking (George et al. 2006). Of course, what opportunities the individual perceives as desirable in the first place is itself conditioned by interpretive frames which prevail within the dominant institutional logic. Institutions provide shared cognitive frames for individuals within which the meaning of action constructed, and the shared nature of these frames which makes their extension or reconstruction in any domain a difficult process (Garud et al. 2007).

This seems an insight of fundamental importance with respect to the cognitive processes which underpin the emergence of entrepreneurial behaviour in the context of the university, as it represents a critical point of intersection between the theory of institutions and entrepreneurial intentionality perspectives. As such, these shared questions with respect to the cognitive underpinnings of entrepreneurship represent an opportunity for conceptual synthesis of the sort referred to by Battilana et al. (2009), with significant potential for extending contemporary understanding of the antecedents of intentionality within both the neo-institutional and university based entrepreneurship literatures. Krueger’s (2000) entrepreneurial intentions framework offers two distinct
lines of enquiry for the conduct of such research, the impact of micro-institutional
dynamics on the perceived desirability of the entrepreneurial act, and the impact of
those dynamics on its perceived feasibility. In the next section, a framework for
proceeding with such an investigation will be described, and the proposed contribution
to the literature will be outlined in detail.

3.4 Neo-Institutionalism and Entrepreneurial Intentions in the University

As discussed in chapter two, a neo-institutional analysis of the cognitive underpinnings
of entrepreneurial behaviour in a university context has significant potential to provide
insight into the micro-foundations of the institutional transformation envisioned within
the triple-helix model. It provides a framework for conceptualising the relationship not
just between cognition and action, but also between context and cognition as it relates
to university based entrepreneurship in particular. Adopting a neo-institutional lens of
analysis, as opposed to perspectives from the old institutionalism or new institutional
economics, positions a concern with the manner in which cultural rules and cognitive
structures underpin a broader process of institutional transformation in the university
context at the centre of this thesis. In particular, a neo-institutional analysis rejects the
more deterministic emphasis of those alternative perspectives, and instead allows
scholars in the field of university based entrepreneurship the opportunity to focus on the
manner in which differentiated institutional logics provide divergent meanings to
entrepreneurial behaviour in different contexts. In turn, it is argued here, this provides
greater opportunity for furthering understanding of the divergent rates of
entrepreneurial behaviour observed across the university population than alternative
institutional perspectives. By synthesising key concepts from the logics and intentions
perspectives we gain a sense of entrepreneurship which lends itself not to deterministic
or individualistic bias, but rather to an interpretation which gives appropriate emphasis
to both structure and agency as instruments of social construction.

The review of the university based entrepreneurship and neo-institutional literatures
presents a number of conceptual overlaps which represent opportunities to address a
number of significant issues within both fields. Having highlighted several significant
themes from the university based entrepreneurship literature in chapter two for which micro-institutional dynamics pose considerable implications, the following sections will discuss in greater detail the nature of these conceptual overlaps and highlight the proposed contribution of this study to these areas of the literature.

3.4.1 Personal Attitude and Institutionally Embedded Role Frames

As outlined earlier in this chapter, role identities are a key mechanism through which the cultural-cognitive effect of institutions is manifested, and role identity constructions are an inherent element of the framing process through which social movement occurs (Goffman 1974, Benford and Snow 2000). The logic of an institution is embedded in such roles, as well as the associated values, interactions, and practices of individual actors (Thornton and Ocasio 2008). Therefore, novel behaviours in the context of a given role identity are always faced with legitimacy challenges which are serve as mechanisms of institutional persistence (Zucker 1977). Entrepreneurial behaviours represent recombination of ideas which are embedded in the pluralistic and often contending institutional logics which underpin the actor’s local environment (Garud et al. 2007). The presence of multiple logics of action for actors at the micro-level implies the presence of contending interpretations of the roles actors play. The tension between interpretations is manifested at the cognitive level as role incongruity, or a lack of alignment between the content of the various role interpretations. Therefore, entrepreneurial behaviour in the context of a given role is to an extent dependent upon the perceived congruence of the entrepreneurial act.

This has a number of significant implications in the context of university based entrepreneurship. As outlined in chapter two, very little is known about the cognitive underpinnings of the role modification which takes place when academics engage in entrepreneurial behaviour, with Jain et al. (2009) calling for the development of a richer and more grounded understanding of the micro-cognitive processes which serve as the foundation of the phenomenon of entrepreneurial behaviour in the academy. The proliferation of studies within the field which draw attention to the importance of both
role re-conceptualisation and the cognitive reframing of entrepreneurial behaviour and outcomes underlines the importance of this phenomenon to the understanding of knowledge transfer as a whole (Jain et al. 2009, Lam 2010, Sanders and Miller 2010, Lam 2011).

Given the range of central issues which are affected, and indeed underpinned, by this framing process it is no surprise that it has been afforded such attention. The institutional nature of the transformation of the university envisioned within Etzkowitz and Leydesdorff’s (2000) triple-helix model highlights the significance of the attendant micro-level changes in personal attitudes towards entrepreneurship. Such micro-institutional change can only fully be understood within the context of pre-existing and situated interpretive frames, as it is within these that institutionally embedded individuals assign meaning to behaviours and respond to pressure for change. From a micro-sociological perspective, roles exist in a form of ‘accommodation’ at any one point, within which a relatively stable combination of interpretations of the role are facilitated (Turner 1990). The impetus for change in the nature of these combinations is provided by destabilising conditions which threaten and challenge the prevailing accommodation. This impetus, or cause, of institutional pressure for change therefore is “the rationale, set of expectations, or intended objectives” that creates this pressure (Oliver 1991, p.161).

This is an extremely important point in the context of the relationship between the macro-level pressures Etzkowitz et al. (2000) identify as underpinning isomorphic convergence towards the entrepreneurial university paradigm across the university population, and the micro-level dynamics through which this effect is manifested. The power of a particular frame to motivate is dependent upon the extent to which claims about its legitimacy are believable for their recipient (Snow et al. 1986). The empirical credibility of these claims are, however, grounded in local experience and locally embedded logic. For the underlying logic of the entrepreneurial university to gain prominence, congruence between entrepreneurial behaviour and “culturally embedded assumptions regarding what is morally right and/or functionally appropriate” is essential (Brown et al. 2012, p.299). From this congruence, and from the connection of
novel role frames to prevailing ones, comes the mobilising resonance which motivates incumbent individuals to act (Snow et al. 1986, Coburn 2006).

The nature of the micro-level dynamics which shape this process is therefore of much importance to the micro-foundations of the entire field. A number of previous studies have highlighted the contrast between ‘bottom-up’ patterns of entrepreneurial university emergence where gradual institutionalisation of the entrepreneurial mission took place as part of an organic cycle of evolution, and the ‘top-down’ or planned approach typical of the European context which has generated relatively problematic experiences (Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011). Institutionally embedded role frames appear an important mechanism through which better understanding of the shortcomings of top-down or interventionist approaches may be realised. An enthusiastic drive on the part of university administrators towards the entrepreneurial ideal may well be thwarted by role tensions which emerge between the prevailing role frame and its entrepreneurial counterpart. Apparent contradictions in underlying logic may consequently frame the entrepreneurial role as a significant reconstruction of the academic role, and constitutive of role deviation, as opposed to a moderate elaboration which falls within the realm of normal variability (Turner 1990, Powell 1991, Jepperson 1991, Colomy 1998, Dunn and Jones 2010).

By exploring the manner in which locally embedded role frames shape personal attitudes towards the desirability of the entrepreneurial act we can gain significant insight into the cognitive underpinnings of both the entrepreneurial university and the triple-helix itself. Firstly, this may considerably expand current understanding of the re-conceptualisation of the academic role and the attendant reframing of entrepreneurial behaviour which is recognised within the literature as fundamental to the field as a whole (Jain et al. 2009, Lam 2010, Sanders and Miller 2010, Lam 2011). Secondly, exploring this issue will offer a new perspective on understanding of how the antecedents of entrepreneurial intent as they are conceptualised within Krueger’s (2000) intentions model are shaped by micro-level dynamics in the cultural-cognitive context of action (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012).
Thirdly, in examining the impact of frame alignment on the perceived desirability of entrepreneurial behaviour there is considerable opportunity to gain new insights into the manner in which the mobilising resonance and motivational force of entrepreneurship emerges at the micro level (Carsrud and Brannback 2011). This would have significant implications for current interpretations of the challenges of top-down entrepreneurial initiatives in particular (Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011), and for prevailing understanding of what motivates academics to act in an entrepreneurial way in general (Morales-Gualdron et al. 2009, Hayter 2011, Lam 2011).

Having outlined the manner in which an exploration of the impact of embedded role frames on entrepreneurial desirability will contribute to the extant literature in this section, the next section will focus on the social norms antecedent, presenting the rationale for an exploration of the nature of the local dynamics of legitimation in this context. A summary of this section is provided in table 3.6.

<table>
<thead>
<tr>
<th>Proposed Contribution</th>
<th>Related Studies</th>
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<tbody>
<tr>
<td>(1) Expand current understanding of the re-conceptualisation of the academic role and the attendant reframing of entrepreneurial behaviour</td>
<td>Jain et al. 2009, Lam 2010, Sanders and Miller 2010, Lam 2011</td>
</tr>
</tbody>
</table>
3.4.2 - Local Dynamics of Legitimation and Socialisation of Entrepreneurial Desirability

Krugman (2000) describes social norms as being of relevance to entrepreneurial behaviour due to the impact of the attitudinal orientation of salient others on the perceived desirability of a given behaviour. From a neo-institutional perspective, the relationship between the ‘salient others’ as they are labelled within entrepreneurial intentions frameworks (Krugman 2000) and entrepreneurial intent is manifested in the dynamics of legitimation in which they play a central role as a legitimacy awarding social audience (Ginzel et al. 1992, Suchman 1995, Deephouse and Suchman 2008). As a critical factor in shaping of entrepreneurial intent on the part of individual academics then, this situated social audience serves as a key mechanism through which the social embeddedness of an entrepreneurial orientation informs the desirability of associated behaviours (Suchman 1995, Di Maggio 1997).

Social norms are also recognised within the university based entrepreneurship literature as an important issue in their own right, shaping the local entrepreneurial culture through factors such as peer attitudes to entrepreneurial activity, the influence of role models, and formally endorsed approximations of appropriate academic activity (Clark 1998, Owen-Smith and Powell 2001, Kenney and Goe 2004, O’Shea et al. 2005, Stuart and Ding 2006, Braunerhjelm 2007, Azoulay et al. 2007, Mosey and Wright 2007, Bercovitz and Feldman 2008, Jain et al. 2009, Prodan and Drnovsek 2010, Goethner et
al. 2012, Obshonka et al. 2012). The legitimacy awarding social audience can therefore be understood as comprising of at least three distinct categories of salient others in this context, role models, peers, and formal authority figures. However, understanding of the micro-processes through which these groups influence the dynamics of legitimation as they in turn shape attitudes towards entrepreneurship is at best partially understood in the university based entrepreneurship literature (Bercovitz and Feldman 2008).

A key mechanism through which this effect may be manifested is offered by the institutional logics perspective. As outlined earlier in this chapter, means-ends assumptions are a fundamental component of the institutional logics framework (Friedland and Alford 1991, Thornton and Ocasio 2008). This principle is deeply rooted in neo-institutional mode of analysis, with institutions fundamentally understood as shaping social behaviour through their definition of both the appropriate ends that actors should pursue, and the legitimate means through which they may do so. This is a significant intersection between the neo-institutional and entrepreneurship literatures, as Shane and Venkatamaran (2000) similarly describe entrepreneurial opportunities as the identification of new means, ends, or means-ends relationships. Exploring the manner in which salient others at the micro-level in the university frame the perceived desirability of entrepreneurship, as either a means or an end, through the local dynamics of legitimation may greatly enhance understanding of the cognitive infrastructure which underpins the entrepreneurial university.

As such, the relationship between local legitimacy dynamics and the socialisation of normative attitudes towards entrepreneurial behaviour at the micro-level in the university has significant potential to contribute to the university based entrepreneurship literature as a whole, and understanding of the cognitive underpinnings of desirability perceptions in particular. Firstly, exploring this issue will provide insight into the manner in which salient others at the micro-level frame the perceived pragmatic, moral, and cognitive legitimacy of entrepreneurial behaviour in an academic context. Given the significance of these factors within individual orientation towards entrepreneurial behaviour, this would represent a significant advance in understanding of the micro-organisational processes through which entrepreneurial orientation is conditioned by social context (Bercovitz and Feldman 2008). This would
also go some distance towards addressing what Ankrah et al. (2013) refer to as the ‘black-box’ of micro-level mechanisms as they influence individual engagement in knowledge transfer.

A **second** significant contribution posed by this framework is deepening of understanding of the nature of role model influence on entrepreneurial orientation in the university environment. Bosma et al. (2011) highlight the lack of research on the relationship between role models and socialisation of entrepreneurial intent, and within the context of the university based entrepreneurship literature, such studies have focused primarily on perceptions of feasibility alone (Prodan and Drnovsek 2010). As recognised within the neo-institutional literature, the potential impact of role models is much more wide ranging, and much more significant to the micro-foundations of knowledge transfer. The presence or absence of high status individuals who engage in a given behaviour serves as a powerful cue for action as to the legitimacy and desirability of that behaviour (Scott 1995, Owen-Smith and Powell 2001, Stuart and Ding 2006). The accumulated field capital of such figures may also be an important factor in the intersection and integration of academic and entrepreneurial logic (Bjerregaard 2010).

A **third** key contribution a micro-level analysis of the legitimacy dynamics could make to the literature is a further extension of current perspectives on the underlying factors which motivate academic engagement in entrepreneurial behaviour. Previous studies such as those by Morales-Gualdron et al. (2009), D’Este & Perkmann (2011), Lam (2011), Hayter (2011), and Abreu & Grinevich (2013) illustrate the range of factors which serve as motivational triggers in the pursuit of entrepreneurial activities in the academy. In particular, Hayter (2011) and Lam (2011) illustrate that egotistic motives may be especially significant in this context. Similarly, a key element of the cognitive and behavioural micro-foundations of institutional entrepreneurship is the esteem driven creation of new meaning, a process within which novel and advantageous role identities are constructed (Fligstein 2001). Shared perceptions of what is valuable are fundamental to this process, and therefore the mechanisms through which the influence of the legitimacy awarding local audience is manifested are central to our understanding of the dynamics of motivation in this context.
Finally, a **fourth** contribution offered by this analysis is a deepening of understanding within the literature of the manner in which formal authority figures shape the socialisation of entrepreneurial norms. As outlined in chapter two, a number of previous studies within the field have examined the importance of governance structure in the emergence of an entrepreneurial orientation in a university context (Clark 1998, Audretstch and Lehrmann 2005, Debackare and Veugelers 2005, O’Shea et al. 2007) few studies have complemented this analysis by exploring the influence of figures in positions of formal authority on the proliferation of entrepreneurial intent (Bercovitz and Feldman 2008). As Battilana (2006) suggests, such individuals are by virtue of their hierarchical position invested with relatively significant power in terms of their capacity for the cultivation of divergent institutional behaviours. Examining the manner in which this power is manifested will greatly enhance prevailing theoretical perspectives on the micro-organisational processes through which entrepreneurial orientation is either impeded or advanced.

Having outlined the proposed contribution of an exploration of the impact of local dynamics of legitimation on the socialisation of entrepreneurial attitudes in this section, the next section will address the significance of micro-institutional factors in the formation of the first of the feasibility based antecedents, self-efficacy. A summary of this section is provided in table 3.7.

<table>
<thead>
<tr>
<th>Proposed Contribution</th>
<th>Related Studies</th>
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<tr>
<td>(2) Deepen understanding of the nature of role model influence on entrepreneurial orientation in</td>
<td>Scott 1995, Owen-Smith and Powell 2001, Stuart and Ding 2006, Bjerregaard</td>
</tr>
</tbody>
</table>
3.4.3 Control Assessments and Perceptions of Self-Efficacy

As outlined in the intentions models of entrepreneurial behaviour, self-efficacy relates to the perceived competence of an individual in the performance of the entrepreneurial behaviour in question (Krueger 2000). The impact of local context on feasibility perceptions is therefore fundamental to the emergence of entrepreneurial behaviour. In delineating the role played by the university in the proliferation of entrepreneurial behaviour then, it is necessary to explain how the individual academic’s perception of the feasibility of entrepreneurial action is shaped by the university context. From a neo-institutional standpoint, self-efficacy considerations can also be understood as being critical to engagement in entrepreneurial acts, and can therefore also be recognised as central to processes of institutional transformation. As discussed already within this chapter, George et al. (2006) conceptualise non-isomorphic actions on the behalf of institutionally embedded individuals as being a function of perceived mastery or control in a novel behavioural mode. Consequently, the control and self-efficacy constructs
present us with a useful means of understanding the relationship between context and entrepreneurial intent in the academic context.

This relationship is of much significance, as it may shape the perceptions of academics as they relate to knowledge transfer in a number of directions. Firstly, embedded institutional logic may shape self-efficacy as it relates to individual level perceptions of the barriers to entrepreneurship, which are a significant deterrent to entrepreneurial engagement (Cunningham and Harney 2006). Additionally, it may be a key element of the process through which cultural-cognitive structures condition the experiences of individual actors. These experiential underpinnings are highlighted by Tolbert et al. (2011) and Clarysse et al. (2011) as significant in the emergence of entrepreneurial intent, and the manner in which localised socio-cultural context facilitates the internalisation of assumptions about entrepreneurial competence is of much significance to understanding of how entrepreneurial behaviour is socially reinforced (Louis et al. 1989, Colyvas 2007, Krueger 2007, Bercovitz and Feldman 2008, Bourelos et al. 2012).

As such, exploring the mechanisms through which micro-institutional dynamics shape self-efficacy perceptions with respect to entrepreneurial behaviour would significantly enhance understanding of the micro-foundations of knowledge transfer in a number of respects. First and foremost, this line of investigation will illuminate the socio-cognitive micro-processes which underpin the institutional transformation envisioned within triple-helix perspectives of the entrepreneurial university. As outlined in chapter two, the significance of feasibility perceptions lies in their impact on the propensity of individuals to identify and pursue entrepreneurial opportunities (Krueger 2000). Consequently, exploring the mechanisms through which they are shaped in the university context will provide a much more robust understanding of the most fundamental elements of the institutional change processes though which entrepreneurial universities emerge (Etzkowitz 1998, George et al. 2006, Bercovitz and Feldman 2008).

Thirdly, an analysis of the impact of the micro-institutional context on self-efficacy perceptions would provide further insight into relationship between the behavioural context of action and the motivation of individual academics to engage in entrepreneurial acts. As Chell and Allman (2003) argue, individuals consider engagement in entrepreneurial activity in the context of environments which place limits on their sense of possibility and perceived range of choices. If we are to understand how entrepreneurship emerges in the university it is important to understand how these constraints are made manifest. This will provide the university based entrepreneurship literature with a much more complete understanding of the motivations which drive entrepreneurial engagement on the part of academics (Morales-Gualdron et al. 2009, D’Este and Perkmann 2011, Hayter 2011, Abreu and Grinevich 2013). Whereas desirability based analyses of the manner which locally embedded institutional logic shapes motivation is concerned with how the individual academic comes to recognise entrepreneurial ends as desirable and legitimate, analysis of self-efficacy perceptions in context facilitates a greater understanding of how academics come to identify entrepreneurship as a plausible means of satisfying a particular end.
Having described the proposed contribution of this study to the literature as it is concerned with the formation and significance of self-efficacy perceptions in this section, the next section will address the second feasibility based antecedent, collective-efficacy perceptions. A summary of this section is provided in table 3.8.

<table>
<thead>
<tr>
<th>Proposed Contribution</th>
<th>Related Studies</th>
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<tbody>
<tr>
<td>(1) Explore and identify the mechanisms through which self-efficacy perceptions with respect to entrepreneurial behaviour are shaped by the micro-institutional context</td>
<td>Etzkowitz 1998, George et al. 2006, Bercovitz and Feldman 2008</td>
</tr>
</tbody>
</table>
3.4.4 Institutional Trust and Collective-Efficacy Perceptions

The fourth challenge posed by micro-institutional dynamics for the emergence of entrepreneurial behaviour in the context of the academy is the manner in which institutional trust dynamics may shape the collective-efficacy antecedent presented in Krueger’s (2000) intentions model. As Olssen (2002) acknowledges in his ideal type conception of the traditional public university model (Table 2.1, Chapter two), work relations in this traditional institutional order are heavily trust based. The difficulty posed by this institutional characteristic is that trust-based institutions tend towards exclusivity, making processes such as the flow of knowledge to novel actors more challenging (Adler 2001).

The trust literature strongly emphasises the critical role played by perceived trustworthiness in facilitating knowledge exchange (Levin and Cross 2004), and similarly the university based entrepreneurship literature draws attention to the significance of trust in diminishing barriers to knowledge transfer in that context (Santoro and Gopalakrishnan 2000, Mora-Valentin et al. 2004, Bruneel et al. 2010, Garret-Jones et al. 2010, Plewa et al. 2013). From a neo-institutional standpoint, these perspectives are underlined by the assertion that in the emergence of new modes of behaviour, trust as an organising principle entailed within the logics of action “tempers the smoothness or success of implementation of such change.” (Sonpar et al. 2009, p.347), and as such greatly impacts the proliferation of an entrepreneurial orientation.

The impact of trust on collective-efficacy perceptions may be manifested in a number of different ways. For example Mayer et al. (1995) describe perceived trustworthiness as spanning from an actor’s perceived capacity perform well in a given domain. In the context of institutional change, the extent to which a change agent demonstrates competence influences the extent to which trust will ensue and resources will be mobilised in support of that change (Sonpar et al. 2009). With respect to entrepreneurial behaviour in the academy, such mobilisation is understood as the commitment of effort
at the level of the individual academic to behaviours which align the aims of the third mission, to the extent that propensity to engage in such behaviour is impacted by the enhanced sense of control experienced by academics when they trusted the ability of university based entrepreneurial support agent.

Braithwaite (1998) suggests that that trust may also be rooted in social bonds. This social bond is integral our understanding of the role of institutional trust in this context. As shared institutional logics provide social actors with similarly shared norms, values, and beliefs about social purpose and processes in a given environment, the emergence of new institutional logics creates new social roles or amends existing ones, challenging the prevailing norms, values, and beliefs which underpin the social bond of institutional actors. This is an especially important consideration for the occupants of specialised roles concerned with the commercialisation of university based research, given their boundary spanning activities which serve as a bridge between otherwise disconnected organisations and individuals (McEvily 2003). The role of the university’s TTO, for example, can be understood as being in part a matter of representing individual academic’s interests in interactions with other parties. Consequently, the extent to which academics are willing to engage in trust dependent activities such as disclosing of information, committing to partnerships, and suspending judgement may be shaped in part by their identification of the TTO professionals, both collectively and individually, as sharing their preferences and priorities.

Therefore, an exploration of the manner in which micro-institutional dynamics shape the emergence of this trust, and subsequently influences collective-efficacy perceptions, would offer a range of new insights to the university based entrepreneurship literature. **Firstly**, it would extend a number of studies which analyse the role of trust in knowledge transfer by highlighting the micro-level dynamics through which the embeddedness of an entrepreneurial logic shapes the formation of this critical factor (Santoro and Gopalakrishnan 2000, Mora-Valentin et al. 2004, Bruneel et al. 2010, Garret-Jones et al. 2010, Plewa et al. 2013). Trust, in a micro-institutional context, is built upon shared norms, values, and beliefs about social purpose and processes which are embedded in the logic which underpins relationships between social actors. And as
Jain et al. (2009) and Lam (2010) suggest, evolution towards the entrepreneurial behavioural paradigm is itself underpinned by change in the relational patterns of academia as an institutionalised role. Exploring the manner in which the micro-institutional context shapes the emergence of trust in this process would significantly enhance understanding of the attendant proliferation of entrepreneurial intent in this context.

**Secondly,** by exploring the manner in which embedded assumptions in the embedded institutional logic shape the perceived trustworthiness of entrepreneurial support agents in particular, this study will enrich current understanding of the underlying factors which influence the willingness of academics to engage with TTOs (Siegel et al. 2003, Jensen et al. 2003, Levin and Cross 2004, O’Shea et al., 2005 Powers and McDougall 2005). As boundary spanning or ‘guarantor’ institutions, TTOs are expected to act in a fashion that secures against the risk of entrepreneurial action engaged in by academics (Giaretta 2013). As such, the factors which influence their perceived trustworthiness may shape not only the collective-efficacy perceptions of academics in the local context, but also their tendency to engage with formal TTO processes as opposed to the utilisation of personal networks. Exploring this issue will contribute to a stream of research within the university based entrepreneurship literature which examines the underlying causes of TTO redundancy and the commercialisation of knowledge through the ‘back door’ of the university (Mosey and Wright 2007, Siegel et al. 2007, Markman et al. 2009, Aldridge and Audretsch 2010).

**Thirdly,** an examination of the micro-institutional dynamics through which the locally embedded logic shapes collective-efficacy perceptions will provide a valuable analysis of the manner in which underlying tensions may frustrate top-down policy initiatives intended to promote engagement in entrepreneurial activities. As outlined previously in this literature review, the shortcomings of such interventionist policies is itself a topic which stimulates much scholarly attention in the literature (Jacob et al. 2003, Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011). As institutional trust provides embedded actors with some degree of shared purpose and values, uncertainty as to the motives of novel actors (such as TTO professionals) may constrain the
emergence of the mutual interdependence, or social bond, upon which cooperation is based in an institutional context. Exploring this issue would complement previous theorising of the challenges of top-down approaches to cultivating entrepreneurial behaviour, and pose significant implications for policy frameworks within the field.

Having described the proposed contribution to the literature of an exploration of the impact of micro-institutional dynamics on collective-efficacy perceptions in this section, the next section will present an overview of the proposed contribution of this study. A summary of this section is provided in table 3.9.

<table>
<thead>
<tr>
<th>Proposed Contribution</th>
<th>Related Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Highlight the micro-level dynamics through which the embeddedness of an entrepreneurial logic shapes the formation of institutional trust</td>
<td>Santoro and Gopalakrishnan 2000, Mora-Valentin et al. 2004, Bruneel et al. 2010, Garret-Jones et al. 2010, Plewa et al. 2013</td>
</tr>
<tr>
<td>(2) Extend current understanding of the underlying factors which influence the willingness of academics to engage with TTOs</td>
<td>Siegel et al. 2003, Jensen et al. 2003, Levin and Cross 2004, O’Shea et al., 2005 Powers and McDougall 2005</td>
</tr>
<tr>
<td>(3) Extend understanding of the manner in which underlying tensions may frustrate top-down policy initiatives intended to promote engagement in entrepreneurial activities.</td>
<td>Jacob et al. 2003, Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011</td>
</tr>
</tbody>
</table>
3.4.5 Summary of Proposed Contribution

The primary aim of this study is to explore how micro-institutional dynamics shape the entrepreneurial propensity of academics in the university context. In pursuing this research objective, the study seeks to address calls for exploration of the micro-foundations of the entrepreneurial university (Jain et al. 2009, Philpott et al. 2011, D’Este and Perkmann 2011, Guerrero and Urbano 2012). This will provide a theoretical framework which better explains how the proliferation of entrepreneurial behaviour is enabled and constrained by cultural-cognitive factors in the university context. This framework will address the limited understanding of how an entrepreneurial orientation is institutionalised in this context, and how entrepreneurial activity comes to be viewed as more legitimate and desirable for academic actors. As well as contributing to a number of key debates within the university based entrepreneurship literature, the study will also address calls within both the neo-institutional and entrepreneurship literatures for studies which synthesise key issues from both fields (Battilana et al. 2009, Thornton et al. 2011, Zahra and Wright 2011, Shane 2012, Jennings et al. 2013). In particular, the study will provide answers to the key question of how institutional structures constrain or enable entrepreneurial cognition and action (Guerrero and Urbano 2012, Thornton et al. 2012, Greenman 2013).

In constructing the research framework through which these objectives could be achieved, four suitable avenues of exploration have been identified which address each of the four antecedents of Krueger’s (2000) entrepreneurial intentions model. The first of these is the manner in which locally embedded role frames shape personal attitudes towards the desirability of entrepreneurial behaviour. The second of these is how local legitimacy dynamics shape social norms. The third is how efficacy forming assumptions with respect to entrepreneurial behaviour are socialised and reinforced. And finally, the fourth is how micro-institutional trust dynamics shape collective-efficacy perceptions.

Exploring these four issues, the study seeks to address its overarching objective of explaining how micro-institutional dynamics shape the entrepreneurial propensity of
academics in the university context. In meeting this objective, the study also seeks to contribute to a number of key debates within the university based entrepreneurship literature. These include the manner in which the academic role is re-conceptualised in order to accommodate entrepreneurial activities (Jain et al. 2009, Lam 2010, Lam 2011), how the antecedents of entrepreneurial behaviour are shaped by the university context (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012), how entrepreneurial behaviour is reframed as serving academic ends (Mosey and Wright 2007, Jain et al. 2009, Lam 2010, Sanders and Miller 2010), what motivates academics to engage in these activities (Morales-Gualdron et al. 2009, D’Este and Perkmann 2011, Hayter 2011), how the identification and evaluation of entrepreneurial opportunities is shaped by contextual factors (Shane 2004), how these factors affect top-down approaches to cultivating entrepreneurial activity (Jacob et al. 2003, Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011) and how academic willingness to engage with TTOs is formed (Siegel et al. 2003, Jensen et al. 2003, Powers and McDougall 2005).

The conceptual framework which has been developed in the review of the literature provides a comprehensive platform for addressing these objectives, and the questions chosen to guide the research to this end are presented in the next chapter.

3.5 Conclusion

This chapter has presented a review of the neo-institutional theoretical perspective employed in this study. The emergence of institutional theory as a lens of analysis in the organisational theory literature was described, from its origins in late-nineteenth century sociology to the development of neo-institutionalism in the closing decades of the twentieth century. The chapter has additionally described Scott’s (1995) pillars of organisational institutionalism and pointed to the relevance of the cultural-cognitive tradition to the research topic pursed in this study. As such, this chapter has demonstrated the suitability of the institutional logics perspective in understanding the persistence, diffusion, and change of institutions, and the manner in which it provides
insight into the pluralistic social realities of organisations such as universities, and actors such as academics.

In addressing calls within the university entrepreneurship and institutional logics literature for micro-institutional analyses then, an integrated framework which will serve as the basis of the empirical study has been described in detail. This model conceptualises the antecedents of entrepreneurial behaviour in the university in a manner which reflects the institutional transformation entailed in the triple-helix model, and which in the process gives appropriate emphasis to both structure and agency as instruments of social construction. This integrated perspective presents four significant challenges for contemporary understanding of university based entrepreneurship which have been discussed in detail.

Finally, this chapter has presented the proposed contributions of the study to the literature. The study focuses on the cultural and cognitive underpinnings of both institutional transformation, and in particular, the socio-cultural underpinnings of entrepreneurial activity in the university. By integrating the entrepreneurial intentions model with a neo-institutional perspective, the relationship between the university as a context for action and the cognitive processes which shape entrepreneurial intent will be better understood. As such, the study aims to provide insight into the micro-foundations of knowledge transfer, and the triple-helix as a whole. Having presented the theoretical framework within which this study is conducted and to which this study will contribute, the next chapter will present the study’s methodological framework.
CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

Having presented the review of the literature in the previous two chapters, the following chapter will describe the research methodology chosen to address the study’s research questions. The primary research question and the four supporting sub-questions will first be presented and briefly discussed in section 4.2. The major philosophical perspectives which underpin the scientific process will then be examined in section 4.3, following which the arguments for the adoption of a critical realist perspective for the study at hand will be presented in section 4.4. After the presentation of this justification, the underlying rationale for the employment of comparative and qualitative case study methodological approach will then be provided in sections 4.5, 4.6, and 4.7. The selection and empirical background of the case studies will be outlined in section 4.8, along with the sampling strategy and an overview of the participating interviewees. The data collection and data analysis procedures will then described in sections 4.9 and 4.10, after which factors relating to the validity and reliability of the adopted methodological framework will be discussed in section 4.11. Finally, the limitations of the adopted framework will be acknowledged and considered in section 4.12.

4.2 Research Questions

This study is concerned with the manner in which micro-institutional dynamics in the university context influences both the perceived desirability and feasibility of entrepreneurial behaviour for academic actors. By exploring this issue, the study aims to shed light on the micro-foundations of university-industry interaction and add to current understanding of the institutional transformation entailed within triple-helix perspectives of the entrepreneurial university. From the review of the literature presented in chapters two and three, four research questions were selected as

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appropriate for the exploration of the knowledge gaps identified. These questions, and the overarching research objective to which they attend, are presented in table 4.1.

<table>
<thead>
<tr>
<th>Primary Research Objective</th>
<th>Research Question 1</th>
<th>Research Question 2</th>
<th>Research Question 3</th>
<th>Research Question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do micro-institutional dynamics influence the entrepreneurial intent of academics in the university context?</td>
<td>How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?</td>
<td>How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?</td>
<td>How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?</td>
<td>How are control and collective-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional trust dynamics at the micro-level in the university context?</td>
</tr>
</tbody>
</table>

Together, the research questions attend to the four antecedents of entrepreneurial intentionality recognised within Krueger’s (2000) intentions framework as underpinning desirability and feasibility perceptions. From a review of the literature, four avenues of exploration were identified which promise to shed light on how each of these antecedents are influenced by micro-institutional dynamics in the university context. These questions represent a comprehensive platform from which an empirical study of this relationship can be advanced.
4.3 Research Paradigms and Philosophical Perspectives

A primary set of issues which must be addressed in the conduct of social science research is that of the underlying epistemological, ontological, and methodological frameworks upon which the research study should be based. Ontology is concerned with the nature of existence, and in particular addresses the question of whether reality can be said to exist objectively and external to perception, or whether it is a subjectively generated phenomenon. Epistemology addresses the question of what it is that can be known, the manner in which the knowable may be obtained, and what the sufficient conditions of knowledge are. It is from one’s epistemological and ontological assumptions that methodology, or the means through which knowledge is pursued, emerges. The research design adopted in the pursuit of a research question is therefore underpinned by philosophical assumptions about both the nature of knowledge and reality itself (Saunders et al. 2000). How one perceives the development of knowledge is ultimately reflected in the research philosophy which guides their investigation of the world around them.

Two major research paradigms dominate the social sciences and serve as the philosophical justification for the methods employed in scientific investigations. These are positivism and phenomenology, the primary features of which are outlined in table 4.2.

<table>
<thead>
<tr>
<th>Basic Beliefs:</th>
<th>Positivism</th>
<th>Phenomenology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The world is external and objective</td>
<td>The world is socially constructed and subjective</td>
</tr>
<tr>
<td></td>
<td>Observer is independent</td>
<td>Observer is part of what is being observed</td>
</tr>
<tr>
<td></td>
<td>Science is value-free</td>
<td>Science is driven by human interest</td>
</tr>
</tbody>
</table>
The positivist paradigm is concerned with an objective reality which is measurable and one which exists external to human interpretation. Positivist research therefore engages quantitative methodology which detaches the researcher from the subject of inquiry and is guided by deductive testing of hypotheses. Through the objective and value free testing of these hypotheses through quantitatively driven methods this research paradigm seeks to discover the natural laws and mechanisms which underpin the causal effects of the empirical world.

The phenomenological tradition challenges this perspective by alleging the impossibility of true separation from the social world the researcher wishes to explore. Phenomenology embraces, rather than rejects, the inherent subjectivity of human perception. It seeks to describe and decode the meaning that is attached to the phenomena of interest in terms that reflect the perspectives of those who are involved in them (Burrell and Morgan 1979). Phenomenological approaches are consequently

<table>
<thead>
<tr>
<th><strong>Researcher Should:</strong></th>
<th><strong>Preferred Methods Include:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on facts</td>
<td>Operationalising concepts so that they can be measured</td>
</tr>
<tr>
<td>Look for causality and fundamental laws</td>
<td>Taking large samples</td>
</tr>
<tr>
<td>Reduce phenomena to the simplest elements</td>
<td>Using multiple methods to establish different views of the phenomena</td>
</tr>
<tr>
<td>Formulate hypothesis and then test them</td>
<td>Small samples investigated in depth over time</td>
</tr>
<tr>
<td>Focus on meanings</td>
<td>Try to understand what is happening</td>
</tr>
<tr>
<td></td>
<td>Look at the totality of each situation</td>
</tr>
<tr>
<td></td>
<td>Develop ideas through induction</td>
</tr>
</tbody>
</table>

(Easterby-Smith et al. 1991)
more likely to be inductive in nature, with theory building a primary objective. Therefore, qualitative research methodologies which involve the collection, analysis, and interpretation of complex data are most often employed. Such methodology permits the analysis of themes which delve deeper into the nuances of human opinions, values, and behaviours in social context and which are therefore not readily reducible to numerical form.

4.4 Choosing an Appropriate Research Framework

In addition to their own epistemological and ontological beliefs, researchers are also required to consider the degree of ‘fit’ between the research framework adopted and the questions they intend to answer. In the previous section we have seen an outline of approaches to research which represent philosophical opposites, and as such are themselves subject to intense and often heated debate given the magnitude of the epistemological implications. Positivist or objectivist perspectives are frequently criticised for their failure to afford sufficient consideration to the complexity of context and the subjectivity of interpretation, and are therefore often regarded as an inappropriate application of natural science objectivism to the social world (Bryman and Bell 2003). Subjectivist and phenomenological approaches on the other hand are depicted by their detractors as generative of less credible and less generalisable theory. Subjectivist methodological frameworks are therefore often described by such critics as being inherently undermined by relativism and incommensurability (Hughes and Sharrock 1997).

In practical terms, these arguments tend to pass by each other in the social sciences (Diesing 1966), with ultimate and satisfactory resolution of the impasse perhaps impossible. Hughes and Sharrock (1997, p.13) support this conclusion in arguing that there is no real basis to advocate any one view on these matters as the “unequivocally correct conception of the relationship between philosophy and social research.” In practice, this leaves the researcher in a position where “vows of allegiance” to any one epistemological perspective are unnecessary and perhaps unwise (Patton 1990, p.89).
To an extent, suitability for the task at hand becomes the critical issue, with sensible selection of techniques given the purpose of the research determining the appropriate methodology. Therefore, it is necessary for the researcher to consider a number of key issues, what epistemological assumptions inform the theoretical fields to which this study intends to contribute, what assumptions and methodologies underpin previous empirical research on the phenomenon at hand, and finally what are the most effective means of answering the specific questions posed. The consideration of such issues will in all likelihood lend itself not to dogmatic adherence to the principles of positivism or phenomenology, but rather to hybrid frameworks, unbound by “stipulations about a unified method or a unified ontology for science, for on these arguments no such creature exists” (Hughes and Sharrock 1997, p.94).

One such framework is critical realism, which reflects the underlying assumptions of positivism but in epistemological terms is grounded in phenomenological or interpretivist perspectives (Bhaskar 1978, Sayer 2000). Critical realism asserts that reality (including socio-structural reality) exists independently of its identification, but nevertheless that “socio-structural arrangements constitute the objective reality within which action occurs and is reflected in motives and meaning” (Godard 1993, p.290). Knowledge of social phenomena is to be found between the observable elements of social action, as represented in the perceptions and impressions of human actors, and the unobservable structures that shape events (Delbridge and Edwards 2013). Critical realism therefore proposes a stratified ontology, distinguishing between the real (what exists), the actual (generated by the real), and the empirical (that which researchers may observe).

The ‘real’ consists of the underlying structures and causal mechanisms which generate both events and behaviour in the social world. These events and this behaviour constitutes the actual, with the empirical being the domain of experience and observation (Easton 2010). Consequently, critical realists focus on discovering the causal capabilities of structures in the domain of the real (Leca and Naccache 2006). The intent of critical realism is therefore to record and analyse the perceptions of human actors so that it may penetrate “behind the surface of reality to access the
domain of the real, identify those structures and causal powers, and the way that they act” (Leca and Naccache 2006, p.630). Empirical observations and descriptions of complex systems of human interaction and meaning must be explained in terms of the mechanisms which could have generated them. In other words, the task of the researcher is to reveal the deeper processes, structures, and generative mechanisms which condition the action that is empirically observed (Easton 2010).

Given that this study seeks to reveal the mechanisms through which the micro-institutional context shapes the entrepreneurial intent of academic actors, critical realism appears a suitable framework upon which the empirical study can be based. **Firstly**, critical realism emphasises the interrelation between the three core elements of institutional theory, namely the actions of individuals, institutions themselves, and institutional logics (Leca and Naccache 2006). The engagement of individual actors at the micro-level with various logics of action can therefore be conceptualised in a manner which focuses on the precise causal mechanisms that underpin institutional transformation. **Secondly**, by providing a basis for the analysis of causal effects between the different ontological strata (e.g. the actual and the empirical), critical realism provides scope for greater integration of the cognitive micro-processes of institutional persistence and change with higher order macro-institutional trends without disembedding actors from their social context (Greenwood et al. 2011, Delbridge and Edwards 2013).

**Thirdly**, critical realism is especially suited to the study of institutional entrepreneurship and the legitimisation of alternative institutional logics. Critical realism explicitly acknowledges the significance of context in this process (Sayer 2000), suggesting that entrepreneurs are required to frame elements of a novel institutional logic in a manner which aligns with micro-contextual factors (Leca and Naccache 2006). As such, critical realism rejects the casual determinacy of macro-institutional pressures, instead emphasising the importance of local context in the manifestation of institutional effects. It is therefore particularly appropriate in the context of the research questions this study seeks to address. Finally, and **fourthly**, critical realism is highly appropriate for the identification and the examination of causal
mechanisms which are value sensitive and relevant to subjectivist processes of interpretation (Easton 2010). In accommodating subjectivist methodological approaches, critical realism facilitates the conduct of theory building research in immature fields such as university based entrepreneurship (Markman et al. 2008), and as such is a highly suitable framework within which to pursue the objectives of this study.

4.5 Choosing an Appropriate Research Methodology

The previous section outlined the rationale for the adoption of a critical realist foundation for the conduct of this research study. Critical realism assumes an underlying positivist ontological stance but adopts subjectivist epistemological postures (Bhaskar 1978, Sayer 2000). It is therefore tolerant of a relatively wide range of research methodologies (Sayer 2000), with the nature of the topic at hand and what it is that the researcher wishes to learn about it being the primary determinant of the specific methodology employed.

In light of the issues discussed in the previous section, and the research questions and objectives described in section 4.2, a qualitative approach was identified as best suited to the aims of this study. Understanding of the cognitive underpinnings of entrepreneurial intent in the university is at best incomplete. As such, theory-building investigations to that end are consistent with Eisenhardt’s (1989) criteria for the utilisation of qualitative methodological approaches in the development of the theoretical basis of a field. Markman et al. (2008) suggest that such theory-building approaches are much needed in the relatively embryonic and consequently under-theorised field of university based entrepreneurship.

This position is supported by recognition in the broader field of entrepreneurial cognition that “unless entrepreneurship generally and entrepreneurial cognition particularly begin to embrace higher volumes of higher calibre qualitative research, the
relevance and potency of the entrepreneurial canon will be severely compromised” (Hindle 2004, p.577). Similarly, Thornton et al. (2011) and Guererro and Urbano (2012) call for in-depth analysis of the manner in which entrepreneurial intention is shaped by the cultural dynamics of institutions in particular settings. Research questions focused on the ‘how’ of entrepreneurial proliferation at the micro-level addresses these calls, and as such, qualitative data seems most appropriate for generating insights into the complex dynamics of behavioural intent at this level (Miles and Huberman 1994, Yin 2009). Relational analysis of contextually embedded causal mechanisms and of the structural conditioning of action is similarly recognised within critical realist perspectives as consistent with qualitative methodologies (Easton 2010).

Indeed as Delbridge and Edwards (2013, p.944) suggest, qualitative approaches such as in-depth case studies are essential in uncovering the “deeply embedded and conditioning effects of logics”, with such inhabited approaches to social interaction highlighting the manner in which “local contexts condition the space for alternative meanings and practices to emerge.” In conclusion, this attentiveness to the lived experiences of individuals is best served by strategies of qualitative investigation which enable the researcher to capture the contextual richness of participant experience (Kaplan and Maxwell 1994). The available strategies for such a methodological approach are presented in table 4.3.

| Table 4.3: Qualitative Research Genres and Strategies |
|---|---|---|
| Genre                  | Strategy        | Focus of Inquiry          |
| Individual Lived-In Experience | In-depth Interviews | Individuals              |
| Society and Culture    | Case Study      | Groups or Organisations   |
| Language and Communication | Micro-Analysis    | Speech Events and Interactions |

(Marshall and Rossman, 1999 p.61)
4.6 Case Study Methodology

Having identified the suitability of a qualitative methodology to the research objectives in the previous section, this section will outline the rationale for the employment of a case study methodology. In accordance with Yin’s (1994) requirements for the implementation of a case study approach, the appropriateness of this method in the context of this study is outlined in table 4.4. Furthermore, a case study design was deemed especially appropriate for this research for a number of key reasons.

Firstly, the case study methodology enables the investigation and analysis of the dynamics present in specific settings (Eisenhardt 1989). This appeared critical to addressing the research aims of uncovering the mechanisms through which the antecedents of entrepreneurial intent were conditioned by institutional factors at the micro-level. Secondly, a major strength of case studies is their suitability to fine-grained contextual analysis such as is required by the research questions of this study. A more quantitative approach is incapable of capturing the richness of the social and cultural context to the same degree (Maxwell and Kaplan 1994).

Thirdly, many of the central issues of debate within the university based entrepreneurship field are ambiguous and very much contentious (Siegel et al. 2004), and as such a methodological approach that is particularly suited to a developing an under-theorised field is required. Additionally, and fourthly, case studies are especially appropriate when research addresses a social phenomenon within its real-life context, and the boundaries between the phenomenon and the context are not entirely clear (Yin 1994). Given the critical realist attention to causal relationships as they unfold in specific contexts then, the case study appear particularly suited to this study’s focus on the complex interplay between institutional logics, contexts, and individuals as they inform contemporary understanding of university based entrepreneurship (Delbridge and Edwards 2013).
Table 4.4: Requirements for the Case Study as a Preferred research Strategy

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Study Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Must be a ‘how’ or ‘why’ question</td>
<td>This study is focused on ‘how’ micro-institutional dynamics shape the antecedents of entrepreneurial intent in a university setting.</td>
</tr>
<tr>
<td>2. Investigators must have little control over events</td>
<td>There is no scope for control over events given the complexity and scale of the issues under investigation.</td>
</tr>
<tr>
<td>3. Must be a contemporary phenomenon</td>
<td>The entrepreneurial university, and the attendant phenomenon of entrepreneurial behaviour on the part of academics, is a topic of much contemporary interest from both a policy and scholarly perspective. The factors under investigation in this study are of contemporary, and not historical, relevance.</td>
</tr>
<tr>
<td>4. Must occur in a real-life context</td>
<td>The study is to be conducted in the context of the inhabited and lived-in experiences of the study’s participants, as opposed to an artificial and experimental setting.</td>
</tr>
</tbody>
</table>

(Yin 1994)

4.7 Comparative Case Study Approach

Having identified the case study as the most appropriate means of pursuing the research question in the previous section, this section will outline the rationale for employing a comparative case study approach.
4.7.1 Value of a Comparative Approach

Moving beyond the single case study enables the generation of more robust findings, with emergent theory being better grounded, more accurate, and possessing greater theoretical transferability (Yin 2009). From a critical realist perspective, the generalisability of theory developed using this approach comes from the identification of deep causal processes in operation under contingent conditions which are both of relevance and of interest to the wider study of the phenomenon at hand (Easton 2010). As Sayer (2000) suggests, critical realism supports the uncovering of causal mechanisms through the interviewing of individuals in context, and qualitatively analysing their perspectives for the purpose of identifying what it is that explains important relationships.

Employing a comparative case study approach maintains the possibility for fine-grained analysis of such perspectives in context. Additionally, it enables cross-case comparison and theoretical replication which both strengthens research findings and provides for the generation of further theoretical insight through the comparative dimension of analysis (Eisenhardt 1989, Yin 1994). This is particularly significant in the context of the research objectives of this study, as the institutional logics under investigation are uniquely appropriated in local contexts (Thornton and Ocasio 2008). As such, the logic of entrepreneurship may differ in its degrees of embeddedness in different environments. Investigation of multiple university contexts where superficial analysis indicates divergent embeddedness of an entrepreneurial orientation provides significantly more scope for the analysis and generalisation of institutional mechanisms in operation under differing circumstances.

4.7.2 Suitability of a Comparative Approach to the Research Objectives

By investigating the manner in which micro-institutional dynamics shape entrepreneurial intent in different ways, the study seeks to illustrate the micro-processes of institutional transformation as they both obstruct and enable the emergence of the
entrepreneurial university. As outlined in the literature review, while the state of the art offers a robust framework against which relative degrees of conformity to the ideal type entrepreneurial university can be assessed, it tells us comparatively little about how these critical factors are shaped by the prevailing institutional conditions in a given context (Krucken 2003, Colyvas and Powell 2006, Bercovitz and Feldman 2008, Wright et al. 2009). As Bercovitz and Feldman (2008) argue, the micro-organisational social processes through which academics acquire cues as to the costs and benefits of entrepreneurial behaviour are perhaps fundamental to the field of university based entrepreneurship as a whole. Comparative case research is a valuable means of exploring the nature of these processes in action and identifying key mechanisms which may be of much significance to wider understanding of entrepreneurial intent within the field.

This perspective is reflected in calls within the university based entrepreneurship literature for greater numbers of comparative studies. Kenney and Goe (2004) argue that despite the significant potential for local factors to shape the entrepreneurial orientation of academics, the field suffers from a paucity of comparative research which could deepen understanding of the relevant mechanisms. Similarly, Jain et al. (2009) call for comparative research across differing contextual conditions and university settings which addresses the underlying factors in the process of role modification engaged in by academics as they undertake entrepreneurial initiatives. Such research, they suggest, has the potential to significantly enrich understanding of the micro-foundations of the entrepreneurial university as a whole. This study addresses these calls by undertaking a comparative case study approach between two universities which serve as contrasting environments for entrepreneurial action. In so doing, this study employs the comparative methodology in a theoretical and empirical context where it has significant potential to add insight to contemporary literature, policy, and practice as it relates to this field.
4.8 Selection and Background of the Case-Studies

Having outlined the rationale for choosing a comparative case study approach in the previous section, this section will present the rationale which underpinned the selection of cases that served as the empirical context of the study. The background to the two cases will be outlined, before the sampling strategy is discussed and an overview of the study’s interviewees is provided.

4.8.1 Case Selection

In keeping with a multiple case study approach, this study sought to identify cases on the basis of their analytic, rather than empirical, generalisability (Yin 1994). By analysing the underlying causes of both similarity and difference, comparative case studies offer a valuable source of insight for both theory building research and the identification of promising avenues for future work in the field (Eisenhardt 1989). Selection of cases, therefore, must give due consideration to both the representativeness of the sample chosen and the probability of underlying variation along the dimensions of theoretical interest (Seawright and Gerring 2008).

The research objectives of this study reflect recognition within the literature of the likely significance of underlying heterogeneity within the university population with respect to the embeddedness of an entrepreneurial orientation in the local context. As acknowledged by several studies in the university based entrepreneurship literature, much focus within the field has been directed to exceptional cases which have come to define the characteristics of the archetypal entrepreneurial university (Philpott et al. 2011). These universities, as outliers, are in many respects unrepresentative of the experiences and characteristics of the population as a whole, due to both the maturity of their processes and the broadly emergent (as opposed to planned) character of their entrepreneurial orientation (Berman 2008, Philpott et al. 2011).
As both Goldfarb and Henrekson (2003) and Philpott et al. (2011) highlight in the Swedish and Irish contexts respectively, a broader class of universities (in the European context in particular) have adapted to the entrepreneurial paradigm in a manner which is much more policy driven, interventionist, and top-down in the nature of its implementation. In this regard, they stand in stark contrast to the aforementioned archetypal organisations (Goldfarb and Henrekson 2003). From the analytical perspective of neo-institutionalism, this diversity is of much importance, reflecting as it does the differential embeddedness of organisations within certain fields (Greenwood and Hinings 2006), and consequently the differential embeddedness of entrepreneurial logic. And while the aforementioned archetypal status of those outlier organisations distinguishes them from the field as a whole, it also renders them an important focal point for neo-institutional analysis. Given their influence on the definition of the archetypal parameters of the entrepreneurial university as an institutional form, they represent a point of institutional convergence for the field as a whole (Greenwood and Hinings 1996). They therefore shape the institutional transformation envisioned within triple-helix perspectives in a number of important ways (Philpott et al 2011).

As such, this broad distinction is of great significance within the framework for investigation set out earlier in this chapter by the research questions. The cases selected for this study were subsequently chosen on the basis of both their typicality within these two distinct experiences of evolution towards the entrepreneurial paradigm, and their divergent representativeness of experiences within the university population as a whole. This diversity and variation along dimensions of significant theoretical interest offered considerable scope for theoretical replication (Yin 1994, Seawright and Gerring 2008), and as such provided satisfactory opportunity for the generation of theoretical insight through the application of a comparative case study approach.

In addition to the characteristics of the universities themselves, the broader national contexts of Ireland and Belgium provide an interesting backdrop for the study at hand. Hofstede (1980) posits individualism, masculinity, power distance, and uncertainty avoidance as key dimensions of national culture, and these dimensions have in turn proved valuable in analysing the cultural underpinnings of national differences in
entrepreneurial attitudes (Hayton et al. 2002). In particular, high individualism and low uncertainty avoidance have been found to be associated with higher national levels of innovation, although these relationships have also been shown to be somewhat inconsistent over time (Davidson and Wiklund 1997, Hayton et al. 2002). While this study focuses on the contextual dynamics of the local university environment and their role in shaping entrepreneurial intentionality, the variation across these cultural dimensions is nevertheless noteworthy in framing the empirical context of the study. While Ireland and Belgium display a broadly similar orientation towards individualism, significant variation is in evidence with respect to uncertainty avoidance, with a much stronger cultural tendency towards uncertainty avoidance repeatedly demonstrated in the Belgian context (Hofstede 2001). Given the extent to which the Beta case as a highly entrepreneurial organisation therefore represents a notable anomaly not just within the broader population of European universities, but also within Belgian culture itself, it provides a particularly interesting context for studying the impact of micro-contextual dynamics on entrepreneurial intentionality. By investigating a highly entrepreneurial university embedded in a relatively less entrepreneurial national culture, and a relatively less entrepreneurial university embedded in a more entrepreneurial culture, the study offers much potential for both uncovering and demonstrating the significance of micro-institutional dynamics in shaping entrepreneurial intentionality at the local level.

Having outlined the rationale which underpinned the selection of appropriate cases for the empirical study, and the considerations which influenced the appropriateness of the national contexts chosen, the next section of the chapter will present the contextual background to the selected cases in depth.

4.8.2 The Alpha Case

In this section the background to the Alpha case will be described, including the national knowledge transfer policy framework, the university’s own entrepreneurial experience and policy, and the university’s spin-out and patenting activity. As well as
outlining the empirical context of the study, this section will demonstrate the suitability of the Alpha case as a context for pursuing the research objectives.

4.8.2.1 Overview of University Background and Regional Focus

The Alpha case is geographically located in the West of Ireland, and was founded in the mid-nineteenth century. It is a medium sized, multidisciplinary, strongly research oriented institution, and during the period of data collection was placed in the top three hundred in the world by the QS university ranking system. Approximately 17,000 students attend the Alpha case university, and the organisation employs in the region of 1500 academic and research staff, as well as a further 1000 administrative and technical staff. The university has a college and school based structure, with five major colleges. These are the College of Arts, Social Sciences, and Celtic Studies, the College of Business, Public Policy, and Law, the College of Medicine, Nursing, and Health Sciences, the College of Science, and the College of Engineering and Infomatics. The university also has close links with the university regional hospital.

In the broader metropolitan and regional context of the Alpha case, major industrial centres fall within the ICT and biomedical sectors, with multinational firms such as Medtronic, Boston Scientific, Hewlett Packard, Cisco, Allergan Pharmaceuticals, and EA having a significant presence in the region. This industrial mix is reflected in the university’s own strategic research focus, which prioritises the development of the following thematic areas:

- Biomedical science and engineering
- Infomatics, physical, and computational sciences
- Environment, marine, and energy
- Applied social sciences and public policy
- Humanities in context

University policy also places much emphasis on its contribution to regional development, with the 2012 strategic review stating that the Alpha case “is committed
to supporting the economic, social, and cultural development of its region with innovative programmes designed to respond to identified regional needs.” Central to policy on this front is the university’s intent to “play a key role in developing (the region) as an innovative, knowledge driven, and competitive hub.” This policy also acknowledges the major cultural significance of the university in the region, and its own role as focal point for both cultural studies and the cultivation of cultural expression.

4.8.2.1 National Knowledge Transfer Policy Framework - Ireland

This section will present an outline of the Irish national knowledge transfer policy framework within which the Alpha case is embedded. At the time of data collection, the EU Innovation Scorecard (2011) categorised Ireland as an ‘Innovation Follower’, with countries in this group displaying an innovation performance which was close to the EU27 average. Human resources and excellent research systems were identified as key strengths in Irish innovation performance. However, inter-institutional linkages, entrepreneurship, and innovation were highlighted as relative weaknesses. The OECD Science, Technology, and Industry Scoreboard (STIS) for 2011 placed gross expenditure on research and development (GERD) at 1.77%, which was below the OECD average, but nevertheless represented a significant increase from 2001 where GERD stood at 1.09%. Higher education sector performed research and development (HERD) as of 2010 stood at approximately €700 million, with HERD intensity ratio (HERD as a percentage of GDP) increasing from just 0.24% in 2001 to 0.44%, by the year 2011 (OECD 2013). This increase reflects significant changes in the Irish research infrastructure in the intervening period. Business expenditure on research and development (BERD) was calculated at 1.18%, with foreign affiliates accounting for a significant 70% of this figure.

Knowledge transfer policy in Ireland is itself embedded within the wider context of government innovation policy. Innovation has been a key strategic objective of successive Irish governments, reflecting a long standing focus on the attraction of foreign direct investment through the presence of leading multinational firms. The roots of this focus can be traced to the Programme for Economic Expansion (1958) which
first saw economic policy shift from a strong orientation towards protectionism to a more internationalist outlook, with exports and the attraction of foreign investment becoming central concerns. By 1973, this policy had resulted in over one-third of all Irish manufacturing employees being employed by international firms, and the tactic of incentivising export activity had become deeply embedded within national economic strategy (O’Gráda et al. 2008)

Nevertheless, this policy focus was primarily fixed on manufacturing as opposed to innovation, and prior to the year 2000 public investment in science, technology, and innovation (STI) was extremely limited, with the government spending just €500 million in this sector between 1994 and 1999. Government reports on Irish innovative capacity at this time increasingly asserted the need for greater spending in the sector. This was reflected in the national development plan (NDP) for 2000-2006 which committed €2.5 billion to STI spending. This commitment led to a number of notable developments in the Irish research infrastructure, such as the creation of Science Foundation Ireland (SFI), the Irish Research Council for Humanities and Social Sciences (IRCHSS), and the Irish Research Council for Science, Engineering, and Technology (IRCSET). While earlier reports had addressed the need for stronger linkages between institutes of higher education (HEIs) and industry, knowledge transfer only emerged as a major policy issue during this period. Three significant reports were key to this development. The first was the Enterprise Strategy Group’s (ESG) report ‘Ahead of the Curve’ (2004) which emphasised the “need to develop world-class technology transfer and commercialisation mechanisms” (ESG 2004, p.92) as well as cultivating an entrepreneurial culture through an enhanced “focus on commercialisation of academic innovations” (ESG 2004, p.104). This was closely aligned with the objectives of the ‘Building Ireland’s Knowledge Economy’ report to the Inter-Departmental Committee on Science, Technology, and Innovation in the same year, which placed much focus on the need for research funding to generate an economic return for taxpayers.

These reports culminated in the launch of the Strategy for Science, Technology and Innovation in 2006, which was backed by a commitment of €8.2 billion in public
expenditure on STI. Of this total, €3.42 billion was committed to the funding of world class research, €1.5 billion to spending in higher education, €1.29 billion to STI enterprise, and a further €1.35 billion was allotted for sector specific research programmes. Strengthening of university third mission activity was highlighted as a strategic priority within this framework, with the ultimate goal being that “Ireland by 2013 will be internationally renowned for the excellence of its research, and will be to the forefront in generating and using new knowledge for economic and social progress, within an innovation-driven culture.”

The SSTI firmly established the third mission as a politically important issue for Irish universities, and in 2007, the Technology Transfer Strengthening Initiative (TTSI) was launched by Enterprise Ireland for the express purpose of increasing the rate of commercialisation of IP in Irish universities. The TTSI focused on developing the capabilities of the TTOs, and operated with a budget of €30 million for this purpose in the four years preceding the commencement of data collection for this study. During this period Enterprise Ireland, as the key government actor in this domain, launched support funds for proof of concept, technology development, innovation partnerships, innovation vouchers, feasibility studies, and commercialisation support.

The TTSI’s initial funding period also coincided with a period of severe economic difficulty for the Irish state. Significant budgetary restrictions resulted which inevitably had an adverse impact on public STI investment. However, these difficulties appear to have enhanced rather than diminished the perceived salience of STI support in general, and knowledge transfer in particular, within Irish economic policy perspectives. This was reflected in the National Recovery Plan (2011-2014) which describes further R&D investment as a key national priority. Spending commitments to knowledge transfer seem to bear out this principle, with the OECD reporting that in 2012 significant funds continued to be available for knowledge transfer support schemes. With the Innovation Taskforce report in 2010 stating that “The entrepreneur and enterprise must be at the centre of our efforts…we must sharpen the focus of our national research system to target areas of potential strategic and economic advantage for Ireland”, in the process recommending that the government continues to invest in creating world class research
infrastructure, it appears that the policy attention to knowledge transfer in Irish context is likely to become ever more intense in the years to come.

4.8.2.2 The Alpha Case and the Entrepreneurial Mission

A technology transfer office was first established in the Alpha case in late 2005. This took place as a response to two significant events. The first was the launch of the TTSI by Enterprise Ireland as outlined above, which saw the creation of TTOs in ten Irish institutes. Secondly, a major internal review of intellectual property (IP) management in the university saw the development and management of an IP portfolio in collaboration with Alpha case researchers being formally established as a major new institutional aim. In addition to the identification, generation, and protection of IP, the university also created a mandate for the TTO to actively work with researchers in the commercialisation of research through both licensing and spin-outs. The TTO defines its mission as aiming “To be an international leader in the commercialisation of research and other knowledge intensive activity for the benefit of (the Alpha case university), the economy, and society.” Within the broader scope of the university’s strategic mission, the significance of the TTO is recognised in its status as “a structure capable of the commercial exploitation of research findings”, as such contributing to the university’s role as an instrument of social, economic, and cultural transformation. The importance of this role is further acknowledged within the university’s ‘Strategy for Research and Innovation’, which asserts “a commitment to knowledge transfer and innovation, which is underpinned by an intensification of knowledge dissemination and a particular focus on technology transfer and commercialisation to support the development of the knowledge and innovation economy.”

From the foundation of the Alpha case TTO to the beginning of data collection, a total of 237 invention disclosures had been made. In addition, a total of 86 patents had been filed, and 21 spin-outs had been created. In the year preceding the conduct of the semi-structured interviews (2010), 63 invention disclosures were made, 11 patents were filed, and 6 new spin-outs were founded. The address from the TTO director at the end of 2010 stated that the office had:
“continued to build upon the strong momentum that began in 2006 when the (TTO) was established. Our commitment to the university and the community then, as it is now, was to create and sustain a world class technology transfer function to move innovations created by (the Alpha case’s) world class researchers into the marketplace to benefit society. With strong support from faculty, administrators, and the leadership of the University, and with a dedicated team of professionals, we have built an organisation that is now recognized as a national leader...The past year has seen us reach new levels of performance in areas such as invention disclosures received and transactions completed. This is a powerful indication of our engagement with our researchers and with industry, and will translate into more technologies developed at (the Alpha case).”

Internal quality reviews, however, were less positive. A review of the TTO conducted in late 2009 identified a number of key shortcomings, including significant confusion with respect to the role of TTO staff. Considerable misalignment of formal job descriptions and actual activities was also reported as being in evidence, with TTO staff having to engage in a spectrum of activities far removed from their core purpose. In addition, the core metrics used in performance self-assessment were identified as being aligned not with the strategic objectives of the university, but rather with standards of performance defined by Enterprise Ireland. Perhaps most significantly, “wider communication to the entire academic research community” was reported as being ineffective, with a lack of systematic and routine communication being reflected in an absence of understanding as to the purpose and role of the TTO in that audience.

Nevertheless, official statements issued by the University Management Team with respect to both TTO performance and the university’s entrepreneurial focus in general remained strongly enthusiastic. Documents such as the annual president’s report framed the university as consistently delivering excellent results with respect to technology transfer, and an interim report on the university’s 2009-2014 strategic plan reasserted this perspective, stating that said results reflected “the applied nature of (the Alpha case’s) research and the willingness and ability of research personnel to engage with industry.” Despite an acknowledgement within this report of a 56% decline in patent
filing since 2008, a statistic which in turn was described as a reflection of funding conditions, the subsequent Strategy for Research and Innovation document put forward targets of a four-fold increase in patents filed, and a five-fold increase in license agreements by 2014. This target reasserted the university leadership’s strategic commitment to entrepreneurial knowledge transfer as part of its wider commitment to innovation and the knowledge economy.

4.8.2.3 Entrepreneurial Policy and Support Structure in the Alpha Case

This section will describe entrepreneurial policy and associated support structures in the Alpha case during the period of data collection. As outlined in the previous section, knowledge and transfer, innovation, and entrepreneurship have a significant presence in strategic documentation issued by university management, reflecting the intense political focus on the issue in the broader Irish context. In the Alpha case, the TTO is the primary policy instrument in the promotion of entrepreneurship, with its strategic objectives including both the technical support of entrepreneurship and commercialisation, and the cultivation of an entrepreneurial culture amongst the university’s academic community.

The Alpha case TTO aims to provide a broad spectrum of services to entrepreneurially oriented researchers. These include:

- IP Management
- Technology Licensing
- Outreach for Industrial Collaboration
- Spin-Out Support
- Sector Expertise
- Technology Roadmaps
- Business Mentoring
- Entrepreneurship Programmes
With respect to entrepreneurship programmes, two key courses are offered which aim to encourage entrepreneurship amongst researchers in the university. The first is the Campus Commercialisation Programme (CCP). The CCP aims to introduce and familiarise Alpha case academics with the commercial and business environment in a ‘safe’ internal forum. The second key programme is Start-Up Solutions (SUS). SUS aims to assist academics in the market testing of technologies, with a view to establishing an understanding of the commercial potential of specific ideas. The TTO itself is located on campus, and is adjoined to 25 unit business incubation centre. This complex also features six bio-incubator laboratories, as well as office and conference facilities. In addition, two Centres for Science Engineering and Technology (CSETs) are located on campus, one focused on the semantic web, and the other focused on stem cell research. These CSETs were both established in 2003 by SFI with the aim of building critical mass in ICT and bio-technology in collaboration with industrial partners.

The key funding supports available to researchers for the purpose of entrepreneurship are offered through the Alpha case TTO by Enterprise Ireland. The main features of this support at the time of data collection are outlined in table 4.5.

<table>
<thead>
<tr>
<th>Table 4.5: Alpha Case Financial Support for Entrepreneurship - Enterprise Ireland Schemes</th>
</tr>
</thead>
</table>
| **Proof of Concept** | • €50,000 to €100,000 per project  
                         • 12 month duration |
| **Technology Development** | • €100,000 to €400,000 per project  
                                • 18 to 36 month duration |
| **Innovation Partnerships** | • Supports collaborative research between HEIs and Industry  
                               • Administered by the University |
| **Innovation Vouchers** | • €5000 vouchers granted to SMEs which may be spent on collaborative projects with HEI researchers |
| **Feasibility Study** | • Up to €15,000 available for researchers in |
Support partnership with TTO to develop the commercial case for a technology in advance of application of Commercialisation Fund Support

**Commercialisation Fund Support**

- Fund supports projects which have demonstrated their capacity to address a ‘gap or need in the market’
- Available for technologies that will be viable for licensing or start-up in 2-5 years
- Supports costs in the range of €80,000 to €350,000

(Enterprise Ireland, 2011)

In addition to funding provided through Enterprise Ireland, the Alpha case TTO also aims to provide access to finance through a range of networks and linkages, including a business angels network, the county and city enterprise board, the regional development commission, as well as private and venture capitalists.

Finally, the university has established an explicit policy framework with respect to the administration of IP and associated revenues. This policy was created for the purpose of supporting the university’s mission of funding “further research and development, innovation, entrepreneurship, technology transfer, commercialisation, spin-out company formation, (and) related and other activities.” The features of this framework during the period of data collection as they relate to the distribution of IP revenue are outlined in table 4.6.

<table>
<thead>
<tr>
<th>Net Income (€)</th>
<th>Creators/Inventors</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to €125,000</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>€125,000 - €200,000</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>€200,001 - €500,000</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>€500,001 - €1,000,000</td>
<td>30%</td>
<td>70%</td>
</tr>
</tbody>
</table>
4.8.2.4 Alpha Case Summary

This section has described the empirical context of the Alpha case. An overview of the university background was presented, before the national knowledge transfer policy framework was illustrated. An outline of the university’s entrepreneurial history and activity was then provided, before the entrepreneurial supports for researchers in the Alpha case were described. This section has therefore illustrated a variety of significant factors which render the Alpha case a suitable empirical context within the research framework employed in this study.

Firstly, the Alpha case is located in the Irish context, which saw an ever intensified policy focus on STI policy and knowledge transfer emerge in the 10 years preceding the collection of data. As previously outlined this phenomenon reflected historical patterns in Irish economic policy, but nevertheless signalled dramatic changes for the national STI infrastructure, including Irish HEIs. The increased recognition of the role of HEIs within the broader innovation system in turn created significant pressure for greater alignment of research activity with STI policy in general, and greater pressure for the cultivation of an entrepreneurial culture in particular. As such, universities in the Irish context represent fertile territory for exploration of micro-institutional phenomena as they shape the emergence of entrepreneurial universities.

Secondly, the Alpha case is a university with a strong research orientation. Such universities are identified both with within the NIS and university based entrepreneurship literature as more closely aligned with the entrepreneurial paradigm (Clark 1998, Tijssen 2006). Strongly research oriented universities possess significant entrepreneurial potential in their human capital and their proximity to cutting edge research.
Thirdly, the relatively recent, and top-down, nature of knowledge transfer policy in the Alpha case renders it a highly appropriate example of a broader class of European HEIs which have experienced a similar shift in institutional focus over the past 10-15 years. More importantly, it represents a promising case for the exploration and analysis of the micro-institutional dynamics of entrepreneurial legitimation, given both the recent establishment of entrepreneurial support structures and the increasing significance of entrepreneurship within strategic documentation.

Finally, and fourthly, the Alpha context serves as interesting case in contrast to the archetypal entrepreneurial universities as recognised within both knowledge transfer literature and policy. Capturing the nature of this difference is of much importance, as it highlights the underlying characteristics of the differential embeddedness of universities within the entrepreneurial paradigm. The attendant variation along dimensions of theoretical interest additionally makes the Alpha case an appropriate empirical context for studies seeking theoretical replication, as the variation in question is of much interest to both scholars and policymakers within the field.

4.8.3 The Beta Case

In this section the background to the Beta case will be described, including the national knowledge transfer policy framework, the university’s own entrepreneurial experience and policy, and the university’s spin-out and patenting activity. As well as outlining the empirical context of the study, this section will demonstrate the suitability of the Beta case as a context for pursuing the research objectives.

4.8.3.1 Overview of University Background and Regional Focus

The Beta case is geographically located in the Flanders region of Belgium, and was founded in the early fifteenth century. It is a large, multidisciplinary, strongly research oriented institution, and during the period of data collection was placed in the top one hundred in the world by the QS university ranking system. Approximately 40,000 students attend the Beta case university, and the organisation employs in the region of
1000 senior, and 4700 junior and other academic staff, in addition to 3000 administrative and technical staff. The university is structured in terms of three major groups, the Humanities and Social Sciences Group, the Science, Engineering, and Technology Group, and the Biomedical Sciences group.

Major industrial hubs in metropolitan area and region can be found in the micro- and nanoelectronics, electrical and chemical engineering, life sciences, mechatronics, and bio-medical sectors, and this is reflected in the spin-off profile of the Beta case university. Consequently, industry in the Beta case metropolitan area in particular has an intensive R&D and high-tech manufacturing focus, centred in three science parks in the city. Contributing to, and interacting with, this locally based industry is a core element of the university’s articulation of its social mission in the context of the broader region. Nevertheless, the university also remains strongly committed to a broad-based and comprehensive research platform, with its cultural role with respect to Flemish community and identity being afforded as much significance as its role in economic development.

4.8.3.2 Beta Case Knowledge Transfer Policy Framework - Belgium (Flanders)

This section will outline the national and regional policy context within which the Beta case is embedded. Due to very high levels of regional autonomy, STI policy in Belgium has traditionally been highly decentralised. In political terms Belgium is governed as a federation with three regions, the Brussels-Capital Region (BCR), Flanders, and Wallonia. Respectively, these regions account for 8%, 67%, and 25% of total R&D activity (ERAC 2011). Federal responsibility for STI policy is largely limited to IPR governance, corporate taxation, and employment legislation. Regional governance in this domain pertains to applied and industrial research, knowledge transfer, and public research. In addition to these two levels, further autonomy is afforded at language community level in matters relating to education and science.
Primary federal level objectives as outlined in the 2008 Federal Government Agreement are to reduce costs related to the employment of researchers, to further support the creation and development of SMEs, and to increase the intensity of R&D activity. In addition, federal STI strategy incorporates the 3% of R&D per GDP spending target set out by the EU 2020 framework. As of 2010, GERD was 1.99%, with industry contributing 59% to government’s 25%. This represented a marginal increase on GERD in 2000 which stood at 1.97%. BERD was 1.32%, with the business sector funding 14% of public R&D. Belgium’s HERD intensity ratio as of 2011 stood at 0.47%, slightly increased from a figure of 0.41% in 2001 (OECD 2013). At the time of data collection, the EU Innovation Scorecard (2011) also categorised Belgium as an ‘Innovation Follower’. However, research systems, inter-institutional linkages, and entrepreneurship were highlighted as key strengths.

At the regional level, Flanders displays a very active policy stance with respect to both STI and knowledge transfer. The Flemish innovation policy framework itself emerged as a result of national political reform which saw significant political power transferred to regional institutions in the 1970s and 1980s. The foundations of the Flemish innovation system were in many respects first laid with the creation of the European Common Market in 1958, which had seen Flanders become an important hub for mid to high-tech multinational industry such as electronics and petrochemicals (IWT 2004). This represented a notable divergence from the steel, coal, and textile industrial focus of other parts of Belgium. The newly autonomous Flemish government acted in a manner which reflected this historical shift, when in the 1980s emphasis on science and technology became a major point of differentiation from federal policy, which at that time remained focused on the rejuvenation of heavier, ‘smokestack’ industries (Larosse 2005). One important form of organisation which emerged from this Flemish policy trajectory was the strategic research organisation, which was created for the purpose of capitalising on regional research capability so as to advance specialised and research intensive industry in the region. One such organisation is IMEC, formally known as the Interuniversity Microelectronics Centre, which has been a key driver of micro- and nanoelectronics industry in the region.
Universities and these new boundary organisations were central to the emergence of Flemish STI policy, with commonality of vision at this level being central to the emergent character and coherence of the autonomous institutions which developed in this period (IWT 2004). One such institutional actor was the Innovation Agency of the Flemish Government (IWT), established in 1991, which has subsequently played a major role in the evolution of STI policy. An important stage in this evolution was marked by the Flemish government’s enactment in 1999 of an ‘Innovation Law’, which assigned the IWT the formal role of stimulating innovation through the creation of bridging institutes between science and industry. At this point, the increased rate of creation of spin-offs from Flanders universities signalled the presence of considerable entrepreneurial capacity in the region. And in the years following the turn of the millennium, a shift towards a third generation of STI policy was marked by an increased commitment to greater ‘horizontal coherence’, with enhanced consistency and integration between goals in different policy domains becoming a major point of focus (Larosse 2005).

Between 2005 and 2008, three major policy initiatives which reflected this focus were launched by the Flemish government on the basis of strategic reviews conducted by a broad range of regional stakeholders. These were the Flemish Innovation Policy Plan (Vlaams Innovatiebeleidsplan) which aimed to further implement a horizontal regional approach to STI, the Flemish Reform Programmes which aimed to facilitate the reorientation of STI policy in accordance with the EU Lisbon strategy, and finally the ambitious Flanders in Action (Vlaanderen in Actie) plan (VIA). Through the VIA framework, the Flemish government aims to place Flanders in the top 5 EU regions by 2020, with knowledge transfer and commercialisation playing a central role. In conjunction with these strategic plans, STI policy in Flanders has eight major aims which underline the importance of knowledge transfer within broader economic and social objectives (ERAC 2011). These are:

- An increased focus on the commercialisation, market results, and societal impact of ideas
- More creative and innovative entrepreneurship
• More creation of economic clusters, thematic spearheads, and large scale projects
• A stronger presence for Flanders on the international stage with respect to research and innovation
• Strengthen the excellence of non-oriented research as a fundamental element of broader innovative capacity
• Increased opportunities for talented researchers
• More streamlined and output-driven research policy
• A world class research infrastructure

The economic downturn in the years preceding the period of data collection inevitably had a negative impact on the resources committed to these objectives, with 2010 seeing a notable decline in public R&D spending for the first time in many years. Nevertheless, as of 2011, the Flemish government’s commitment to their strategic STI aims was underpinned by a total budgetary R&D expenditure of €1.23 billion. And successive policy initiatives in 2010 and 2011 such as the Spin-Off Financing Instrument fund (SOFI), and the Transformation and Innovation Acceleration Fund (TINA) underlined the region’s political and economic commitment to STI, with knowledge transfer and intensified public-private interaction continuing to play a critical role.

4.8.3.3 The Beta Case and the Entrepreneurial Mission

The Beta case is widely acknowledged as a leading example of a successful entrepreneurial university, and is considered to be closely aligned to the Massachusetts Institute of Technology model in this respect. The university established a local technology transfer office in 1972, and this unit has been central to the emergence of entrepreneurial policies and activities in the organisation. The Beta case TTO defines itself as aiming to “operate at the frontier of the Triple-Helix, where knowledge centres, industry, and government mutually reinforce each other with regards to innovation and entrepreneurship.” The importance of the TTO is recognised within documentation expressing the university’s own acknowledgement of the strategically “important economic implications” of the research conducted by its “socially...
embedded” research community. The TTO is as such identified as having in its 40 year history played a crucial role in the cultivation of “a spirit of cooperation between the university and the business world.”

While initially constituting a relatively small percentage of the university’s research and development portfolio, over its 40 year history the office has become increasingly significant in this respect, with gradual yet steady and significant increases in key performance metrics over time. By 2001 the Beta case TTO was identified in an EU benchmarking report as representative of best practice in the European context, and in 2003 it accounted for 24% (€46 million) of the university’s total research budget (€190 million). During the period of data collection for this study, the TTO reported a turnover of €180 million per annum. In 2010, in excess of 3500 people were employed across 80 active spin-offs from the university. 180 new invention disclosures were made in the same year, with over 1200 new collaborative projects initiated involving Beta case researchers. In the preceding five years (2005-2010 inclusive), €475 million of external investment had been generated.

These outcomes have underlined the significance of the university’s role in the cultivation of high-tech industry and entrepreneurship in the Flanders region, a role which itself is of much importance in the broader context of innovation policy in the region. Integration of the entrepreneurial mission with the wider social mission of the university is made clear in documentation wherein the university presents itself to the wider public. As one such publication issued by the office of the university rector in 2011 stated: “Research is not only valued highly within the academic community, but also outside it. With the support of (the TTO), a largely independent operation within the university, (the Beta case) has achieved excellent results in the fields of research valorisation and in particular the transfer of research results to society and its economic sectors...(The TTO) has assumed responsibility for establishing...an excellent relationship between the university and the corporate world.” This activity is framed within the wider context of interaction between the academic community and wider society, a process which is described as contributing not only to “the diffusion of (the Beta case’s) scientific expertise, but also to awareness of our university’s values.”
4.8.3.4 Entrepreneurial Policy and Support Structure in the Beta Case

This section will describe entrepreneurial policy and associated support structures in the Beta case during the period of data collection. As in the Alpha case, the TTO is the focal point of entrepreneurial support in the Beta context. From the time of its foundation in 1972, it has operated with a large degree of autonomy, with significant control over both budgetary affairs and human resources. The primary objectives of the TTO in this case are as follows:

- Support research collaboration
- Protect and exploit IP
- Support spin-off creation and innovation
- Support regional development
- Stimulate entrepreneurship through network initiatives

In meeting these objectives, the Beta case TTO additionally seeks to create awareness both in the academic community and in the outside world of the possibilities of knowledge transfer. Much of this is done in collaboration with a locally centred network organisation which brings together individuals from academic research groups, entrepreneurial start-ups, key support agencies, venture capitalists, and local businesses. During the period of data collection, the unit had a staff of nearly 70 individuals, specialising in research collaboration, IPR, spin-off creation, as well as finance, human resources and logistics. The office is therefore intended to provide a comprehensive ‘one stop shop’ for Beta case researchers, offering informal advice on topics of interest, negotiating contracts, managing research finances, offering administrative support, and preparing legal documentation. The degree of specialisation in patenting in particular has seen the development of an internalised specialised office which is engaged in formal collaboration with patent attorney networks across Europe.
Access to seed capital is provided for Beta case researchers in a number of ways. Firstly, the 40 year history of the TTO has seen the development of an extensive network of national and international investors. Secondly, a patent fund is provided by the university itself which supports the application for patents in the event that the researcher has no alternative source of finance. Thirdly, a private equity fund has been established by the university to stimulate the creation and growth of spin-off organisations. Founded in 1997, this fund had invested €25 million in nearly 100 spin-off companies from that time to the beginning of data collection phase of this study. The TTO additionally assists researchers in their applications for national, regional, and EU structural funding. Important examples include the Industrial Research Fund which is financed by the Flemish Government, and the EU’s competitiveness and innovation programme (CIP). The Beta case TTO provides specialised EU advisors to facilitate researcher applications to such programmes.

The key activities of the TTO therefore range from the creation of awareness and interest in knowledge transfer on campus, to the conduct of feasibility, patentability, and market potential assessments, to the formulation of protection strategies and selection of appropriate commercialisation pathways. An additional and important feature of the Beta case in this respect is the research division structure. This structure allows for academics from different faculties and departments to advance the entrepreneurial and commercial dimension of their research through the creation of a new research division with the TTO, creating a de facto interdisciplinary structure. The research divisions are a key element of the incentive structure within the university, with the research divisions being permitted to accumulate and strategically deploy revenues from their own entrepreneurial activities, affording them a significant degree of autonomy. At the individual level, administration of IP revenues is managed through the distribution of salary supplements generated by contact research and consultancy activities, through the payment of up to 30% of revenues generated by licensing agreements, and through the granting of up to 40% of IP shares in the case of spin-offs.

The TTO itself is located near one of the main university campuses and is, like the university, physically integrated with the city itself. The university also manages an
innovation and incubation centre and two major science parks in the city. These science parks primarily facilitate start-up companies with an ICT, mechanical and electrical engineering, microelectronic, bio-medical, and bio-tech focus. A large factor in the emergence of these clusters has been the presence of the aforementioned IMEC in the city, which has accelerated development of high-tech clusters both locally and across the wider Flemish region.

4.8.3.5 Beta Case Summary

This section has described the empirical context of the Beta case. An overview of the university background was presented, before the national knowledge transfer policy framework was illustrated. An outline of the university’s entrepreneurial history and activity was then provided, before the entrepreneurial supports for researchers in the Alpha case were described. This section has therefore illustrated a variety of significant factors which render the Beta case a suitable empirical context within the research framework employed in this study.

Firstly, the Beta case represents an important example in the European context of a university with a long established entrepreneurial focus. In establishing a TTO in 1972, the university was a European fore-runner in structural adaptation to what has become known as the third mission, leading the Alpha case by 34 years in this respect. Chukumba and Jensen (2005) suggest that the age of the TTO is an important factor in the proliferation of entrepreneurial activity in the university context, which suggests that different dynamics may be in evidence in the relationship between TTO professionals and the academic community at the micro-level of analysis as time since the foundation of the TTO elapses.

Secondly, the co-evolution of innovation policy in the Flanders region and the university’s own orientation towards the third mission represents a relatively mature example of localised integration of university, government and industry activities in the manner envisioned within triple-helix perspectives. Benner and Sandstrom (2000) suggest in their study on the institutionalisation of the triple-helix that the integration of
the different helices may require a gradual evolution of alternative interpretations of the purpose and evaluation of research. Consequently, the Beta context is an interesting case in point with respect to this issue, and is also a useful point of contrast along this axis when compared with the Alpha case.

Finally, and thirdly, the Beta case university itself is a renowned example of the archetypal entrepreneurial university within the university based entrepreneurship literature. This renders it a highly appropriate empirical context for the conduct of this study for two key reasons. The first of these reasons is the significant influence of such archetypes on the evolution of institutional fields as a whole. Such organisations play an important role in the definition of best practice, policy, and structure as each of those factors relate to entrepreneurship in this instance. Consequently, they are a focal point of institutional convergence within the aspiring entrepreneurial university population in particular (Greenwood and Hinings 1996), and to the extent that they are subject to the relevant institutional forces, within the university population generally. Additionally, as it is in many respects an ‘ideal case’ entrepreneurial university, the Beta case seems a particularly promising context for the exploration of the manner in which micro-institutional dynamics shape the cognitive underpinnings of entrepreneurial intent. It therefore provides an appropriate context for investigating the mechanisms through which an embedded entrepreneurial logic informs both the perceived desirability and feasibility of entrepreneurial behaviour.

4.8.4 Sampling Strategy

Having provided the empirical background to the Alpha and Beta cases, this section will describe the sampling strategy employed in the identification of suitable interviewees for the study. Yin (2003) suggests that the design of a sampling strategy should reflect the unit of analysis and data collection, as well as the overarching research objectives of the study. Miles and Huberman (1994) present a six point checklist against which the suitability of a sampling strategy should be considered. This framework is displayed in table 4.7.
Table 4.7: Key Elements of an Appropriate Sampling Strategy

<table>
<thead>
<tr>
<th></th>
<th>The sampling strategy should be relevant to the conceptual framework and the research questions addressed by the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>The sample should be likely to generate rich information on the type of phenomena which need to be studied</td>
</tr>
<tr>
<td>3.</td>
<td>The sample should enhance the generalisability of the study (analytic generalisability in the case of qualitative studies)</td>
</tr>
<tr>
<td>4.</td>
<td>The sample should produce believable descriptions and/or explanations</td>
</tr>
<tr>
<td>5.</td>
<td>The sampling strategy should conform to ethical guidelines</td>
</tr>
<tr>
<td>6.</td>
<td>The sampling strategy should be feasible</td>
</tr>
</tbody>
</table>

In accordance with the outlined framework, a purposive research sampling strategy was pursued, in order to both capture the interplay of entrepreneurial and traditional logic at the points where it was most likely to be experienced, and in order to ensure a degree of variation along a selection of theoretically significant dimensions which would enhance the analytic generalisability of the study. This purposive approach is described in more detail in the following section.

4.8.4.1 Purposive Sampling

As the study did not have as an objective the statistical generalisation of findings beyond the sample selected, purposive sampling was considered an appropriate methodological strategy. Purposive sampling is best suited to qualitative research which is informed a priori by an existing body of theory upon which the research questions are based (Miles and Huberman 1994). The complexity of the phenomena under investigation in qualitative research requires the design of sampling strategies to provide a balance between a typically wide range of criteria which are relevant to the objectives at hand. Accordingly, two major factors were considered in the purposive sample selected for the conduct of this study.
The first factor was the disciplinary background of the study’s participants. Within the university based entrepreneurship literature, the increased significance of the high-tech sciences such as ICT, bio-technology, advanced materials, and electronics has made the disciplines relevant to these sectors a focal point of empirical research (Etzkowitz 2001, Philpott et al. 2011). This was reflected in the entrepreneurial profile of both empirical cases, with the vast majority of spin-off companies and patenting activity falling within these sectors. As academics within these disciplines were most likely to have been exposed to the logic of entrepreneurship and knowledge transfer, they were deemed the most appropriate population for the selection of interviewees.

The second factor was the academic life-cycle stage of the study’s participants. This criterion has been used for sample selection in a large number of previous studies within the field (Shane and Stuart 2002, Boardman 2008, Morales-Gualdron et al. 2009, Prodan and Dmowski 2010, Ding and Choi 2011, Lam 2011, Goethner et al. 2012, Ankrah et al. 2013) and as such has validity as a theoretical variable. Ding and Choi (2011) suggest that academic life-cycle stage may be significant for two key reasons. Firstly, seniority may enhance the likelihood of entrepreneurial behaviour given the experience and social capital accumulated by an individual of senior status. Additionally, Levin and Stephan (1991) suggest that desire to capitalise on accumulated tacit knowledge may be a significant factor at this stage. Alternatively, Ding and Choi (2011) suggest, the productivity rates and proximity to cutting edge research exhibited by younger scientists may enhance their likelihood of identifying and pursuing entrepreneurial opportunities. In accordance with these propositions and in order to capture this heterogeneity, a mix of early, mid, and late carer stage academics were selected for this study using years since PhD as the search criterion (Buenstorf 2009).

In total, 35 participants were interviewed in the study over a period of 14 months (June 2011 to September 2012). The affixed code for each interviewee, their disciplinary background, the number of years since their attainment of their PhD degree, and their gender is provided in table 4.8.

<p>| Table 4.8: Overview of Interviewees |</p>
<table>
<thead>
<tr>
<th>Interviewee Code</th>
<th>Discipline</th>
<th>Case</th>
<th>Years Since PhD</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Physics</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
<tr>
<td>A-2</td>
<td>ICT</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
<tr>
<td>A-3</td>
<td>E.Engineering</td>
<td>Alpha</td>
<td>&lt;5</td>
<td>Male</td>
</tr>
<tr>
<td>A-4</td>
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<td>Alpha</td>
<td>&lt;5</td>
<td>Male</td>
</tr>
<tr>
<td>A-5</td>
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<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
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<td>A-6</td>
<td>Chemistry</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
<tr>
<td>A-7</td>
<td>Life Sciences</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
<tr>
<td>A-8</td>
<td>ICT</td>
<td>Alpha</td>
<td>5-10</td>
<td>Female</td>
</tr>
<tr>
<td>A-9</td>
<td>E.Engineering</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
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<tr>
<td>A-10</td>
<td>E.Engineering</td>
<td>Alpha</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
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<td>E.Engineering</td>
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<td>Alpha</td>
<td>5-10</td>
<td>Male</td>
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<td>Alpha</td>
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<td>Life Sciences</td>
<td>Alpha</td>
<td>&gt;10</td>
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</tr>
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<td>B-1</td>
<td>ICT</td>
<td>Beta</td>
<td>&gt;10</td>
<td>Male</td>
</tr>
<tr>
<td>B-2</td>
<td>Life Sciences</td>
<td>Beta</td>
<td>&gt;10</td>
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<tr>
<td>B-15</td>
<td>E.Engineering</td>
<td>Beta</td>
<td>&gt;10</td>
<td>Male</td>
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</table>

4.9 Data Collection

Having presented the background to the empirical research and provided an overview of the interviewees, this section will present a detailed description of the data collection.
conducted during this study. The semi-structured interview approach will first be described, before the interview protocol itself is discussed.

4.9.1 Semi-Structured Interviews

Maintaining consistency with the qualitative and comparative case study approaches identified as most appropriate to the research objectives of this study, semi-structured interviews were recognised as the most suitable means of collecting qualitative data in the field. As Hermanowicz (2002, p.480) argues, semi-structured interviewing “brings us arguably closer than other methods to an intimate understanding of people and their social worlds.” Similarly, Yin (2003) suggests that such interviews serve as the best means through which researchers may gain access to participants understanding of both actions and events. In addition to this primary mode of data collection, secondary data such as policy reports and strategic documentation was also analysed for the purpose of triangulation (Yin 2003).

Having chosen the appropriate research and methodological framework, and having identified suitable cases for the conduct of the field research, the next task confronting the researcher was obtaining the participation of potential interviewees in the research study. These individuals were contacted via email with a cover letter (Appendix A) outlining the nature and background of the research study, as well as the nature of their potential contribution. Reassurances with respect to anonymity were provided, and the broader relevance of the subject of investigation to the participants themselves was explained. Significant flexibility was required with respect to the scheduling of interviews on the part of the researcher, reflecting the often tight time schedules of the participants.

Having first conducted two pilot interviews in order to test the interview protocol, the interviews were conducted over a fourteen month period from July of 2011 to September of 2012. In total, thirty-five interviews were conducted, with twenty-nine being conducted as face-to-face interviews, and six being conducted via telephone or
Skype. The conduct of interviews via telephone or Skype was primarily necessitated by resource constraints, and significant care was taken to assure no significant divergence between the two methods was generated in the nature of the data collected. As the latter form of interview was conducted exclusively towards the end of the data collection schedule, the consistency of patterns in data generated with face-to-face interviews suggested no significant differences between the two. At this point in the data collection process, data saturation was increasingly in evidence. Therefore, the conduct of semi-structured interviews was concluded in September 2012. The interviews ranged from forty to sixty minutes, and yielded three hundred and seventy-four pages of transcripts in total.

4.9.2 The Interview Protocol

As indicated, a semi-structured interview protocol was employed as the primary instrument of data collection in the study. Rigid adherence to a set order of questioning was not observed, as this was deemed likely to result in the interviewer leading the conversation as opposed to the interviewee. Instead, interviews took on a loosely structured format. Both the pilot interviews and previous experience of semi-structured interviewing proved useful in this respect. Encouraging interviewees to impart their personal history in the initial stages of the interview had proved invaluable in establishing their comfort in the articulation of their experiences, and this approach was adopted throughout the study as a consequence. Probing questions were then used in order to prompt further elaboration of issues which were of particular relevance to the study.

Despite the loose structure of the interviews, however, significant effort was invested in constructing an underlying protocol which would address the study’s research objectives. Having identified the four guiding research questions of the study following an extensive analysis of the literature, the selection of key themes and issues which would form the basis of the interview protocol was carefully undertaken, with due consideration given to both the extant literature and the relevant reference points for individual participants. In this respect, the researcher took care to avoid the use of
technical jargon, and questions were as much as possible phrased in relatively simple terms while maintaining the integrity of the underlying protocol. This was deemed crucial to uncovering the unique perspectives and experiences of each individual participant. The fluid nature of the interviews permitted the researcher to revisit certain issues as it was deemed necessary, and to pursue particularly promising lines of conversation as they arose. The final iteration of the interview protocol is provided in Appendix B.

4.10 Data Analysis

Having described the process of data collection in the previous section, this section will present the process of data analysis engaged in by the researcher. Data analysis is the “examining, categorising, tabulating, or otherwise recombining (of) the evidence to address the initial propositions of a study” (Yin 1994, p.102). Miles and Huberman (1994) further describe the process of data analysis as involving the reduction of data through selection, simplification, and abstraction, the organisation of rendered data for the purposes of categorisation, and finally the drawing of conclusions relevant to the research objectives.

4.10.1 Initial Reflection on the Data

The initial phase of data analysis involved the reading and re-reading of interview transcripts for the purpose of both familiarising the researcher with the data, and for the generation of individual summaries as they related to key themes in each interview. These summaries were compared with notes taken during the conduct and recording of interviews in order to deepen the researcher’s understanding of the interviewee’s perspective. Additionally, this practice enabled the maintenance of a valuable link between the line of thought which guided this initial analysis and the line of thought which guided the real time trajectory of the interviews themselves. This represented the first step in the evaluation and identification of data patterns which responded to themes and research objectives identified in the review of the literature.
4.10.2 Thematic Coding of the Data

Having acquired a general analytical focus with which to reduce and organise the data, the next step involved the application of coding techniques which would form the basis of the analytical categorisation undertaken. Text extractions which referred to significant ideas, behaviours, attitudes, interactions, incidents, assumptions, principles, practices, expectations, or terminology were initially identified and organised into broadly coherent categories of meaning. These served as the primary codes with which conceptual linkages between the data and important theoretical constructs were firstly developed. Weft QDA (Qualitative Data Analysis) software was also employed in order to check the reliability of categories and to ensure that all relevant issues had been identified.

Given the critical nature of this step in the development of the analytical process, considerable effort was invested in the re-reading and re-checking of codes in order to appropriately categorise and sub-categorise the data. In addition to manual coding procedures, emergent categories were also developed in this manner with the iterative procedure ultimately underpinning a process of category adjustment which best captured the nuanced relationship between distinct themes and concepts. When re-reading of codes led to no further identification of themes or sub-categories, the analytical process proceeded to synthesis and cross-comparison of the analytical categories with a view to identifying relationships and emergent propositions. Figures outlining the thematic coding frameworks are provided in Appendices C, D, E, and F.

4.10.3 Integration of Theory and Emergent Categories

At this point, the data analysis became more conceptually motivated with attention focused on the integration of analytical categories with the extant literature. This was initially achieved through the utilisation of matrices, after which networks of codes,
categories, and themes were diagrammatically represented and examined. Miles and Huberman (1994) suggest that such graphical representation and analysis of categories is of significant value to the condensation and integration of complex qualitative data. This was particularly true for the process of cross-case comparison wherein the researcher sought to identify similarities and differences both within and between cases (Eisenhardt 1989). Through the iterative process of comparison both between the cases and between the emergent categories of meaning and the literature, important insights emerged which formed the basis of clear interpretations of meaning. These interpretations as they related to the guiding research questions of the study were then organised into the framework of findings presented in chapters five and six. An overview of the classic analytical steps upon which the data analysis employed in this study was founded is provided in table 4.9.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Affixation of codes to interviews and observations</td>
</tr>
<tr>
<td>2.</td>
<td>Noting of initial reflections</td>
</tr>
<tr>
<td>3.</td>
<td>Identification of similar phrases, relationships between variables, patterns, themes, distinct differences between sub-groups, and common sequences</td>
</tr>
<tr>
<td>4.</td>
<td>Isolation of patterns and processes, commonalities and differences, and utilisation of them in subsequent waves of data collection</td>
</tr>
<tr>
<td>5.</td>
<td>Elaboration of small sets of generalisations</td>
</tr>
<tr>
<td>6.</td>
<td>Confronting those generalisations with a formalised body of knowledge in the form of constructs of theories</td>
</tr>
</tbody>
</table>

(Miles and Huberman 1994)

### 4.11 Validity and Reliability

When establishing the rigour of a study two major issues must be considered. The first is validity, or the extent to which the research accurately reflects and measures the phenomenon or concept which is the subject of the study (Silverman 2006). The second issue is reliability, or the extent to which the instrument would yield the same results
when applied at a later date (Easterby-Smith et al. 1991, Silverman 2006). These issues are of particular importance in the context of case study research, and will be addressed in this section of the chapter.

4.11.1 Validity

Three levels of research validity were considered in the conduct of this study. There were:

- Construct Validity
- Internal Validity
- External Validity and Generalisability

Construct validity is concerned with the operationalisation of variables within the study (Yin 1994). This was achieved through an extensive analysis of both the university based entrepreneurship and the neo-institutional literatures as they informed the research objectives. The major points of thematic focus which emerged from this literature review served as the basis for the operationalisation of key concepts in the data collection process. Internal validity is concerned with causality and the presentation of causal relationships (Miles and Huberman 1994). This issue was addressed during the data analysis phase by examining the credibility of emergent linkages between data and theory, pattern matching, building of explanations, cross-case replication, and considering of rival explanations.

Finally, external validity was considered. This issue is concerned with the generalisability of findings beyond the immediate participants of the study. Case study research in particular is subject to criticism in this respect as this method is often regarded as unsuitable for the application of findings to a broader context. However, the distinction between analytic and statistical generalisation must be acknowledged when considering this issue. Expansion and generalisation of theory, rather the enumeration of frequency is the objective in such a study, with the explanation most consistent with the data being that which is of the greatest value (Yin 1994, Easton 2010). In addition,
the dual case study approach employed in this study provides greater scope for theoretical and literal replication.

4.11.2 Reliability

The second major issue which must be considered in ensuring the rigour of a research study is reliability. This issue was addressed in a number of ways. Firstly, the researcher employed a formal case study protocol, retaining a database of evidence and findings as recommended by Yin (1994). This enabled the maintenance of a ‘chain of evidence’ which shows a clear line of progression from research design, to case selection, to data collection, to data analysis. Secondly, all interviews were recorded in order to ensure verbatim representation of participant perspectives and in order to prevent the loss of emphasis or meaning in their accounts (Seale 1999). Finally, any points of ambiguity in the interview protocol were addressed following their identification during pilot interviews, and alterations were made in a manner which was consistent with the key concepts identified in the review of the literature.

4.12 Limitations

Although the research design and methodological choices in this study have been made after careful consideration of their suitability to the research objectives, a number of limitations must be acknowledged.

A first limitation which must be considered is the generalisability of the study, which is affected by a number of factors. The first of these is the relatively small number of participants in the study in the context of the great heterogeneity which exists within the wider academic population. Although the sampling strategy was designed with due consideration to heterogeneity within variables of particular theoretical significance, it was not possible within the context of the proposed research framework to construct a wholly representative sample of the wider academic population. In light of the research objectives outlined earlier in this chapter, and with due consideration of the available
methodologies, an in-depth study of a small sample was deemed more appropriate given the complexity of the phenomena under investigation, and the attendant exploratory nature of the study itself. Analytic, as opposed to statistical, generalisability became the primary focus.

A **second** limitation, also related to generalisability, is the heterogeneity in the wider university population. This study focused on just two universities and as such cannot capture the full range of context specific factors manifested in the wider institutional field. This decision was justified on the basis of the potential for the identification of deep causal processes in operation under contingent conditions which are both of relevance and of interest to the wider study of the phenomenon at hand (Easton 2010). Comparative case studies offer a valuable source of insight for both theory building research and the identification of promising avenues for future work in the field by analysing the underlying causes of both similarity and difference (Eisenhardt 1989). In order to enhance this dimension of the study, the cases were selected on the basis of the probability of underlying variation along the dimensions of theoretical interest (Seawright and Gerring 2008).

A **third** limitation is that a large number of the participants in the study, primarily from the Beta case, were interviewed in a language which was not their language of primary use. In conducting interviews, this may place limits of expression on the interviewee which may constrain their ability to fully convey their perceptions and impressions with respect to topics of interest to the researcher. To overcome this risk, a fluent speaker in both English and Flemish accompanied the researcher for initial interviews. As it quickly became clear that interviewees were themselves fluent in English to a degree which was largely indistinguishable from the Irish based participants, the accompaniment of a fluent Flemish speaker was no longer deemed necessary. Nevertheless, it is a limitation worthy of consideration.

A **fourth** limitation of the study is the inherent subjectivity and attendant risk of bias associated with the chosen methodological framework. Two significant sources of bias
must be considered. The first is bias which arises from the researcher’s own effect on
the behavioural orientation of participants at the site of the case study. The second is
the researcher’s own beliefs, values, and pre-existing assumptions which may adversely
affect the investigation of important issues, and unduly influence the analysis of the
empirical data (Miles and Huberman 1994). The nature of the methodology employed
inherently renders the researcher as part of the research process, and as such these
factors are to some degree inseparable from it (Giddens 2001). The researcher
addressed these issues by considering their potential impact at each stage of the
research process, and by coding and analysing the qualitative data in accordance with a
systematic protocol. Nevertheless, researcher bias cannot fully be eliminated given the
methodology employed and this limitation remains worthy of consideration.

4.13 Conclusion

This chapter has described the research methodology which was chosen to address the
research objectives of this study. The primary research question and the four supporting
sub-questions were first presented and discussed. The chapter then examined the major
philosophical perspectives which underpin the scientific process, before presenting the
arguments for the adoption of a critical realist perspective for the study at hand.
Following the presentation of this justification, the underlying rationale for the
employment of comparative and qualitative case study methodological approach was
then provided. The selection and empirical background of the case studies was then
explained, along with the sampling strategy and an overview of the participating
interviewees. The data collection and data analysis procedures were then described,
before factors relating to the validity and reliability of the adopted methodological
framework were discussed. Finally, the limitations of this framework were
acknowledged and considered.

The next chapter will present the research findings as they relate to the interviewed
academics’ desirability perceptions, with the two elements explored being the manner
in which locally embedded role frames shaped the personal attitudes of interviewees
towards entrepreneurship as they address research question one, and the manner in
which local dynamics of legitimation shaped the socialisation of entrepreneurial norms as they address research question two.
CHAPTER 5: FINDINGS I - MICRO-INSTITUTIONAL DYNAMICS AND DESIRABILITY PERCEPTIONS

5.1 Introduction

Chapter five will present the research findings which concern the interviewed academics’ desirability perceptions as they are conceptualised within Krueger’s (2000) entrepreneurial intentions framework. The two elements explored will therefore be the personal attitudes of interviewees as they address research question one, and the socialisation of entrepreneurial norms as they address research question two. This chapter will be structured in accordance with these questions, while the following chapter will address research questions three and four.

The purpose of this chapter is to explore the manner in which the desirability perceptions of the interviewees with respect to entrepreneurial behaviour were shaped by micro-institutional dynamics in the empirical cases. This analysis is conducted in the context of the review of the literature presented in chapters two and three, and therefore focuses on the impact of institutionally embedded role frames on personal attitudes towards entrepreneurial behaviour in section 5.2, before examining the manner in which local legitimacy dynamics shaped social norms in section 5.3. Together, these sections will outline the findings of the study as they detail the mechanisms through which the prevailing institutional logic shaped desirability perceptions with respect to entrepreneurship. The findings will therefore describe the manner in which micro-institutional dynamics influenced the underlying cognitive infrastructure of entrepreneurial intent in the Alpha and Beta cases. A recap of the guiding research questions for this chapter is provided in table 5.1.
Table 5.1: Recap of Guiding Research Questions for Chapter Five

<table>
<thead>
<tr>
<th>Research Question 1</th>
<th>How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 2</td>
<td>How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?</td>
</tr>
</tbody>
</table>

The findings will be outlined with the intent of comparing and contrasting the data from the Alpha and Beta cases with a view to identifying any points of distinction between the two cases as they inform the outlined research questions. Representative quotes will be employed in order to illustrate the perspectives offered to the researcher by the study’s participants. This quotes will be presented in headed tables for the purpose of illustrating the patterns in the data while maintaining in their detail the richness of the qualitative sources from which they are drawn. Summary tables are provided at the end of each sub-section of the two major themes of the chapter in order to provide the reader with a concise picture of the findings that were uncovered.

### 5.2. Embedded Role Frame and Personal Attitude

Section 5.2 will describe the findings of the study which address research question one. These findings are concerned with the manner in which the locally embedded academic role frame shaped the personal attitude of academics towards the perceived desirability of entrepreneurial behaviour. The following paragraphs will provide a brief recap of the conceptual framework which informed the analysis conducted in answering this question, before the findings themselves are described in detail in the following sections.
The review of the literature provided in chapters two and three discussed the implications of the institutional transformation depicted within triple-helix perspectives of the university when this transformation was considered at the micro-institutional level of analysis. A key function of institutions within the cultural-cognitive tradition of institutionalism is their framing of social behaviour through the provision of meaning and value to it. Institutions provide individuals with shared cognitive role frames within which the meaning of action is constructed and the behavioural boundaries of roles are defined. The shared nature of these frames makes their extension and reconstruction a difficult process (Garud et al. 2007), as the underlying logic of social roles spans from these socially shared cognitive representations of institutionalised beliefs about what is functionally and morally appropriate (Pant and Lachman 1998).

Micro-institutional change can therefore only fully be understood within the context of pre-existing and situated logical frames within which institutionally embedded individuals assign meaning to behaviours and respond to pressure for change. As such, institutional transformation at the cultural-cognitive level is subject to the emergence of congruence between the prevailing and novel interpretive frames which underpin institutional roles. The neo-institutional literature therefore suggests that for the underlying logic of the entrepreneurial university to gain prominence, congruence between entrepreneurial behaviour and “culturally embedded assumptions regarding what is morally right and/or functionally appropriate” is essential (Brown et al. 2012, p.299). From this congruence, and from the alignment of novel role frames with existing ones, comes the mobilising resonance which motivates incumbent individuals to act (Snow et al. 1986).

Using the methodology described in the previous chapter, analysis of the qualitative interview data was conducted in the context of this conceptual framework. During this analysis, the locally embedded academic role frame was found to be significant to personal attitudes towards entrepreneurship across two distinct dimensions which reflected the degree of the embeddedness of entrepreneurial logic in the local context.
By illustrating how the interviewed academics perceived the degree of congruence, or alignment, between the academic and entrepreneurial role frames and attendant behaviours across these two dimensions, these findings will describe how micro-institutional dynamics shaped personal attitudes towards entrepreneurship in either case.

The first dimension of the role framing effect that will be addressed is the extent to which the entrepreneurial role frame was regarded as having its causal impetus in endogenous (academic) or exogenous (non-academic) sources, or in other words the extent to which the underlying logic of the third mission of entrepreneurship was regarded as congruent or incongruent with the logic of academia.

The second dimension of the role framing effect that will be described is the extent to which the content of the entrepreneurial role frame was regarded as functionally and representationally congruent with prevailing role conceptions, and consequently the extent to which academics in the two cases regarded the entrepreneurial role frame as a reconstructive or elaborative conceptualisation of the academic role. Together, the findings as they relate to these two dimensions of the locally embedded role frame will illustrate how micro-institutional dynamics in the Alpha and Beta case contexts shaped personal attitudes towards the desirability of entrepreneurial behaviour, and as such, conditioned individual propensity for entrepreneurial cognition and action.

The findings will be presented as follows. Section 5.2.1 will describe the findings which show how the differential embeddedness of entrepreneurial logic in the two cases was reflected in role frames which provided very different meaning to entrepreneurial behaviour across the two dimensions outlined above, and divergent attitudes towards the congruence of entrepreneurial activity with the academic role. These findings will therefore describe how the relatively weak embeddedness of entrepreneurial logic in the Alpha case prompted perceptions of tensions and contradictions between academic and entrepreneurial logic on the part of interviewees. They will also describe how the relatively stronger embeddedness of entrepreneurial
logic in the Beta case was reflected in much stronger perceptions of *alignment and congruence* in this respect.

In section 5.2.2, the findings will describe how analysis of the data also revealed entrepreneurial behaviour to be *interpreted as a means of resolving role anxieties* in the context of the academic role. In so doing, these findings will demonstrate the manner in which the legitimacy of entrepreneurship was advanced through its perceived resolution of contradictions and existing tensions in the prevailing academic role frames. As such, these findings will reveal how role frame dynamics also served as a means of enhancing the legitimacy and desirability of entrepreneurship in both functional and representational terms, and therefore served as a mechanism through which entrepreneurial behaviour could be reframed as attending to academic ends.

### 5.2.1 Embedded Role Frame: Tension and Contradictions

In this section, the findings will describe the extent to which academics in the Alpha and Beta cases recognised the existence of tensions and contradictions between the academic and entrepreneurial role frames. In so doing, they will describe how the embeddedness of entrepreneurial logic was reflected in the perceived congruence or incongruence of an entrepreneurially oriented academic role and the academic role as the interviewees personally interpreted it. The significance of the alignment between these two interpretations with respect to the desirability of entrepreneurship is described by Snow et al. (1986) as ‘resonance’, or the mobilising potency of a novel frame as it aligns with prevailing beliefs, values, and interests. The mobilising resonance of a particular framing of an individual’s role is “the degree to which a frame is able to create such a connection, a deep responsive chord with individuals and motivate them to act” (Coburn 2006, p.247).

This resonance hinges on the congruence of the underlying logic of that frame with the cultural-cognitive context of the individual, and as such the extent to which the behaviours associated with that interpretation are indicative of (legitimate) normal variability rather than (illegitimate) role deviation (Turner 2006). The resonance and
motivational force of entrepreneurship is therefore partially determined by the extent to which its underlying logic is perceived as elaborative or reconstructive in nature (Colomy 1998), as the extent to which a given mode of behaviour is identified as a reconceptualisation of an institutionalised role determines the extent to which resistance to this transformation will be stimulated (Jepperson 1991). Whereas role elaborations are incremental and procedural alterations of the institutional order, role reconstruction is significantly more disruptive and is therefore likely to threaten individual routine and security (Powell 1991, Colomy 1998). In this respect, the perception of the underlying rationale or logic of role change as endogenous or exogenous in nature, and therefore consistent with institutionally endogenous understanding of the role’s social legitimacy, has great significance for the desirability of associated behaviour, as logically exogenous frames are likely to exacerbate the significance of logical contradictions which threaten institutional arrangements.

In the following sections, the findings will describe how analysis of the data revealed significant differences between the two cases in this respect. They will show how the extent of the embeddedness of entrepreneurial logic in either case was reflected in the framing of entrepreneurial behaviour as contradictory and reconstructive, or congruent and elaborative in the context of the academic role. They will also describe how the relatively weaker or stronger embeddedness of entrepreneurial logic was reflected in the perceived functional and representational alignment of entrepreneurial behaviour with the academic role frame as interviewees interpreted it. In so doing, the findings will demonstrate how personal attitude towards the desirability of entrepreneurial behaviour was shaped at the micro-institutional level through these role frame dynamics. An overview of this analytical framework is provided in figure 5.1.
5.2.1.1 The Entrepreneurial Role - Framing of Impetus and Underlying Rationale

The first key issue which emerged in the analysis of the data with respect to the framing of entrepreneurial behaviour was the significance interviewees afforded to its causal impetus, or the underlying rationale for its emergence as an interpretation of the academic role. Roles exist in a form of ‘accommodation’ at any one point, within which a relatively stable combination of interpretations of the role are facilitated (Turner 1990). The impetus for change in the nature of these combinations is provided by destabilising conditions which threaten and challenge the prevailing accommodation. This impetus, or cause, of institutional pressure for change therefore is “the rationale, set of expectations, or intended objectives” that creates this pressure (Oliver 1991, p.161).

Analysis of the data revealed a significant divergence in attitudes between the two cases in this respect, with Alpha case interviewees being much more likely to frame the
entrepreneurial role as conceptually aligned with institutionally exogenous (non-academic) logic. Beta case interviewees, on the other hand, were more inclined to depict entrepreneurial behaviour in the academic context as an activity which was driven by institutionally endogenous (academic), and therefore congruent, objectives and values. Exploring the source of this divergence revealed the manner in which the mobilising resonance or desirability of entrepreneurship was affected by this distinction. The following comments from interviewees A-13 and A-16 illustrate a general tendency in the Alpha case, represented across 17 of the 20 interviews, to frame entrepreneurship as a strategic issue which was driven by the university’s administrative leadership:

<table>
<thead>
<tr>
<th>Impetus and Rationale - Managerially Driven Nature of Entrepreneurship in the Alpha Case</th>
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<tbody>
<tr>
<td><strong>A-13</strong></td>
</tr>
<tr>
<td><strong>A-16</strong></td>
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</table>

As these comments suggest, however, the administrative leadership of the university were not necessarily regarded as the source or root cause of the impetus for the emergence of the entrepreneurial role frame. Instead, the interpretation of the role of academics entailed within the entrepreneurial frame was understood as a reflection of an external, and political, shift in the expectations attached to the university. In this sense, the entrepreneurial role frame was identified by a large proportion of the sample (14) as being underpinned by an incongruent underlying logic, spanning from alternative institutional spheres and being integrated into the academic domain in part
through instrumentalist political action. The following comments from interviewees A-6 and A-5 reflect this assertion:

<table>
<thead>
<tr>
<th>Impetus and Rationale - Politically Driven Nature of Entrepreneurship in the Alpha Case</th>
</tr>
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<tbody>
<tr>
<td>A-6</td>
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<tr>
<td>A-5</td>
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</table>

These perspectives on the impetus and underlying logic for the emergence of the entrepreneurial role frame were a key point of incongruence between the entrepreneurial and academic role interpretations in the Alpha case, with entrepreneurship as a perceived policy objective being consistently framed in this manner. This was true even of interviewees who offered otherwise positive interpretations of the legitimacy of entrepreneurial behaviour such as interviewee A-3, who stated that entrepreneurship as it was represented within management issued strategic documentation was “heavily laden with political buzzwords” and “in a lot of ways pretty vacuous as a result.” For the majority of Alpha case interviewees, framing the entrepreneurial role as having managerialist or instrumentalist causal underpinnings diminished its legitimacy as a behavioural frame which would be appropriate in the
academic domain, as its underlying rationale was regarded as contradicting the legitimising logic of the academic role as they understood it. In this sense, the framing of academic activity within the third mission was regarded as a misinterpretation of the academic role. Or in other words, it was seen as an illegitimate interpretation of it. We will look at further issues which emerged from this perception in the following sections.

Beta case perspectives offered an interesting point of contrast on this issue. As outlined in the previous chapter, the Beta case represented an exception to the European norm in that the historical emergence of third mission activities was in that context characterised by a much more informal and gradual development which over time gave rise to the formalisation of entrepreneurial activities in the university. This graduated historical emergence of an entrepreneurial agenda was significant within interviewee accounts of legitimacy of the entrepreneurial role frame. Interviewee B-1 offered an interesting perspective which neatly captures the contrast between the two cases: “It was not a strategic move, it was not centrally orchestrated or organised. Basically, it started here because you had some people who liked to be entrepreneurial and who engaged in such initiatives...so they were saying to each other ‘this is all fine, but we should have a structure which accommodates this, because we cannot just keep doing this on our own initiative because at the end of the day we as individuals are responsible for what’s going on, and what might go wrong even’. So you can say they were operating outside or alongside, but these issues were eventually raised by people who were acting in this entrepreneurial way.”

In contrast to the Alpha case then, entrepreneurial behaviour was not perceived as having its impetus in political or managerial rationale, and as such, predicated on a divergent or contradictory logical basis. Rather, it was widely interpreted (12 of 15 interviews) as an endogenous and elaborative pattern of behaviour which over time had been further legitimised through formal and structural changes. To the extent that entrepreneurship was mandated or supported by the formal university structures then, this was understood as a product of academic rather than management interests. The following comments from interviewees B-2 and B-5 further demonstrate this point:
Impetus and Rationale - Academic Impetus for Entrepreneurship in the Beta Case

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>B-2</td>
<td>“What was important at that time was that the university acknowledged what we were doing was a good thing, that it was useful and valuable, and that they also saw it fits with the other academic goals and objectives. And since they did, we said ‘let’s think about an appropriate structure for this.’”</td>
</tr>
<tr>
<td>B-5</td>
<td>“We were really early in Europe in establishing a TTO in the early 1970s, and what is important is that it was really a ‘bottom-up phenomenon’, and I think that to a large degree this is still the case....It started from the academics themselves, and around that was created a structure, which over time has become fully integrated with the university.”</td>
</tr>
</tbody>
</table>

In contrast to the Alpha case then, where the entrepreneurial role frame was widely regarded as being underpinned by non-academic logic, the formal recognition of entrepreneurship in the Beta case was understood as the result of attempts by entrepreneurially oriented academics to address the anxieties associated with the unofficial nature of their activities. This desire for a formal, organisationally legitimated structural basis to their activities is consistent with the role stress which arises for individuals when there is a distinct lack of fit between their formal and actual social roles, as individuals seek to create social structures in order to resolve the prevailing ambiguity (Diamond and Allcorn 1986).

This historically legitimated pattern of entrepreneurial behaviour was therefore widely recognised by interviewees as an important source of legitimacy for entrepreneurially focused research in and of itself, with the tradition of such activities in the Beta context being identified as an important element of the organisation’s historical narrative by 12 of the 15 interviewees. As interviewees B-3 and B-15 stated:
This historical narrative for the entrepreneurial role frame represents an important distinction between the micro-institutional context of academics in the Alpha and Beta cases. As outlined earlier in this section, role re-conceptualisations can take on an ‘elaborative’ or a ‘reconstructive’ character, depending on the perceived alignment of the new pattern of behaviour with the prevailing one. The perceived impetus or underlying rationality for this change is inextricably linked to individual perceptions of it, and as such, the framing of entrepreneurship as being driven by instrumentalist or managerial rationale diminished its congruence and mobilising resonance in the Alpha case. This interpretive frame was not in evidence in the Beta case interview data. The implications of this difference in interpretive frames will be made clearer as we examine perceptions of role content in the next section.

5.2.1.2 Alignment of the Entrepreneurial Role Frame - Refocusing of Academic Function

The findings in the previous section described an important dimension of the congruence and mobilising resonance of a novel frame, as the perception of the entrepreneurial role as having its causal impetus in managerial or instrumentalist logic was an important point of tension between role interpretations in the Alpha case. For these interviewees, this prompted a variety of questions about the legitimacy of the
entrepreneurial role which centred on two distinct dimensions, one of which was *functional* in nature, the other of which was *representational*. These dimensions of a social role’s legitimacy are central to processes of role change (Turner and Colomy 1988, Turner 1990), and are therefore essential elements of the cognitive frames which describe roles for individuals.

In the Alpha case, the interpretation of entrepreneurial activity as being underpinned by instrumentalist logic prompted questions about the functional congruence of the entrepreneurial role frame as it was interpreted within the university administration’s presentation of the third mission. A key example was the belief that entrepreneurship as envisioned by university management constituted as a logical and normal extension of the prevailing academic role, an interpretation the majority of interviewees found to be deeply contradictory. This is illustrated by the following comments from interviewees A-2, A-11, and A-9:

| Role Function - Top-Down Re-Framing of Role Function in the Alpha Case |
|-----------------------------|-----------------------------------------------------------------------|
| **A-2**                    | “There’s an assumption at the top that this is just another way of doing research” |
| **A-11**                   | “I think it’s seen by the UMT (University Management Team) as just another application of your skills, that you can just transfer them to this area.” |
| **A-9**                    | “They seem to see it as more or less the same thing, that it’s something you can refocus your research for.” |

This perspective was offered by a large majority (17) of interviewees in the Alpha case, and was primarily presented as evidence of a fundamental lack of alignment between the entrepreneurial role frame and the function of the academic role as they understood it. Consequently, a large number of interviewees in the Alpha case (15) pointed to functional contradictions within the entrepreneurial frame conception, describing
entrepreneurship as a functionally significant behavioural departure in the context of the academic role:

<table>
<thead>
<tr>
<th>Role Function - Functional Incongruence of the Entrepreneurial Role Frame in the Alpha Case</th>
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<tbody>
<tr>
<td>A-5</td>
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<tr>
<td>A-16</td>
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</table>

The third mission narrative and the attendant entrepreneurial role frame therefore represented an alternative interpretation of the academic role in terms of its societal function in the Alpha case. In the first instance it was novel, but more importantly it was perceived as being conceptually anchored within a role frame which misinterpreted the academic function. Institutional pressures which emphasise efficiency or effectiveness fundamentally challenge the functionality of pre-existing role frames (Seo and Creed 2002), and as such represent a challenge to prevailing interpretations of the functional legitimacy of the relevant roles (Oliver 1991). The comments from the Alpha case interviewees highlight their recognition of entrepreneurship as a contending or rival interpretation of the function of the academic role, and consequently their identification of it as contradictory.

This functional legitimacy challenge was interpreted quite differently in the Beta case. Firstly, and in accordance with the findings of the previous section, Beta case
interviewees did not regard entrepreneurial behaviour as an issue which was driven by political or managerial interests. As such, there was no attendant perception in the majority of interviews (14) of entrepreneurial behaviour as an external attempt to reframe the academic role function to instrumentalist ends. As the following comments demonstrate, entrepreneurial activity was not regarded as a management or political concern:

<table>
<thead>
<tr>
<th>Role Function - Academic Framing of Role Function in the Beta Case</th>
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<tbody>
<tr>
<td><strong>B-8</strong></td>
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<tr>
<td><strong>B-6</strong></td>
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</table>

The implications of this conceptualisation of entrepreneurial behaviour were significant in the context of the perceived functional legitimacy of the entrepreneurial role. Whereas in the Alpha case, the widespread assumption that the academic role as it was interpreted within the third mission was a product of managerialist logic and political expediency, 14 of the 15 Beta case interviewees regarded an entrepreneurial interpretation of the role as a logical application of academic work and consequently, a functionally effective one. As the following comments from interviewees B-4 and B-13 illustrate:

<table>
<thead>
<tr>
<th>Role Function - Functional Congruence of the Academic Role Frame in the Beta Case</th>
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<tbody>
<tr>
<td><strong>B-4</strong></td>
</tr>
</tbody>
</table>
“If you are producing good results, as long as what you are doing is about finding something new and finding applications or processes that haven’t been found before then that’s normal academic work as far as I’m concerned”

This was an important manifestation of the embeddedness of an entrepreneurial role frame in the Beta case. Alpha case interviewees framed the entrepreneurial role as a mangerially and politically defined construct which was constituted in accordance with non-academic interests and was undermined by functionally problematic logic as a result. By contrast, Beta case interviewees were more likely to frame entrepreneurship as defined and driven by functionally legitimate academic values. Entrepreneurship was not regarded as a reframing of the academic role, rather it was an alternative but essentially congruent interpretation of it. As such, the alignment of the academic and entrepreneurial role frames was much stronger, with significant implications for the mobilising resonance of the entrepreneurial act and the embedded individual’s personal attitude.

5.2.1.3 Congruence of the Entrepreneurial Role Frame - The ‘Mentor’ Function

Further exploration of the issue of functional alignment between the academic and entrepreneurial role frames highlighted the disparity in interpretations of the impact on the ‘mentoring’ dimension of the academic function. Role theory demonstrates that as roles are inherently social in nature, they are situated within role systems that involve a range of functional and representational relationships with other social roles (Turner 2006). In the context of academia, the functional relationship with the student role as manifested in teaching or mentoring is a core value of the academic role itself. Mentoring of students is an important element of the societal value provided by the academic role, reflecting as it does a historical societal function of the public university (Louis et al. 1989, Olssen and Peters 2005, Martinelli et al. 2008)
Perspectives on the congruence of the academic and entrepreneurial role frames offered by the academics in this study frequently addressed this functional relationship. A majority of Alpha case interviewees (16) generally conceived of the academic entrepreneur role as representative of a significant change in the nature of the relationship between the academic and other salient roles in the social system, primarily the student role (both post and under-graduate students), and suggested that the attendant functional relationship would be disrupted by engagement in entrepreneurial activities:

| The Mentor Function - Graduates as an Essential Output in the Alpha Case |
|---|---|
| **A-15** | “I think what we’re supposed to be about here is producing high quality graduates, when it comes down to it, and a large part of the justification for my position is the contribution that I can make to that. A difficulty I see with being involved in a spin out is the effect it has on what is a service that I am supposed to be providing to students and that the university is supposed to be providing. I think it can be very easy to forget about that but we shouldn’t” |
| **A-11** | “Papers and research are obviously hugely important, but graduate students are essential as well in terms of what I need to be turning out in my capacity here as an academic.” |

Whether the specific reference is to the concept of ‘producing’ or ‘turning out’, these comments from Alpha case interviewees all refer to the idea of a functional output which is integral to the academic role. This role was bounded for Alpha interviewees by its functional relationship to a role with which is shared interdependence, the student role. The reciprocal nature of this relationship was significant for interviewees as they expressed not just a sense of formal obligation with respect to student interactions, but an interpretation of the relationship as one which was inherent to the core societal function of the role itself. The following comments from interviewees A-9 and A-13 illustrate the concerns prompted by the entrepreneurial role in this context:
### The Mentor Function - Functional Incongruence in the Alpha Case

| A-9 | “You know, you can create your big international reputation by developing some fascinating piece of technology and speaking at international conferences or getting your face on the TV because you’ve done such great work. But the last thing on earth any of us here want is a student to come in and feel they’ve been hard done by in a course, that they weren’t prepared or that they didn’t know this and they didn’t know this or that. Small little details like that do colour the views of a student and they can feel neglected if those aren’t looked after, you know...that’s what the students carry with them, and personally I feel very strongly that they should carry with them the experience of going through the courses as much as they should the content of the course....if you’re investing a lot of time in trying to develop that spin-out it’s hard to see how that can be maintained.” |
| A-13 | “What you would have to do is step out of the academic zone, or neglect it, and go with your single-minded commercial venture and push off, you know. So what’s constraining that? Well you could have a room in there with eight PhD students, and they’re relying on you for mentoring. And suddenly you turn around and say ‘I’m going to do my own thing’. I don’t know if that can work, that’s something I couldn’t do anyway” |

These comments highlight a sense of functional incongruence between the academic and entrepreneurial role frames for academics in the Alpha case. The mentor-student relationship was framed as an integral element of the functional legitimacy of the academic role. The entrepreneurial role frame was therefore regarded as compromising this functional legitimacy by undermining the capacity of academics to generate this output, or by its very existence challenging the social legitimacy of the mentoring function. It is important to note that for the majority of Alpha case interviewees, this perception was based primarily in speculation as opposed to experience. As such, what
it reflected was not necessarily an empirically grounded concern with the impact of entrepreneurship on mentoring, rather a reflection of embedded assumptions about what entrepreneurship meant in this respect.

Analysis of references to the same issue in the Beta case interview data underlines the significance of these embedded assumptions about the meaning of entrepreneurial behaviour. As was the case for their Alpha case counterparts, Beta case interviewees were predominantly (13) in agreement with respect to the integral nature of mentoring as a function of the academic role. The following comments from interviewees B-6 and B-9 are representative of this pattern in the data:

<table>
<thead>
<tr>
<th>The Mentor Function - Graduates as an Essential Output in the Beta Case</th>
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<tr>
<td><strong>B-6</strong></td>
</tr>
<tr>
<td><strong>B-9</strong></td>
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</table>

Perspectives in the Alpha and Beta cases diverged, however, when the implications of the entrepreneurial role frame were considered in this context. A majority of Alpha case interviewees presented the entrepreneurial role as functionally incongruent with the mentoring demands of academic work. Additionally, the presumptions of a challenge to the social value of this aspect of the role prompted a reassertion of the importance of this output of the academic function, resisting a supposed implication that the importance of students as an output was diminished within the entrepreneurial frame. In the Beta case, a majority of interviewees (13) instead described the entrepreneurial
frame as enhancing the functional effectiveness of the academic in this aspect of their work. The following remarks from B-12 and B-6 illustrate this point:

<table>
<thead>
<tr>
<th>The Mentor Function - Functional Congruence in the Beta Case</th>
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<tr>
<td><strong>B-12</strong></td>
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<tr>
<td>“I think it’s a good thing for students because it keeps them close to the real problems that are out there. If I’m working with companies on a regular basis, that focuses me towards the real problems that are out there and I can pass that on to the young people I work with.”</td>
</tr>
<tr>
<td><strong>B-6</strong></td>
</tr>
<tr>
<td>“There is an arrogance I think which you sometimes see where the applied or industry focused work is seen as less ‘academic’ and less, well, impressive I guess to be doing. But you know when it comes time to graduate the kids with the applied focus are the ones who have the really relevant knowledge and can find their place much easier. Once the basic principles are respected I think students can be in much stronger position when their work has that practical focus.”</td>
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</tbody>
</table>

In this manner, an issue which was a source of role tension in Alpha case was reframed as an enhancement of the academic role in the Beta case. This seems an important illustration of the nature and consequences of the embeddedness of an institutional role. In both cases, the mentoring function served as an important manifestation of the social purpose of both academics and the university itself. The key distinction between the two cases on the issue of mentoring was the meaning which was attached to entrepreneurship in this behavioural context. In the Beta case, entrepreneurial behaviour meant enhanced effectiveness with respect to the relationship between academic and student, whereas in the Alpha case, this same behavioural frame meant the effectiveness of this function was diminished. The functional legitimacy of the entrepreneurial role frame, and consequently its alignment and mobilising resonance for role incumbents, was therefore diminished or enhanced on the basis of the meaning which was attached to it. In the Alpha case, the pre-dominant perspective offered was
one of the entrepreneurial role frame as poorly aligned with the embedded role frame, as such its resonance was diminished. By contrast, for Beta case interviewees this alignment was self-evident, and as such the entrepreneurial role was more likely to be seen as legitimate and as normal variability within the academic behavioural paradigm.

5.2.1.4 Representational Alignment of the Entrepreneurial Role Frame - Independence

The previous sections have primarily focused on the functional dimension of the academic role frame and its effect on the perceived congruence of the entrepreneurial frame in the Alpha and Beta cases. Roles are not defined merely by function however, they also have a representational dimension which is concerned with the image and sentiment associated with the role (Turner 2006). Differentiation of roles in the representational sense is not conducted on the basis of functional statements such as ‘firemen fight fires’, or ‘nurses care for the sick’. Rather, it is conducted on the basis of value statements, such as ‘firemen are brave’, or ‘nurses are compassionate’. These representational characteristics become part of the prestige of a given social role, significant for both role incumbents and those who view the role from the outside.

Analysis of the interview data revealed the importance of these value statements for academic role incumbents in both cases. The nature of entrepreneurship, with the attendant emphasis on industrially valuable research, led interviewees to frequently raise the subject of academic independence. For interviewees in both cases, ‘academics are independent’ was a dominant representational characterisation of role incumbents. Academic independence is inextricably tied to the concept of academic freedom, and upon it rests a great deal of historical and cultural legitimacy for both universities and academics themselves (Olssen and Peters 2005).

When describing their interpretations of the implications of entrepreneurship for the academic role then, academic independence was a universally significant issue for
Alpha case interviewees, with the third mission frequently being interpreted as a manifestation of wider dangers to the maintenance of this essential role characteristic. In expressing the importance of this characteristic, interviewees often pointed to the uniqueness of the university as a site for the conduct of disinterested research, and the attendant absence of comparable roles to that of the academic anywhere else in society:

<table>
<thead>
<tr>
<th><strong>Representational Alignment - Incongruence and Academic Independence in the Alpha Case</strong></th>
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<tr>
<td><strong>A-1</strong></td>
</tr>
<tr>
<td>“I am a scientist, I am interested in scientific research and the university is the place where they do that sort of thing, and they always have done. So if you are interested in carrying out research then this is the natural place for you to be...academics have the freedom and are privileged to be able to research interesting things, and it’s the only place in society where you can do that.”</td>
</tr>
<tr>
<td><strong>A-14</strong></td>
</tr>
<tr>
<td>“After completing my Post-Doc I went into industry for a couple of years, because I thought that would be more applied and I might see more benefits from the research I was doing... it was a start-up company so at the start and we were doing lots of research and a lot of proof of principle experiments, then as we actually became successful it became more routine and a lot less interesting, for me, because it was a lot less creative and challenging, and a lot more prescriptive. So I came back into academia then because if you wanted that creative, challenging work then that’s where you would find it. And I did.”</td>
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</table>

This sense of representational differentiation from comparable societal roles is a significant factor in the persistence of social roles (Turner 2006), and as indicated by the interviewee comments, interpretations of the fundamentally distinct behaviour inherent to a role and the characteristics associated with that behaviour become an important defence mechanism for role incumbents. This was particularly evident when
interviewees characterised the third mission and its associated behaviours as being aligned to what they regarded as threats to traditional academic activity:

<table>
<thead>
<tr>
<th>Representational Alignment - Incongruence with Independence in the Alpha Case</th>
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<tbody>
<tr>
<td><strong>A- 5</strong></td>
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<tr>
<td><strong>A-12</strong></td>
</tr>
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</table>

The re-conceptualisation of the academic role within the third mission represented for these Alpha case academics a manifestation of external pressures which challenged the legitimacy of traditional academic role behaviour and its inherent values. As such, the perception of the third mission as inadequately aligned with the prevailing and legitimised academic role conception was furthered by this association of its implicit expectations with existing concerns about the defence of academic role boundaries.
The issue of independence, as a significant source of representational value for academics, was of no less concern to interviewees in the Beta case. As was the case in the Alpha interview data, Beta case interviewees were unanimous in emphasising the importance of academic independence in both thought and action. The following comments from interviewees B-10 and B-1 serve as illustration:

<table>
<thead>
<tr>
<th>Representational Alignment - Congruence with Academic Independence in the Beta Case</th>
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<tbody>
<tr>
<td><strong>B-10</strong></td>
</tr>
<tr>
<td>“The essence of the university is independent thought...that’s what makes the university different. For scientific progress to take place the freedom to conduct interesting research and to ask big questions is essential. There is no university and no real science without it.”</td>
</tr>
<tr>
<td><strong>B-1</strong></td>
</tr>
<tr>
<td>“Technology stalls without academic independence, it stops dead. Knowledge comes from the freedom to look wherever you like for new answers. Academics have to be interested in the broad, big picture. In any discipline, things very quickly come to a stop when the big assumptions are no longer questioned. You need people to constantly be challenging those assumptions and that’s what academics are supposed to do.”</td>
</tr>
</tbody>
</table>

In both cases then, independence was an important source of representational legitimacy for the academics interviewed in this study. Alignment of the relevant role frames, and the extent to which entrepreneurship served possessed mobilising resonance for role incumbents, was therefore somewhat dependent upon the congruence of the entrepreneurial role frame with the independence issue. Much as the response of Beta case interviewees to the question of mentorship, those who did not regard entrepreneurship as significantly affecting the academic role with respect to the issue at hand tended to regard it as enhancing the role in that respect. While Beta case interviewees described entrepreneurship as a means of imparting more relevant and cutting edge knowledge to students in terms of the mentorship function, they also predominantly (12) interpreted it as accentuating the independence of academics as
opposed to compromising it. The following quotes from interviewees B-2 and B-9 are examples of this interpretation:

### Representational Alignment - Enhancing Academic Independence in the Beta Case

| B-3   | “Obviously there is some danger there that some people may go too far, but in reality this isn’t a common problem. Academics value their independence and they want to strengthen it and expand it. Working with industry can help them do this because more revenue means more freedom to pursue your research.” |
| B-11  | “An academic wants to do his or her research which as much autonomy and independence as possible, but to do good research you need funding. If entrepreneurship helps to generate that funding then that’s great for the academic. That allows him to do the work he wants to do.” |

Additionally, and in contrast to the Alpha case interviewees, Beta case academics frequently (11) turned to the historical narrative of the university as evidence of the lack of threat posed by entrepreneurship to academic independence:

### Representational Alignment - Entrepreneurial History and Independence in the Beta Case

| B-9   | “What the experience here shows is that it doesn’t have to be one or the other. You can have your entrepreneurship and you can still have excellent research...Excellence in research is the most important thing and entrepreneurship makes that creativity and imagination more important, not less important.” |
| B-2   | “There will always be arguments about it but those arguments are a good thing. As far as (Beta Case) is concerned, the church has always been kept in the centre of the parish because everyone
wants that independence and that freedom to be there. This has been happening for a long time here and it hasn’t done harm to our freedom as researchers.”

These findings demonstrate the role of history in the legitimisation of social behaviour. Such tradition provides behavioural modes with a ‘taken-for-granted’ status, as a history of engagement with behaviour in a given context in itself suggests that such engagement is appropriate (Zucker 1989, Oliver 1992). History provides an impetus all of its own, and as the presented quotes demonstrate, academics in the Beta case were strongly aware of this impetus. Alpha case interviewees did not, and could not draw on such a historical narrative in their framing of entrepreneurial behaviour. As such, entrepreneurship remained for them a contested role frame, inadequately reconciled with the representational value of academic independence as it was in the Beta case. In Alpha case, the entrepreneurial role frame therefore prompted representational role concern which served to diminish its resonance, and consequently its desirability, for Alpha case academics in the context of their current roles.

5.2.1.5 Embedded Role Frame - Tension and Contradictions: Summary of Findings

This section has presented the findings of the study which show how the differential embeddedness of entrepreneurial logic in the two cases was reflected in role frames which provided very different meaning to entrepreneurial behaviour, and produced divergent attitudes towards the perceived congruence of entrepreneurial activity with the academic role. It has described the manner in which perceived contradictions gave rise to tension between the prevailing and entrepreneurial role frames in the Alpha case, with entrepreneurship consequently being identified as a source of functional and representational role concerns. These concerns, and the inadequate alignment of the entrepreneurial role frame with the academic role as they interpreted it in these functional and representational terms, diminished the mobilising resonance and desirability of entrepreneurship as a consequence. As the entrepreneurial interpretation of the academic role was identified as contradictory with respect to core values of the prevailing interpretation, it was also regarded as illegitimate in this respect.
Exploring these issues in the Beta case revealed several key points of contrast which significantly enhanced the perceived congruence of entrepreneurship with the academic role in that context. Whereas in the Alpha case the causal impetus for the emergence of entrepreneurship was predominantly regarded as being institutionally exogenous (non-academic) and reconstructive in its underlying logic, Beta case interviewees were more inclined to depict entrepreneurial behaviour in the academic context as an activity which was driven by institutionally endogenous (academic), and therefore congruent, in its objectives and values. Beta case interviewees also consistently framed entrepreneurship as being aligned with the same functional and representational values it was regarded as contradicting in the Alpha case. As such, the underlying logic of the entrepreneurial role was regarded as elaborative and representative of normal variability rather than reconstructive in the Beta case.

The key distinction between the two cases therefore, was the extent to which reconciliation of contradictions between the entrepreneurial and academic roles was embedded in the prevailing interpretations of functionally and representationally legitimate academic behaviour. In this way, role frame dynamics reflected the embeddedness of entrepreneurial logic in the micro-institutional context, and shaped the personal attitude of the interviewed academics towards the desirability of entrepreneurial behaviour. A summary of these findings is presented in table 5.2. In the next section, we will examine the manner in which functional and representational issues served as avenues of negotiation for the emergence of entrepreneurial behaviour in the Alpha case, and the manner in which points of congruence between the prevailing and entrepreneurial role frames appeared to emerge as a result.

<table>
<thead>
<tr>
<th>Table 5.2: Key Findings - Embedded Role Frame: Tensions and Institutional Contradictions</th>
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<tbody>
<tr>
<td><strong>The entrepreneurial role frame in the Alpha Case:</strong></td>
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<tr>
<td>• Was perceived as representative of managerialist or instrumentalist logic in its underlying rationale and causal impetus, and was such was weakly aligned with the embedded academic role frame</td>
</tr>
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</table>
• Was perceived as a reconstruction of academic function which diminished its mobilising resonance and its perceived desirability as a mode of behaviour

• Was perceived as incongruent with the mentoring role function which diminished its mobilising resonance and perceived desirability of entrepreneurship as a mode of behaviour

• Was perceived as representationally incongruent with the academic independence value, and this negative perception diminished the desirability of entrepreneurship as a behavioural mode

The entrepreneurial role frame in the Beta Case:

• Was perceived as representative of normative academic logic in its causal impetus and underlying rationale, and as such was strongly aligned with the embedded academic role frame

• Was perceived as an elaboration of academic function, and as such was a legitimate variation of appropriate academic activity

• Was perceived as congruent with and complementary to the mentoring role function, which enhanced its mobilising resonance and its perceived desirability as a mode of behaviour

• Was perceived as both representationally congruent with the academic independence value and a means of increasing it, which enhanced the desirability of entrepreneurship as a behavioural mode
5.2.2 Institutional Anxieties and the Entrepreneurial Resolution of Role Contradictions

The previous section has described the findings of the study which illustrated the extent to which entrepreneurial behaviour was perceived as congruent with the embedded academic role frame in the empirical cases, both in terms of the perceived causal impetus for the emergence of entrepreneurship and the functional and representational dimensions of role content. Through these findings we have seen how divergence in the degree of embeddedness in entrepreneurial logic across the two cases prompted different interpretations of the functional and representational legitimacy of the entrepreneurial role. In this section, the findings will describe the manner in which congruence between academic and entrepreneurial role conceptions appeared to emerge as entrepreneurial behaviour was identified as a means of addressing existing tensions and contradictions which were perceived as undermining the legitimacy of the academic role. In so doing the findings will address how interviewees in both cases interpreted the emergence of the entrepreneurial role as highlighting challenges to the functional and representational legitimacy of traditionalist orthodoxy, and as such undermining the tenability of traditional interpretations of the academic role.

In addressing role tenability, we are considering the costs and benefits attached to a role for a role incumbent. This balance of costs and benefits constitutes the tenability of a particular social role for individuals. As argued by Turner (2006), the role strain or tension generated by tenability costs is indicative of anxiety and frustration experienced by social role incumbents when the social adequacy of their role is called into question. Representational and functional concerns create pressure for resolutions, the achievement of which brings strategies such for role change into consideration. In describing the manner in which these issues were manifested in the interview data, this section will focus on two issues which were widely recognised as significant by the interviewed academics. Firstly, the functional public service value of academic activity, and secondly, the representational values of industriousness in the Alpha case, and the creativity and community values in the Beta case.
Analysis of the data revealed these issues to be of much importance to interviewees in their framing of the benefits provided by entrepreneurial behaviour in the context of the academic role. Concern about public service did not necessarily mean interviewees self-identified as public servants, rather that they recognised the salience of contribution to wider society as a core functional value within their conception of the academic role. Concerns about academic industriousness or creativity took on a representational character, focusing as they did on these values as important features of public perception. These issues served as key points of micro-level negotiation between traditional and entrepreneurial academic role norms in the two cases, revealing the significance of role concern resolution as a mechanism in the legitimisation of role frames embedded in novel institutional logic. The framework which emerged from analysis of these findings is presented in figure 5.2.

Figure 5.2: Institutional Anxieties: Entrepreneurial Resolution of Role Contradictions

<table>
<thead>
<tr>
<th>EMBEDDED ROLE FRAME CONTRADICTIONS</th>
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<tbody>
<tr>
<td>FUNCTIONAL ANXIETIES</td>
</tr>
<tr>
<td>REPRESENTATIONAL ANXIETIES</td>
</tr>
<tr>
<td>ENTREPRENEURIAL ROLE FRAME</td>
</tr>
<tr>
<td>FUNCTIONAL BENEFITS</td>
</tr>
<tr>
<td>REPRESENTATIONAL BENEFITS</td>
</tr>
<tr>
<td>DEGREE OF ALIGNMENT</td>
</tr>
<tr>
<td>FUNCTIONAL RESONANCE</td>
</tr>
<tr>
<td>REPRESENTATIONAL RESONANCE</td>
</tr>
<tr>
<td>PERSONAL ATTITUDE TOWARDS THE DESIRABILITY OF ENTREPRENEUR</td>
</tr>
</tbody>
</table>

5.2.2.1 Entrepreneurship and Resolving Functional Anxieties: Public Service

Impaired functionality is a key driver of change in a social role system (Turner 1990). The functionality, or dysfunctionality, of a role relates to the effect that its execution has with respect to a particular social setting or wider society in general. In outlining the conceptual and political underpinnings of the entrepreneurially oriented academic,
Gassol (2007) points to an expectation for academics to generate ‘useful’ information and ‘transfer’ it to the wider economy. Academic entrepreneurship therefore challenges the functional effectiveness of traditional academic activity with respect to the use value of the information or knowledge it generates, as well as its capacity for transferring or communicating this information or knowledge to actors external to the academy for whom it would be ‘useful’.

Analysis of the data revealed that part of the appeal of entrepreneurial logic for interviewees in this respect was its potential to connect and resonate with perceived failings of the academic role at the micro level with respect to its core aims, such as the dissemination of new knowledge for the benefit of wider society. The following comments from interviewees B-1 and B-7 highlight a universal perspective in the Beta case on the effectiveness of the traditional academic function in this respect:

<table>
<thead>
<tr>
<th>Functional Anxieties: Perceptions of Role Dysfunction in the Beta Case</th>
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<tbody>
<tr>
<td><strong>B-1</strong></td>
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<tr>
<td><strong>B-7</strong></td>
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</table>
These are acute articulations of the underlying rationale of the third mission, situated within personal experiences of traditional academia’s failings as these academics understood them. While the reference to the ‘Ivory Tower’ by interviewee B-1 borrows directly from the language of the third mission, it is perhaps more important to note that this perspective positioned industry interaction as a direct remedy to this dysfunction. For this interviewee, academic insularity was a malady for which industrially relevant research was a cure.

Beta case interviewees therefore advanced entrepreneurship as a distinct means of resolving a particular dysfunctional and contradictory element of the academic role, namely the perceived inadequacy of its service to the wider public through research activities. In the following comments, interviewees B-13 and B-12 further argue that a focus on tangible applications of research for the wider public is in fact integral to the functional legitimacy of the academic role:

<table>
<thead>
<tr>
<th>Functional Anxieties: Entrepreneurship as a Resolution of Role</th>
<th>Dysfunction in the Beta Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-10</td>
<td>“I don’t do research just so there is some number that is slightly changing that is not going to be useful in society. I mean you want to do things that are better and beyond what has been done. And if you then are able to develop it yourself that’s great, and if it is something that can be used by a big company that is also good. That’s better than it sitting on your shelf in a paper that nobody will ever use.”</td>
</tr>
<tr>
<td>B-12</td>
<td>“It is one of the core responsibilities we have. We need to do research that really benefits people and that uses scientific research in a way that makes a difference to peoples’ lives. I don’t think the university and its research should be separate from society, the two need to be closer together and this (entrepreneurship) is a good way to do that.”</td>
</tr>
</tbody>
</table>
Beta case interviewees therefore pointed to entrepreneurially oriented activities as functionally appropriate within their conception of the academic role, and highlighted the dysfunctional elements of the traditional academic orientation when articulating that appropriateness. The resonance of the entrepreneurial role frame for these academics emerged from its assumed alignment with this public service value. In this sense, entrepreneurial behaviour was framed as an activity which attended to this functionally legitimate goal.

Exploration of this perceived role dysfunctionality in the Alpha case uncovered similar attitudes (18 of the 20 interviews). As in the Beta case, entrepreneurial activities were framed as potentially enhancing the effectiveness of the academic role with respect to this particular function. As interviewees A-3 and A-8 stated:

<table>
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<tr>
<th>Functional Anxieties: Perceptions of Role Dysfunction in the Alpha Case</th>
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<tr>
<td><strong>A-3</strong></td>
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<tr>
<td>“I think there’s a large dose of hypocrisy in how academia operates in general. The journals would say that they’re spreading the knowledge as much as they can, but nobody, or at least a very limited number of people have access to those journals. It’s not good dissemination. More people read the blogs that I follow than read the journal papers that I follow, so which is contributing more? The blog that will tell you one-tenth of what the journal article will tell you, or the journal article that only one-twentieth of the people will read? I would say that closed access journals aren’t disseminating knowledge to the people who really need it. An example is public health nurses, in my area of research I’ve been reading journals for public health nurses for a long, long time. None of the public health nurses I’ve ever dealt with have ever had access to any of those journals. So I can talk to them about research that was published six years ago, and it’s new to them. That’s not dissemination, that’s a bubble.”</td>
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</table>

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“There needs to be a tangible contribution to people’s lives, I think that’s at the very heart of what academia should be about. Whether it’s answering questions that society needs answered or anticipating problems that people aren’t aware of yet, it’s about contributing something of value, you know...You can’t really say that this always happens, that’s not good enough. That’s failing in the role that you’re given and in the long term that becomes a really serious problem.”

As in the Beta case, the failure of academia to properly serve the needs of an important societal stakeholder was recognised as a critical breakdown in the functional effectiveness of the role in serving wider society. Some echoed this sentiment, but focused on the application of academic skills rather than specific outputs and argued that the emergence of the third mission agenda drew attention to a need for academics to be less rigid in their attitudes towards the utilisation of their expertise. Others still felt that the entrepreneurial frame drew attention to the inherent significance of the societal contribution of academic activity, and as such represented a mechanism through which academics could realise that objective if there was a willingness to refocus their abilities to that end. The following comments from interviewees A-6 and A-4 illustrate these perspectives:

<table>
<thead>
<tr>
<th>Functional Anxieties: Entrepreneurship as a Resolution of Role Dysfunction in the Alpha Case</th>
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<tr>
<td><strong>A-6</strong></td>
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</table>
“There is so much ability in a place like this, and I think something that’s really important for people to see is the impact that ability can have if it’s focused the right way. I think what spin-outs and commercialisation projects do is show how the local region can really benefit from the type of work that they do, you know, if they put their energy into using their work in that way.”

For Alpha based academics then, an important legitimating aspect of the third mission was its perceived capacity to directly rectify what they regarded as one of the significant dysfunctions of the academic role. An important distinction between the Alpha and Beta cases, however, was that in the Beta case these perceptions of dysfunctionality were held alongside interpretations of the academic role which regarded engagement in entrepreneurial activities as congruent and normal behaviour within that role. In the Alpha case they typically were not.

It is therefore important to note that these perspectives were not articulated in the Alpha case in the absence of role conceptions of academia that reinforced the traditional orientation, rather these apparently contradictory perspectives on the nature of the academic role were expressed simultaneously. The role dysfunctionality thrown into sharp relief by the emergence of the entrepreneurial agenda was therefore an important source of tension between the rival role conceptions in the Alpha case, representing a point of contention between the rival behavioural modes mandated by the competing institutional logic of the third mission and the traditional orientation. In this respect, these functional concerns appeared to be points of institutional contradiction which served as opportunities for institutional change.

5.2.2.2 Entrepreneurship and Resolving Representational Anxieties

Analysis of the data revealed that the legitimacy of entrepreneurial activities was recognised by interviewees in both cases as also spanning from the positive external
representation of academia entailed in engagements with industry. Turner (1990, p.88) argues that unacceptable representationality arises “when the image and sentiment evoked by the role are unfavourable.” In the Beta case, this representational enhancement was perceived as further reinforcing the legitimacy of entrepreneurship. In the Alpha case however, it instead manifested itself as potentially addressing a negative perception of academics in wider society with respect to their industriousness and the relevance of their work. As such, these unacceptable representations of academics served as point of reconciliation for the traditional and entrepreneurial behavioural modes, and therefore a point of legitimisation for entrepreneurial activities. As interviewee A-7 remarked: “The expertise in the university needs to be visible to the community...it’s a great thing for us when the public gets a glimpse of not only the research, but the level of work, the activity, you know just the sheer busyness of life here. Because I think people feel that we just do nothing here, that we doss around and we’ve three months holidays and that’s the presumption you know....Maybe something that would really address that is the links with industry, maybe they could be a vehicle for that because for people outside the university, in the ‘real world’, industry is something they identify with. They have jobs and they work in companies and if that connection was more visible to them, you know maybe they’d appreciate what we do here a lot more.”

Significantly, and quite distinct from questions of functionality, concerns over the external representation of the academic role did not concern the functional purpose of the actual activities undertaken. Rather they centred on the potential for entrepreneurial initiatives to communicate the value of the activities that academics daily engaged in. This interpretation is evident in the comments of interviewees A-19 and A-15 who acknowledged the potential for entrepreneurially oriented research to address this negative perception of academia which they regarded as being prevalent in the wider community, despite the fact that they had some misgivings about the idea themselves:
### Representational Anxieties: Industriousness as a Representational Concern in the Alpha Case

| A-19 | “There have been abuses of the system, and because there have been abuses it’s made it possible for a lot of control to be lost to those who would make us more ‘efficient’ There’s a perception out there of us just coming in for a few hours and that people are getting away with murder. Correcting that view is something that’s extremely important. No one sees me or many of my colleagues coming in here and working for 60 hours a week. But they will see your picture in the paper for developing an idea for some company. So although there may be lots of other things I dislike about that, maybe it’s what’s needed in some respects.” |
| A-15 | “I think there’s a real need for us to be more proactive in communicating to people more than anything the value of the work that we do here. Because, you know, I don’t think it is very highly valued outside of the university to be totally honest. I think people see lecturers as being on a cushy number and not rolling up their sleeves like everyone else, and fixing that impression is probably going to require doing things that maybe you are unsure about and that do represent unfamiliar territory. Commercialisation or a spin-out...does show people that serious work is being done here.” |

In enhancing or repairing the image of the academic beyond the walls of the university, this somewhat reluctant acceptance of the potential utility of third stream activities served as a legitimating frame for entrepreneurial activities. Recognition of this effect was in evidence even in the case of individual academics who strongly contested such negative representations of the academic role:
<table>
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<tr>
<th><strong>Representational Anxieties: Entrepreneurship as a Resolution of Concerns in the Alpha Case</strong></th>
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<td><strong>A-16</strong></td>
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<td><strong>A-8</strong></td>
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</table>
The characterisation of entrepreneurial activity, and its associated role behaviours, that emerges from these interviewees’ statements then is one of entrepreneurship as a useful strategy for the resolution of representational concerns regarded by role incumbents as threatening the legitimacy of the academic role. The entrepreneurial role frame was therefore interpreted in the Alpha case as a modification of the academic role boundary that was legitimated by its capacity for communicating role value to an important legitimacy source, generally conceived of here as wider society, but in essence what Deephouse and Suchman (2008, p.54) refer to as an “external audience” with whom lies the power to make legitimacy assessments.

Addressing this same question of the representational effect of entrepreneurial activities in the Beta case then, interviewees likewise pointed to the image benefits provided by successful commercial and entrepreneurial ventures to academic role incumbents in the university:

<table>
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<tr>
<th>Representational Anxieties: Perceived Benefits in Beta Case - Creativity</th>
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<td><strong>B-3</strong></td>
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<td><strong>B-5</strong></td>
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</table>
| **B-14** | “It just shows people the type of exciting work that we can do. When people read about a spin-out company that with this really interesting technology, that is a really great way to communicate
In a similar manner to Alpha case respondents then, Beta case respondents identified entrepreneurial activities as a means of demonstrating the value to wider society of the academic research conducted within the university. Rather than recognising this demonstration as directly resolving a specific representational concern however, they typically framed the representational benefits accrued as boosting the image of academics in terms of the innovativeness and creativity of their activities.

Beta case interviewees also pointed to the links generated with the local community by sustained commercialisation of academic research. These links were regarded as providing a platform for academic activity which enhanced the visibility of the intensity of research activity within the university:

**Representational Anxieties: Perceived Benefits in Beta Case - Community**

| B-15 | “One of the really nice things about how this (university-industry interaction) is organised here is how many different connections there are with local people. There’s a real effort to create forums for people in the university to interact with local business and local groups and so I think that allows them to see for themselves the way in which we are contributing to the community.” |
| B-4 | “A hugely important effect of these (entrepreneurial) activities is the way they strengthen and deepen the links between us in the university and people in the wider community. So rather than us being, you know, separate and away from ordinary people, they get to see the range of the exciting ideas we are working with here and they get a greater sense of the value of what goes on here for them.” |
The academic role was therefore regarded in the Beta case as also being representationally enhanced beyond the boundaries of the university by the attendance of entrepreneurial activity to the valued concept of contribution to, and connection with, the local community. As was evidenced in the Alpha case, interviewees focused on the impression made by such activities on significant external audiences who were regarded by interviewees as an important legitimacy source for university and for the academic role itself. An important distinction between this representational effect as it was manifested in both these cases, however, was that in the Alpha case it presented an avenue for the negotiation and expansion of a prevailing role boundary to incorporate entrepreneurial activities, while in the Beta case it reinforced the underlying legitimacy of a role boundary which had already been expanded in this sense.

5.2.2.3 Institutional Anxieties and the Entrepreneurial Resolution of Role Contradictions: Summary of Findings

This section has presented the findings of the study as they described the emergence of congruence between the academic and entrepreneurial role frames, as the interviewees interpreted them. In so doing, the findings have described the manner in which perceived functional and representational benefits appeared to serve as points for the emergence of congruence between the prevailing and entrepreneurial role frames in the Alpha case. In this sense we have seen how interviewees in both cases interpreted the emergence of the entrepreneurial role as highlighting challenges to the functional and representational legitimacy of traditionalist orthodoxy, and as such undermining its tenability.

Functional and representational role concerns related to the public service, industriousness, creativity, and community values were revealed as points of contradiction in more traditional interpretations of the academic role, with entrepreneurial behaviour being framed as a means of resolving the concerns these contradictions prompted. In this respect, the findings demonstrate the manner in which these role concerns, or incompatible pairings of role and function or role and image,
serve as opportunities for the legitimisation of novel modes of behaviour. The findings therefore demonstrate how role frame dynamics may play a crucial role in the legitimisation of entrepreneurial behaviour, and the emergence of an entrepreneurial orientation in the university. A summary of these findings is provided in table 5.3.

<table>
<thead>
<tr>
<th>Table 5.3: Key Findings: Role Anxieties and the Resolution of Contradictions</th>
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<tbody>
<tr>
<td><strong>The entrepreneurial role frame in the Alpha Case:</strong></td>
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<tr>
<td>• Was perceived as functionally enhancing the academic role through the resolution of role concerns related to the public service function, which enhanced the perceived congruence and desirability of entrepreneurship as a behavioural mode</td>
</tr>
<tr>
<td>• Was perceived as representationally enhancing the academic role through the resolution of role concerns related to the industriousness value, which enhanced the perceived congruence and desirability of entrepreneurship as a behavioural mode</td>
</tr>
<tr>
<td><strong>The entrepreneurial role frame in the Beta Case:</strong></td>
</tr>
<tr>
<td>• Was perceived as functionally enhancing the academic role through the resolution of role concerns related to the public service function, which enhanced the perceived desirability of entrepreneurship as a behavioural mode</td>
</tr>
<tr>
<td>• Was perceived as representationally enhancing the academic role through the demonstration of the creativity of academic role incumbents, which enhanced the perceived desirability of entrepreneurship as a behavioural mode</td>
</tr>
<tr>
<td>• Was perceived as representationally enhancing the academic role through</td>
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</table>
the demonstration of the value of academia to the local community, which enhanced the perceived desirability of entrepreneurship as a behavioural mode.

5.2.3 Concluding Comments: Findings for Research Question One

“How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?”

This section has described the findings of the study as they relate to research question one, thereby addressing the impact of locally embedded role frames on personal attitudes towards the desirability of entrepreneurial behaviour. In so doing, the findings have described how perceptions of role congruence or incongruence were manifested in the empirical cases, and how the differential embeddedness of entrepreneurial logic in the two cases was reflected in the framing of the perceived causal impetus for entrepreneurial behaviour, and the functional and representational legitimacy of the entrepreneurial role.

The findings described the significance of the perceived alignment of the entrepreneurial role with the interviewees’ interpretations of the academic role along these dimensions for the legitimacy and mobilising resonance of entrepreneurial behaviour. In the Alpha case, where the logic of entrepreneurship was weakly embedded, both the persistence of more traditional interpretations of the academic role and the emergence of congruence with a more entrepreneurial interpretation were manifested in functional and representational terms. While academics in the Alpha case highlighted points of functional and representational incongruence between the two role frames, they also identified entrepreneurship as a means of addressing and therefore resolving existing role anxieties.
From these findings we can therefore identify three key effects of the locally embedded role frame on personal attitudes towards the desirability of entrepreneurship in this study. Firstly, the degree of alignment of entrepreneurship with the prevailing academic role frame determined the extent to which the entrepreneurial role was regarded as elaborative, and therefore representative of normal variability, or reconstructive, and therefore challenging to the social legitimacy of the role. Secondly, weak alignment of the entrepreneurial and academic role frames prompted the identification of functional and representational contradictions which created tension between the rival role interpretations, and diminished the desirability of entrepreneurial behaviour. Thirdly, the prevailing role frames in the two cases were themselves undermined by contradictory elements which gave rise to role anxiety. These anxieties, whether representational or functional in form, accommodated the legitimisation of behavioural modes which could resolve both the anxieties and the attendant institutional contradictions.

The locally embedded role frame was therefore revealed to be not merely mechanism of institutional persistence, but also a crucial mechanism through which the micro-cognitive changes which underpin institutional transformation could take place. While the underlying logic and attendant content of the academic role frame presented a stubborn obstacle to the emergence of an entrepreneurial orientation in the Alpha case, its own underlying contradictions also served as points of negotiation for the emergence of novel behavioural modes, and interpretation of those behaviours as more desirable.

In section 5.3, we will look at the other antecedent of behavioural desirability as outlined in Krueger’s (2000) model of entrepreneurial intentions. While this section has addressed individual framing of entrepreneurial behaviour, the following section will address the significance of social norms as manifested in the attitudes and behaviours of salient others at the micro-institutional level. In answering our first research question, we have seen the effects of locally embedded role frames on the desirability of entrepreneurial action, but we must also explore the manner in which these role frames are socially reinforced, as well as modified, through micro-institutional dynamics at the micro-level. The findings presented in section 5.3 will examine this question in detail.
5.3 Dynamics of Legitimation and the Socialisation of Entrepreneurial Desirability

Section 5.3 will describe the findings of the study arising out of research question two. These findings are concerned with the manner in which desirability perceptions as they relate to entrepreneurial behaviour were shaped by social norms at the micro-institutional level. In particular, they will describe how assumptions about the legitimacy of entrepreneurship were socialised and constructed. The following paragraphs will provide a brief recap of the conceptual framework which informed the analysis conducted in answering this question, before the findings themselves are outlined in detail in the following sections.

Both the university based entrepreneurship (Clark 1998, Owen-Smith and Powell 2001, O'Shea et al. 2005, Stuart and Ding 2006, Braunerhjelm 2007, Azoulay et al. 2007, Bercovitz and Feldman 2008, Jain et al. 2009) and neo-institutional (DiMaggio and Powell 1991, Scott 1995, Greenwood et al. 2008) literatures draw attention to the role of social sanctions and rewards in the reproduction of given modes of behaviour in both organisational and institutional contexts. An organisation’s institutionally given identity creates behavioural mandates, and the social action which results can be understood as conscious or unconscious efforts to fulfil those mandates (Kraatz and Block 2008). Cultural-cognitive interpretations of neo-institutionalism emphasise the objectification of institutional norms through situated processes of social construction (Scott 1995). Through these micro-processes the legitimacy of both behaviour and social function is first established, then internalised and reinforced by social actors (Greenwood et al. 2008).

In exploring the manner in which micro-institutional dynamics shape entrepreneurial intent in the university context then, it is necessary to address the how significant legitimacy sources for academics within their local organisational context shaped their perceptions of the legitimacy of the entrepreneurial role in particular, and of the third mission in general. I will first address the awareness of interviewees in either case of significant academic role incumbents in their local environment who had adopted and
exhibited an entrepreneurial orientation within the context of that role. Such figures serve as important sources of legitimacy for behavioural modes and were influential in framing the perceived legitimacy of entrepreneurship in both cases.

Having identified distinctions in the types of role models identified by interviewees in both cases, we will then address the types of success strategies interviewees recognised as both desirable with respect to future career orientation in each case. Again focusing on the legitimacy underpinnings of both the entrepreneurial and traditional academic role conceptions, the findings will describe the functional and representational obstacles to the socialisation of entrepreneurial desirability in the Alpha case. In section 5.3.2 the manner in which role conceptions and attitudes towards entrepreneurship reinforced by peer attitudes will then be described, while section 5.3.3 will present findings related to the influence of figures invested with formal authority in both cases.

5.3.1 Salient Others and the Informal Socialisation of Entrepreneurial Norms

This section will present the findings of the study which describe the manner in which local legitimacy dynamics shaped the socialisation of entrepreneurial norms through the actions of informal salient others in the empirical cases, and subsequently influenced the perceived desirability of entrepreneurial behaviour for academics. One such category of salient others are role models, which both the neo-institutional and university based entrepreneurship literatures identify as a key factor in shaping cultural norms at the micro-institutional level. The neo-institutional literature characterises role models as important carriers of institutionally legitimated values, attitudes, and beliefs, as role model ‘status’ is primarily a consequence of the successful performance of behaviours which have institutionalised value. Accordingly, the presence or absence of 

**identifiable entrepreneurial role models** emerged in the analysis of the data as a significant underlying factor in the socialisation of attitudinal norms as they related to entrepreneurship in the empirical cases.
The distinction between the two cases in this respect held significant implications for the orientation of social norms as they related to entrepreneurship, and consequently had a significant influence on the perceived desirability of entrepreneurial behaviour in either context. We will see in the following sections how the presence of entrepreneurially successful individuals made manifest a link between entrepreneurial actions and functionally legitimate aims, *framing means-ends assumptions* and thereby shaping the prevailing institutional logic. In addition, these findings will describe the subsequent implications for the representational legitimacy of entrepreneurial behaviour, and how *functional legitimacy demonstrations* facilitated the *reconciliation of representational concerns*. Finally, these findings will address how the legitimacy of entrepreneurial behaviour *was reinforced by peer attitudes* as they informed interviewee perceptions of the social value and subsequent prestige associated with such action. The findings presented in this section will therefore present a description of how attitudes towards the perceived desirability of entrepreneurial behaviour were framed, socialised, and reinforced by dynamics of legitimation at the micro-institutional level. The framework which emerged in the analysis of these findings is presented in figure 5.3.

**Figure 5.3 Salient Others and the Informal Socialisation of Entrepreneurial Norms**
In providing individuals with shared frames of interpretation, institutions also serve as embedded systems of values which reflect underlying social goals and describe the appropriate means through which legitimate ends may be pursued (Meyer and Rowan 1977, Scott 2001). The role model as a mechanism of institutional reproduction serves as an exemplar in the enactment of institutional goals and values which have salience for institutionally embedded individuals. Role models therefore serve as the embodiment of institutionally defined measures of success, and in both their actions and status, demonstrate the functional and representational legitimacy of attendant modes of behaviour. In this respect, the presence or absence of high status individuals who engage in a given behaviour serves as a powerful cue for action as to the legitimacy and desirability of that behaviour (Scott 1995). The distinction between the two cases with respect to this issue was particularly strong. Analysis of the data from the Alpha case revealed widespread difficulty in the identification of significant role models with respect to entrepreneurial behaviour, with 17 of the 20 interviewees stating that there were few if any examples they could offer in this respect:

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<tr>
<th>Identifying Entrepreneurial Role Models - The Alpha Case</th>
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<td><strong>A-14</strong></td>
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<td><strong>A-16</strong></td>
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A small number of Alpha case respondents (3) offered dissenting views in this respect, pointing to colleagues whom they felt were strong positive examples of entrepreneurs. Interviewee A-7 remarked that “there are entrepreneurial people here, but I think they’re marginalised to some degree...I don’t think they get recognised for it.” This was a minority perspective, however, with the opinion that the university was poorly equipped in terms of entrepreneurial role models being the predominant one. Interviewee A-13, a disciplinary head, suggested that the absence of entrepreneurially oriented role models for younger academic and research staff meant that they were largely isolated from individuals who could illustrate the viability of the entrepreneurial route to them: “It depends on who they’re meeting...most of the younger researchers who come through here are just seeing the academic type guys and that’s all they know, and they’re kind of separated from that other world, you know.” The viability of entrepreneurship as a career route was understood as being diminished as a result. This perspective was reinforced when interviewees struggled to identify notable success stories in this sense:

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<tr>
<th>Identifying Entrepreneurial Role Models - Absence of Success Stories in the Alpha Case</th>
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<td><strong>A-11</strong></td>
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<td><strong>A-15</strong></td>
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In the Alpha case then, there was a notable absence of exemplary individuals who could be identified as entrepreneurial actors. We will explore the implications of this in greater detail in the following sections, but first it is important to recognise that to the
extent that high status individuals defined the academic role for interviewees in the Alpha case, that role was for the most part not defined in a form that embodied an entrepreneurial orientation. The Beta case represented a significant departure from the dynamics of the Alpha case in this respect. In contrast to their Alpha case counterparts, Beta case interviewees predominantly (14 interviews) emphasised the availability of key figures who served as powerful examples of the legitimacy of entrepreneurial ventures:

<table>
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<tr>
<th>Identifying Entrepreneurial Role Models - The Beta Case</th>
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<tr>
<td><strong>B-13</strong></td>
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<tr>
<td>“It does not seem like an unusual path to follow for me, because so many of the senior scientists have been doing this for years. Certain aspects of it can seem strange to you at first, but you just have to trust in the experienced people because they have been through it all before. You don’t have to be so concerned about it being that much of a risk, plenty of older and wiser people have done this before you.”</td>
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<tr>
<td><strong>B-12</strong></td>
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<td>“Well the senior figures have plenty of experience of this nature, and they strongly encourage it. So it does not feel in anyway like there is anything out of the ordinary about doing this yourself, on the contrary, I think that it builds an atmosphere where you feel like you need to be doing it also.”</td>
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As mentioned in the introduction to this section, figures who have ‘standing’ which arises from the organisation’s legitimating account of itself serve as powerful legitimacy sources for individual actors. The senior figures referred to in the comments above were key signifiers of the legitimacy of entrepreneurship by virtue of their institutionally given seniority. As such, and in contrast to the Alpha case, Beta case interviewees were capable of identifying entrepreneurially oriented figures who had high status and standing.
This trend was extended to the identification of notable entrepreneurial successes in the Beta case, with a majority (12) of interviewees identifying individuals who offered evidence of the benefits of entrepreneurship and demonstration of its viability as a course of action for Beta case academics:

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<tr>
<th>Identifying Entrepreneurial Role Models - Success Stories in the Beta Case</th>
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<td><strong>B-4</strong></td>
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<td><strong>B-5</strong></td>
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As Interviewee B-5 suggests, the presence of successful role models provided would-be entrepreneurs with tangible examples of individuals who had succeeded in this behavioural mode, which gave corporeal form to otherwise abstract notions of entrepreneurial success. Crucially then, Beta case interviewees could readily point to the successes of the individual examples of entrepreneurship in their immediate environment, as well as to a widespread availability of them. This served as a powerful social cue as to the legitimacy of entrepreneurship for Beta case interviewees, framing
as it did engagement with entrepreneurial behaviour as consistent with high status and
distinction in the Beta context.

While the presence of role models demonstrated the legitimacy of more entrepreneurial
outlets for research, it is important to explore in more detail how this effect was
manifested. In the next section we will examine this issue by looking at the manner in
which entrepreneurial success facilitated the re-casting of means-ends assumptions and
the implications this entailed for the micro-level logics of action.

5.3.1.2 Entrepreneurial Role Models and Embedded Means-Ends Assumptions

As described in the previous section, ‘success’ was widely recognised in the Beta case
as an important attribute of recognised individuals who served as legitimating examples
of entrepreneurial behaviour in the local context. However, it is important to ask what
kind of success? Success with respect to what goals, and what values were embodied in
the selection of these goals? In this respect, interviewees offered responses in terms of
the functional and representational costs and benefits entailed in the relevant behaviour.
For Beta case interviewees, the widespread availability of successful examples led them
to identify entrepreneurial activity primarily with the benefits accrued. Alpha case
interviewees by contrast had little in the way of legitimating evidence to point to, and
as such identified more with the perceived functional and representational costs of
entrepreneurship than with any perceived benefits. Chief amongst the values given
significance by interviewees in both cases was the representational value of expert
status and the functional value of advancing a research agenda. In the Beta case,
entrepreneurial behaviour was widely recognised as serving both of these values.
Firstly, we will look at the functionally legitimating benefit of the advancement of
research agendas:
Initially I just didn’t have the credibility to get the money I needed from the research councils. That was the reality. Instead, I went out to industry to get money, and I really started building my research group using industrial money. And then, you know, I started to get that recognition and suddenly these sources of funding were available to me too...it was acquiring funding through working with industry that allowed me to build that recognition and respect.”

“A key thing is the growth a research group can undergo if you have some real commercialisation success. With the funding you can hire more people, you can seek out more contracts, and you can do bigger and better research. Seeing that this can happen makes it very appealing, you can be one of the people with a big research group and that is something we all want”

The utilisation of entrepreneurial ventures for the purpose of growing research groups or advancing research interests was universally identified by Beta case interviewees as an important outcome of entrepreneurial behaviour. In this respect entrepreneurship, while notionally a novel course of action in an academic domain, was framed as means of pursuing an institutionally legitimate end. The legitimacy of growing a research group or advancing research was undisputed, and to the extent that entrepreneurship facilitated that goal it was recognised as functionally legitimate.

Another important dimension of this reframing process was the capacity for entrepreneurship to bestow ‘expert’ status on individuals, attaining greater legitimacy from external audiences but further legitimising them in the academic domain as well. This effect was identified by 11 of the 15 interviewees in the Beta case as a potential and valuable outcome of the entrepreneurial process, and a powerful motivating factor as a consequence:
<table>
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<th>Means-Ends Assumptions - Entrepreneurship and Reputation in the Beta Case</th>
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<tr>
<td>B-1</td>
<td>“If you see your colleagues on television, like X (academic colleague) for example who does a lot of work with industry and is always on TV, then you start to think ‘and should I not also be on TV?’ And even if you don’t want to be on TV it does start you thinking about ‘how I can I contribute and raise my profile in this way?’ How can I use this to become visible?”</td>
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<tr>
<td>B-10</td>
<td>“It can change the way you look at people, for sure. You know how they say ‘no one is a prophet in their own land?’ I think having that status as a guy with great ideas outside of the academic world changes how people see you within it. I think you can gain a lot of respect as an academic by having your ideas work in that commercial environment.”</td>
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The attainment of expert status then, and the subsequent prestige associated with this outcome, was regarded as an end which justified the entrepreneurial means in the Beta case. The demonstration of the legitimacy of entrepreneurship in the Beta case therefore had an additional representational effect wherein the desirability of this behaviour was enhanced in a manner which resonated with prevailing academic values. The logical frameworks which underpin institutions shape individual behaviour by impressing upon individual actors both the type of person they are and the type of person they want to be (March and Olsen 2005). By presenting entrepreneurship as a means of attaining the institutionally desirable status of recognised expert, it seems that an important purpose served by exemplars of entrepreneurial behaviour in the Beta case was their framing of such behaviour as a means of reaching this desirable end. The contrast between Alpha and Beta case perspectives in this respect was quite significant. Interviewees in the Alpha case did not share this perspective of entrepreneurship as a mode of behaviour and investment of energy liable to generate a significant return in either functional or representational terms. In fact, many interviewees referred to entrepreneurship as not
just an unlikely source of beneficial outcomes for their research agendas, but as actually carrying a significant opportunity cost in this respect:

<table>
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<tr>
<th>Means-Ends Assumptions - Opportunity Cost to Research Agenda in the Alpha Case</th>
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<td>A-6</td>
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<tr>
<td>“If I have something I wanted to pursue and I wanted to make work, and if I did then make it work, I would have to question whether the time invested would actually have been worth it. I think people would respect it, but I think two or three papers in high ranking journals would be respected more, and that’s the way I have to look at how I use my time.”</td>
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<td>A-10</td>
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<tr>
<td>“I remember a few years ago I was having a chat with a senior colleague, a senior academic, someone who’d know the score and know how the place works and so on. I would have been talking about the time I’d have spent working on collaborations with industry, you know, work I might have done over several years. And he commented that ‘well d’you know, it’s all great and all that, but from the point of view of publications you might have been better off spending your time here, churning out papers, rather than working on projects with industry.’ And he’s probably right. I probably would have been.”</td>
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This was an overwhelmingly dominant perspective in the Alpha case, with 18 of the 20 interviewees supporting this analysis of the functional outcomes of entrepreneurship with respect to their research agenda. This is a critical effect of the micro-institutional framing of behaviour, illustrating the manner in which local dynamics of legitimation shape entrepreneurial cognition through the framing of opportunity costs. As situated cultural norms shape expectations related to the value of entrepreneurial effort, they in turn shape its desirability. Contrasting the Alpha and Beta cases, it appeared that an important mechanism through which this effect was manifested was the reframing of entrepreneurship as attending to functionally legitimate ends as a product of the success
of high status individuals. This effect also extended to representational effects in the Alpha case with a majority of interviewees (16) regarding entrepreneurship as unlikely to offer any reputational boost in the form of institutional recognition. As interviewees A-20 and A-5 stated:

| Means-Ends Assumptions - Opportunity Cost to Reputation in the Alpha Case |
|-----------------------------|--------------------------------------------------------------------------------|
| **A-20**                   | “You have to weigh up what you get out of it, And unless you happen to strike gold, you’re better off using that time to build your publication record. When it comes down to it you would have this period on your CV where your publishing has slackened off, and that’s going to hurt you regardless of how you try to justify it as time spent trying to commercialise something.” |
| **A-5**                    | “Well promotion and advancement in general is about research. If you want to drive your career, you publish, it's about publications if you want to get ahead. If you really want to get ahead you publish in the top journals, and then people will sit up and take notice of that. Patents, yeah I think they’re regarded as something that are ok for you to have on the side. If you make money, then you will be you might be seen personally as a guy who is successful, but I think that's different to success in your scientific career. It’s not building your scientific reputation when you’re doing that, it’s something different.” |

Interviewee A-7, who had significant entrepreneurial experience of her own, dissented from the dominant view on this issue by stating that “If the research is good and if you get good results then I think people will respect it anyway”, however, other similarly oriented individuals such as interviewee A-3 felt that such respect was not likely to be attained in his current environment. As he remarked: “If you’re motivated by the idea of doing something like this then I tend to think that you have leave here to do it. Ultimately it won’t be respected...I don’t think that there’s that much appreciation for
This perspective offers an interesting insight into the impact of institutionalised norms on the desirability of engaging in a particular behaviour, depicting as it does the stark choice posed for embedded individuals between pursuing an activity which generates little by way of institutional recognition, or departing the institutional domain completely.

What it underlines, however, is the contrast between means-ends assumptions with respect to entrepreneurial behaviour in the Alpha and Beta cases. Whereas in the Beta case entrepreneurship was framed as viable means of achieving valued ends as a consequence of functional and representational legitimacy embodied in local success stories, Alpha case respondents had few success stories to draw upon and emphasised the costs of entrepreneurship as a result. In the next section, we will further examine the representational costs of entrepreneurship as they were identified by Alpha case respondents, and in so doing describe the manner in which these costs and attendant legitimacy concerns were reconciled in the Beta case.

5.3.1.3 Reconciling Representational Concerns - Pecuniary Gain vs. Autonomy

An anxiety frequently triggered by both the concept of entrepreneurship in an academic setting and the entrepreneurial university generally is that of pecuniary gain, and the stigma attached to the privatisation of gains from scientific research by academic scientists (Slaughter and Rhoades 2004, Lam 2011). Such ambiguity as to the appropriateness of a behaviour is more likely to be significant in a context wherein entrepreneurship is still relatively novel, as significant contradictions and incongruities between novel and prevailing role frames may remain unreconciled. The dissonance attached to novel behavioural frames gives greater importance to embedded socio-cultural norms, as individuals seek cues about the legitimacy of the novel behaviour from salient others in their institutional domain (Gonzales 2013). This perspective is supported in the university based entrepreneurship literature by Bercovitz and Feldman (2008) who argue that dissonance related to the legitimacy of entrepreneurial behaviour is likely to prompt greater compliance with situated academic norms. Analysis of the
data produced an interesting contrast in how this effect operated in the two cases. A significant manifestation of this dissonance for interviewees in the Alpha case was the image and sentiment evoked by the concept of academics employed by the university engaging in activities where pecuniary gain was regarded as a desirable outcome. This was widely regarded (15 interviews) as a sensitive issue and one which could potentially carry significant costs:

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<tr>
<th>Representational Concerns - Propriety of Pecuniary Gain in the Alpha Case</th>
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<td><strong>A-7</strong></td>
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<td><strong>A-19</strong></td>
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Alpha case interviewees frequently (12 interviews) pointed a high profile incident in which an academic based in the university was found to have simultaneously held a post in another HEI. The incident received significant coverage in the national media, and coloured the attitudes of interviewees towards the idea of generating supplementary income while in possession of an academic post in a public institution:
### Representational Concerns - Public Service Mandate and Pecuniary Gain in the Alpha Case

| A-11 | “There’s also the whole thing of perception. You’ve got a big negative image of this idea of being too heavily involved in this external activity. You’ve got two jobs, you know like that guy, and you’re doing this, that, and the other when you should be in here, even if you’re just looking out the window. That’s another sort of barrier I think, you’ve got administrators here who’re constantly looking over their shoulders worrying what the next story is going to be. And they’re afraid of this type of thing, they may look over to the States and say ‘ok they have much closer linkages with industry, but we can’t do that because if XXX (national newspaper) get their hands on the story, it could be a disaster.’ This thing of academics getting soft deals for licensing and so on, it’s too dangerous.” |
| A-12 | “Well if you look at what industry involvement might mean, there are problems that presents. Part of it is high profile cases like we had here a few years ago where a guy was seen to be double jobbing. It’s not policy driven as such, but you get a bad story like that and all of a sudden there’s a flurry of activity, and there’s a knee-jerk reaction. So because of something like that, you feel less encouraged to maybe even do consultancy work because of how it might be perceived.” |

Interviewees in the Alpha case regarded this particular incident as evidence of how entrepreneurship could potentially be interpreted in a similarly negative light. These interpretations were understood as having the potential to trigger negative consequences through administrative efforts to respond to public pressures. Related to these concerns about the representational propriety of engaging in activities which may reap personal pecuniary benefits were concerns about the potential for entrepreneurial activity to undermine the appearance of interviewees’ commitment to their current posts, and their attendance to collegiality. Alpha case interviews (14) revealed concerns about the potential for academics to be regarded as “not being serious” (A-7) about
their formal role, or to be seen as “taking (their) eye off the ball” (A-18) if they were committing time to entrepreneurial efforts. The following comments from interviewees A-9 and A-15 illustrate the nature of such perspectives in more detail:

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<th>Representational Concerns - Collegiality in the Alpha Case</th>
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<td><strong>A-9</strong></td>
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<td><strong>A-15</strong></td>
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Alpha case interviewees therefore recognised two distinct but similar representational costs to entrepreneurial activity in the perceived impropriety of pecuniary gain and the related concern of demonstrating weak commitment to collegiality and their organisational role. Exploring this concern in the Beta case then, it was apparent that neither of these representational costs were afforded much significance by interviewees. While interviewees acknowledged that pecuniary gain was perhaps a source of contention in the context of entrepreneurial behaviour, they regarded such concerns as largely unfounded and typically stressed that any costs were more than offset by the benefits such activities generated, particularly the funding of further research:

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<tr>
<th>Representational Concerns - Revenue as Means to Fund Research in the Beta Case</th>
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<td><strong>B-13</strong></td>
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“When a project makes money the main thing that happens with it is that it funds more research and builds research teams. The money goes into an account and the professor is free to use it however he chooses, and for the majority they use it to fund new research projects. That professor is not doing this to get rich, he is doing it so he can do better research next time. That is the main aim.”

As such, Beta case interviewees (13) tended to identify the revenue generated by entrepreneurial activities as enhancing the autonomy of researchers and consequently enabling them to secure the independence which facilitated the pursuance of their own research agenda. This autonomy or ‘freedom’ was repeatedly presented as a benefit of third mission activities which balanced any concerns related to the issue of pecuniary gain:

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<tr>
<th>Representational Concerns - Revenue as Path to Academic Autonomy in the Beta Case</th>
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<tr>
<td><strong>B-15</strong></td>
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<td><strong>B-10</strong></td>
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</tbody>
</table>

The revenue generated by entrepreneurial activities was therefore recognised as a functionally beneficial feature of entrepreneurship as a behavioural mode, absent of the representational and image based concerns which emerged in the Alpha case. Unlike
the Alpha case, the majority of Beta case interviewees (13) also presumed an absence of concern relating to the appropriateness of the distribution of any generated revenue arising out of entrepreneurial initiatives:

<table>
<thead>
<tr>
<th>Representational Concerns - Pecuniary Gain in the Beta Case</th>
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</thead>
<tbody>
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<td><strong>B-7</strong></td>
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<tr>
<td><strong>B-4</strong></td>
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</table>

The widespread evidence of the functionally beneficial nature of the entrepreneurial role therefore alleviated concerns of a representational nature on the part of interviewees in the Beta case as they related to the pecuniary gains that might accrue from entrepreneurial activities. In the Alpha case, and in the absence of such legitimating evidence, representational concerns remained quite prominent, reflecting a lack of reconciliation between legitimised interpretations of the academic role and the more novel entrepreneurial interpretation. Seo and Creed (2002) argue that institutional contradictions, inconsistencies, or tensions serve as the basis for the action which
ultimately transforms social institutions. In this sense, the tension manifested in the representational concerns which were voiced in the Alpha case appear to be an acknowledgement of contradictory ideas embedded in the third mission as a logical framework in its own right. The reconciliation of representational concerns with institutional aims in the Beta case, and the attendant reframing of entrepreneurship as a means of advancing academic autonomy, therefore appeared to be a key outcome of individual level entrepreneurial agency in that context. Demonstrations of functional legitimacy alleviated representational concerns, marking an important step in the institutionalisation of an entrepreneurial orientation.

5.3.1.4 Peers and the Framing of Entrepreneurial Prestige

While the previous sections have described the importance of role models and high status figures within the local dynamics of legitimation and the framing of means-ends assumptions for interviewees, it is also necessary to describe the influence of peer attitudes on the perceived legitimacy of an entrepreneurial interpretation of the academic role in our cases. Local peers, as a legitimacy awarding internal audience (Deephouse and Suchman 2008), serve as a source of costs and benefits for deviation or conformity with institutional norms. Exploring this issue, peer responses to behaviour revealed themselves in analysis of the interview data as important sources of cues from which individuals shaped their beliefs about the potential for entrepreneurial behaviour to enhance their standing at the local level. A majority of interviewees (18) in the Alpha case suggested that the gains accrued from entrepreneurship were outweighed by the perceived legitimacy of traditional research activities, which were generally seen as both more appropriate, and more prestigious, in terms of peer esteem. As such, peer responses to entrepreneurship were generally expected by interviewees to be marked by indifference:

<table>
<thead>
<tr>
<th>Peer Attitudes - Entrepreneurial Prestige in the Alpha Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-6 &quot;The truth is that if someone gets published in a top journal, that’s what you hear about that week. That’s the big news. You know that if...&quot;</td>
</tr>
</tbody>
</table>
you want attention that’s how you get it. I mean you might hear people talk about commercialisation or you might hear of someone far away doing it, but it’s not really on the agenda in the same way”

A-14  “You do need to be practical about things. You could take an idea to market and gain a lot from it, but would anyone really care about it when you came back?”

Regardless of the personal disposition of individual interviewees towards the worthiness of entrepreneurship as a career route, a majority indicated that their personal reputation would most likely be better enhanced amongst their peers through research rather than entrepreneurial outputs. Many interviewees (15) similarly suggested that attitudes amongst their peers towards entrepreneurial activity reflected a fundamental disconnect between official rhetoric and working reality:

Peer Attitudes - Strategic Rhetoric vs. Working Reality in the Alpha Case

A-9  “You might be seen as a useful statistic, but that’d be about the size of it as far as making a splash goes, you know. It might even be seen negatively. People are interested in things like publications and PhD students but commercialising your work isn’t going to generate much of a reaction unless you’re really successful.”

A-13  “I would say the attitude across the academic community here could be best summed up as ‘It’s kind of a waste of time isn’t it?’ People basically say to you ‘Sure aren’t you better off getting your pure scientific grant and publish your research?’ That’s really the way people look at it. If you’re a guy who can do that then that’s something valuable, trying to engage in tech transfer on the other hand is seen as a bit notional.”

This was an important manifestation of dissonance between the academic and entrepreneurial role frames in the Alpha case, with the situated attitudinal norms towards entrepreneurship rendering that role as ‘disconnected’, ‘notional’, or otherwise
illegitimate in the local context. Examining the question of expected peer responses in the Beta case, third mission activities emerged as a mode of behaviour from which interviewees expected to have their peer esteem enhanced, and did not therefore conceive of it as work to which their colleagues displayed disregard or indifference. As interviewees B-13 and B-10 stated:

<table>
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<tr>
<th>Peer Attitudes - Entrepreneurial Prestige in the Beta Case</th>
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<td><strong>B-13</strong></td>
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</table>

| **B-10** | “Commercialisation is something that is always on the agenda in our group and many colleagues of mine have been involved in spin-outs. So it is something that people care about and have opinions about and when something goes well then your colleagues are recognising that fact. If you are giving presentations, then a spin-out from your group will always get mentioned. It’s a positive thing, it shows that we are doing relevant research.” |

Contrary to interviewees in the Alpha case therefore, Beta case interviewees did not anticipate engagement in entrepreneurial projects being regarded with indifference by colleagues as such activities did not in their opinions constitute behaviour which deviated from the local norm:

<table>
<thead>
<tr>
<th>Peer Attitudes - Entrepreneurship as Normal Variability in the Beta Case</th>
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| **B-11** | “I think most of my colleagues see it as normal research, you know, it’s not like people are going to be surprised that you’re working in a

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project that is trying to commercialise its results. It is part of how research is funded and conducted here and everyone understands that. So yes, you may be doing more applied research but if you are doing good science then that does not matter. The science is what matters to people.”

B-5

“What is important to understand is that after a while, research for commercialisation just becomes research. And your colleagues as an academic will not regard it as some different or special type of research. If it is generating results, if it is funding more research, then that has the same value as what might be considered the traditional research that is more basic or fundamental in nature.”

The variation between the Alpha and Beta cases with respect to peer esteem then, centred upon two specific issues. Firstly, Beta case interviewees did not express any expectation of peer indifference with respect to the value attached to third mission oriented research, and secondly this attitude was predicated on the belief that such research would not deviate from accepted norms of behaviour for an academic in the Beta case. In essence then, entrepreneurship as a means to the attainment of academic prestige, or ‘academic capital’ as Bjerregaard (2010) defines it, was perceived as legitimate within the normative attitudinal orientation in that context. The dynamics of legitimation therefore appeared to reflect the relative embeddedness of an entrepreneurial orientation in both cases, with the divergent valuation of entrepreneurship reflecting alternative interpretations of the means through which individuals compete for capital in the academic domain (Bourdieu 1975, Bjerregaard 2010).
5.3.1.5 Dynamics of Legitimation and the Socialisation of Entrepreneurial Desirability - Summary of Findings

This section has presented the findings of the study which describe the impact of informal salient others on the dynamics of legitimation in the Alpha and Beta cases. The embeddedness of an entrepreneurial orientation was reflected in the behavioural and attitudinal orientation salient others who played a significant role in the framing of the functional and representational legitimacy of entrepreneurial behaviour. The local social audience constituted by salient others therefore served as key mechanism through which the prevailing institutional logic informed the perceived desirability of entrepreneurial behaviour.

The micro-level dynamics of legitimation influenced these perceptions in a number of important ways. Firstly, the identification of entrepreneurial role models was significant in the framing of entrepreneurial behaviour as consistent with academic prestige and status. Secondly, the social proximity of such role models was significant in the framing of means-ends assumptions through functional legitimacy demonstrations which also served to reconcile representational concerns. Thirdly, the perceived legitimacy of the value and subsequent esteem bearing nature of entrepreneurship was reinforced through the behavioural and attitudinal orientation of local peers. A summary of these findings is provided in table 5.4.

<table>
<thead>
<tr>
<th>Table 5.4: Key Findings - Dynamics of Legitimation and the Informal Socialisation of Entrepreneurial Desirability</th>
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<tbody>
<tr>
<td>The Legitimacy of Entrepreneurship in the Alpha Case:</td>
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<tr>
<td>- Was diminished by an absence of identifiable entrepreneurial role models and successes which had important signalling effects with respect to the desirability of entrepreneurship</td>
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<tr>
<td>- Was diminished by the perceived opportunity cost which undermined its</td>
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</table>

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functional legitimacy, and which was itself a product of embedded means-ends assumptions as they were framed by salient others

- Was diminished by representational concerns related to pecuniary gain and collegiality which were framed by the attitudinal and behavioural orientation of salient others

- Was diminished by perceptions of peer indifference and attendant lack of prestige which diminished its desirability as a behavioural mode

The Legitimacy of Entrepreneurship in the Beta Case:

- Was reinforced by the prevalence of identifiable role models which had important signalling effects with respect to the desirability of entrepreneurship

- Was reinforced by demonstrations of functional legitimacy which shaped means-ends assumptions as they related to the desirability of entrepreneurship

- Was reinforced by the reconciliation of representational concerns with legitimate academic norms which enhanced its desirability as a mode of behaviour in the academic context

- Was enhanced by peer enthusiasm and attendant prestige, which shaped perceptions of its desirability as a behavioural mode
5.3.2 Salient Others and the Socialisation of Attitudes by Formal Leaders

Formal leaders represent an important legitimacy source for individuals with respect to mandated and appropriate modes of social activity within the neo-institutional perspective of micro-level behaviour (Kraatz and Block 2008). Leadership, within the neo-institutional perspective, is instrumental in the protection and promotion of institutional values, and in periods of institutional change, with the introduction of new mental models which reframe new practices as attending to traditional objectives (Kraatz and Moore 2002, Washington et al. 2008). In the previous section we have examined the significance of informal legitimacy sources in successful role models and peer groups which can be understood as ‘opinion leaders’ in their own right (Colyvas and Jonsson 2011). This section specifically addresses the impact of social actors situated in formal positions of authority in the empirical cases, and as such individuals who were recognised by interviewees as reflecting the ‘official’ organisation’s evaluation of the value of entrepreneurship in their attitudinal orientations. Given that perceived desirability as a behavioural antecedent within intentions frameworks is concerned with the positive or negative nature of the expected outcomes of a behaviour, the perceived attitudes of local authority figures is a significant factor. Not only do such figures have the capability to direct organisational resources, they are also invested with powers of evaluation which have personal and professional implications for individual actors (Bercovitz and Feldman 2008).

Findings from the data as it concerns this issue was categorised into cues relating to the role expectations and evaluative role pressures interviewees regarded as being communicated to them by local leaders. Role expectations refer to objectives which role incumbents regard as appropriate in the context of their role (Shivers-Blackwell 2004), and are associated with the delivery of positive performance outcomes (Yuan and Woodman 2010). Local leadership figures are influential in determining expectations about positive work-related behaviours in organisational members who occupy subordinate positions (Pfeffer and Salancik 1975).
Evaluative role pressures relate to the immediate influence role incumbents feel is exerted upon them by local leaders and therefore serve as a mechanism for conformity with institutional objectives. As distinct from role expectations which describe those objectives which are associated with positive outcomes, role pressures describe the means through which compliance is arrived at, and through which the anticipation of regret on the part of role incumbents for the performance of illegitimate behaviours is established (Shivers-Blackwell 2004, Lonnqvist et al. 2006). Interviewees pointed to three distinct organisational levels of influential leaders in this respect, the university management team and senior administrators, mid-level organisational sub-unit (group, departmental, divisional) leaders, and immediate superiors (which depended upon their position in the university). The analysis of the data as it addressed these issues is presented in the following sections, and the framework which emerged from this analysis is presented in figure 5.4.

**Figure 5.4: Salient Others and the Socialisation of Attitudes by Formal Leaders**

![Diagram showing the relationship between salient others and the socialisation of attitudes by formal leaders.]

### 5.3.2.1 Role Expectations and Entrepreneurship as an Institutional Priority

Role expectations are derived through an individual’s accumulation of experiences in the performance of a role in a given environment (Dierdorff and Morgeson 2007). As an individual engages in interpersonal interaction in their enactment of the role,
normative expectations as to the behavioural and attitudinal requirements of that role exert considerable pressure for conformity (Katz and Kahn 1978). While we have seen in previous sections how peers and role models contribute to this process, figures invested with formal authority also contribute to the discourse which shapes the expectations attached to a given role (Mantere 2008). Looking first at the level of senior administrative leadership in the Alpha case, interviewees typically (16) pointed to the absence of figures at the university management level who could be identified as being committed to the cause of entrepreneurship. In this respect, Alpha case interviewees perceived a low level of political support for entrepreneurial behaviour, generating ambiguity as to the legitimacy of such a comparatively novel role element:

<table>
<thead>
<tr>
<th>Role Expectations - Insignificance of Entrepreneurship in the Alpha Case</th>
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<tr>
<td><strong>A-11</strong></td>
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<td><strong>A-6</strong></td>
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Other interviewees supported this interpretation by pointing to the difference between official university strategy as documented in strategic statements, and what they
identified as genuine strategic concerns. While senior administrative leadership within the organisation were generally regarded as doing little to create a sense of role expectancy with respect to third mission engagement, Alpha case interviewees (15) often felt that mid-level leadership figures were not articulating an expectation for academics to seek out and engage in entrepreneurial opportunities either:

<table>
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<tr>
<th>Role Expectations - Institutional Priorities in the Alpha Case</th>
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<td><strong>A-9</strong></td>
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<td><strong>A-13</strong></td>
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In this sense, entrepreneurship as a role expectation appeared to have undergone limited contextualisation in the Alpha case, despite its apparent prioritisation in strategic documentation as we have seen both in this and previous sections. The inherently pluralistic nature of an organisation such as a public university requires individuals who find themselves at the top (or indeed the middle) of the organisation to knit competing demands (Kraatz and Block 2008) together in order to link novel behavioural modes to pre-existing purposes (Mantere 2008). In so doing, such figures articulate the functional legitimacy of the novel behaviour and generate an attendant expectancy that engagement in such behaviour will facilitate the acquisition of greater legitimacy at the
individual level. These findings indicate that such contextualisation was not in evidence in the Alpha case.

Conversely, Beta case interviewees pointed to a much stronger sense that those in positions of formal authority in the university regarded entrepreneurial behaviour as a legitimate mode of activity in the context of the academic role:

### Role Expectations - Entrepreneurship as Complementary in the Beta Case

<table>
<thead>
<tr>
<th>B-7</th>
<th>“Well people see that there are different types of ways that they can do research...and it’s important that the influential people who are heads of divisions and the groups are supportive of this idea that the research can get outside the university. They don’t necessarily need to understand industry themselves, but they support the idea of people doing it and engaging with the outside world. That opens up the possibility.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-13</td>
<td>“With the people who are at the top in my research group, I think what matters to me in my research, at my level, is that if I am involved in a project that focuses on commercialisation then that it is as valid a way to do my research as if I was doing work that didn’t focus on that commercial application. And I would feel that this is true.”</td>
</tr>
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</table>

A key distinction between the cases therefore, was recognition on the part of (13) interviewees in the Beta case that third mission oriented research outcomes were regarded by those in positions of formal leadership as congruent with the expectations they themselves felt were associated with their academic role. Research which was entrepreneurially oriented was seen as a legitimate means of satisfying performance requirements, and entrepreneurially oriented research was therefore linked with expectations of positive performance outcomes. In the Alpha case, this functional legitimacy was not in evidence, with interviewees not regarding research
entrepreneurship as typically congruent with the spectrum of behaviours which constituted desirable role performance.

5.3.2.2 Informal Evaluative Role Pressures: Collegiality and Interdependence

Analysis of the data as it related to perceived role pressures centred on the interactional relationships between interviewees and local leaders, in terms of the behaviours which they felt were both likely and unlikely to negatively affect those relationships and produce feelings of regret on their behalf. These interactional effects are particularly significant in the socialisation of local norms, as this informal contact is the primary process through which an individual acquires and integrates into everyday practice the knowledge about what makes them an able incumbent of the role in question (Brim and Wheeler 1966, Weidman and Stein 2003). Social interdependence accentuates this effect, as the associated reciprocity necessitates attendance to shared norms on the basis of which effective coordination of work can be accomplished (Organ 2006, Dierdorff et al. 2012). As the effective performance of a role is contingent on co-workers’ effective performance of theirs, so does attendant pressure for conformity result.

The central issue in the empirical cases in this respect was the extent to which entrepreneurial ventures were regarded by interviewees as being inconsistent with effective role performance in the sense outlined, and as such were likely to produce negative evaluative consequences in the context of these interdependent groups. Within the Alpha case, interviewees predominantly (16) expressed concern for the potential of commercial or entrepreneurial research to create difficulties with respect to their involvement in broader sets of local activities, which could in turn be construed as poor collegiality on the interviewee’s behalf. As interviewees A-12 and A-14 remarked:
Informal Evaluative Pressures - Collegiality in the Alpha Case

A-14

“You do have a sense of how good a job your doing, or maybe how good a job people think you are doing would be a better way of putting it. The department head is under a lot of pressure to make sure different demands are met and we all feel it. You end up in a lot of meetings you might not be in if you had the choice but you can’t just withdraw yourself either. There’s a responsibility there to pull your weight I suppose and you only have so much time. That’s a real obstacle to developing a piece of technology to the point where you could commercialise it because you’re wrapped up in these other priorities, and you’re going to upset some people if you abandon them.”

A-12

“If I was to go to my head of school and say ‘I’m going to develop this thing and it’s going to work, I need to be relieved of my lab duties with undergraduate classes’, I know what he’s going to say, he’s going to ask me ‘how?’. You know that’s reality of the situation, the re-organisation involved in it alone would be a big deal for him. There are other factors to worry about than whatever idea you might have yourself.”

Alpha case interviewees therefore expressed concern that the time commitment of an entrepreneurial venture would require withdrawal from attendance to local level demands which they and their colleagues were under pressure to satisfy. Comments such as “You end up in a lot of meetings you might not be in if you had the choice” are indicative of interviewees’ perception of such meetings and their associated subject matter as not particularly valuable in and of themselves in the context of their role as an academic. They did value, however, local leaders’ recognition of them as good team players or reliable colleagues. It was interesting to note that these beliefs were present even in the case of junior academics who worked under the supervision of entrepreneurial figures. Interviewee A-4, for example, felt that despite having a project
leader who had himself a history of involvement in entrepreneurial activities, this same leader was quite opposed to making significant commitment to entrepreneurial ventures while occupying an academic role: “It’s alright up to a point, but he [project leader] would very much feel that you’re committed to the university as they are your employer, and to have almost another job that you’re committed to as well isn’t really appropriate, you know. And I can see his point. Yes it’s great if you develop something that’s useful and relevant and he is all for that as well, but at a certain point it’s no longer your job to be doing that. I think you have to be in one camp or the other.”

As such, these informal evaluative pressures were consistently interpreted by Alpha case interviewees as negatively impacting upon the desirability of entrepreneurial activities. This was primarily due to an expectation that local leaders in positions of formal authority would regard such activities as indicative of poor collegiality, given the assumption that entrepreneurial engagement could only come at the expense of their attendance to other local level demands. Analysis of the data in the Beta case did not reveal similar apprehensions. As referred to in the previous section, Beta case interviewees predominantly regarded those in positions of formal authority at the local level as framing entrepreneurship as a legitimate means of satisfying performance expectations. Interviewees did not therefore perceive entrepreneurship as likely to engender negative evaluative consequences with respect to themselves and those they recognised as having the authority to evaluate them:

<table>
<thead>
<tr>
<th>Informal Evaluative Pressures - Support for Entrepreneurship in the Beta Case</th>
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<td><strong>B-10</strong></td>
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<td><strong>B-3</strong></td>
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<td><strong>B-6</strong></td>
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</table>
As these comments indicate, (13) Beta case interviewees did not report concerns with respect to the presence of negative evaluative pressures which make engagement in entrepreneurial activities less desirable. On the contrary, Beta case interviewees (10) often expressed the view that such behaviour would most likely be recognised as indicative of positive collegiality, given its congruence with a well established university objective. Similarly, academics in the Beta case often suggested that congruence with understood group policy was in fact a stronger driver of participation in entrepreneurial projects than the returns that may be generated by the projects themselves:

<table>
<thead>
<tr>
<th><strong>Informal Evaluative Pressures - Collegiality in the Beta Case</strong></th>
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<td><strong>B-12</strong></td>
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<td><strong>B-13</strong></td>
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With respect to the evaluative pressures associated with the academic role then, the effect of local leaders was notably different in the Alpha and Beta cases. While Alpha case interviewees regarded entrepreneurial activity as likely to engender negative evaluations with respect to their perceived collegiality, Beta case interviewees held an
opposing view, with such activity not being regarded as likely to produce such consequences.

The key distinction between the cases was the extent to which interviewees interpreted entrepreneurship as disruptive to the interdependent social structure within which their academic work was conducted. The interpretation of entrepreneurial behaviour in the Beta case as non-disruptive in this respect, or even as representative of positive collegiality, appears to reflect the greater embeddedness of entrepreneurship as both a collective and individual academic function in that context. Dierdorff et al. (2012) support this conclusion in arguing that role behaviours which are seen as directly contributing to legitimate organisational objectives are typically perceived as representative of positive ‘citizenship’ as well. Citizenship in this respect is an analogue of academic collegiality (Macfarlane 2007), and as such the association of entrepreneurship with poor attendance to collegiality in the Alpha case appears to directly reflect the weak embeddedness of an entrepreneurial orientation in that context. Evaluative role pressures as exerted by formal leaders, albeit in an informal capacity, therefore seemed to give expression to this orientation through the fostering of role pressures which directly influenced the desirability of entrepreneurial behaviour.

5.3.2.3 Formal Evaluative Role Pressures

Having addressed the impact of informal evaluative pressures on normative attitudes towards the desirability of entrepreneurial behaviour at the micro-level in the empirical cases, we will now turn to the degree to which entrepreneurship was perceived to be a factor within formal procedures of evaluation. Multiple studies within the university based entrepreneurship literature have drawn attention to the importance of career advancement as an underlying factor in the emergence of entrepreneurial orientation in the academy, with the majority of studies highlighting it as a significant obstacle in this respect.
The findings of this study lend qualified support to this perspective, and extend it in a number of respects. Looking first at the Alpha case, interviewees generally (19) believed that entrepreneurship would not be irrelevant with respect to the promotion process. However, they also believed that it would be of relatively minor significance when weighted against research outputs. As interviewees A-9 and A-5 remarked:

<table>
<thead>
<tr>
<th>Formal Evaluative Pressures - Low Status of Entrepreneurial Behaviours in the Alpha Case</th>
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<tr>
<td><strong>A-9</strong></td>
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<td><strong>A-5</strong></td>
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Such perceptions capture the manner in which the university’s formal evaluative procedures incorporate what Oliver (1991) refers to as sanctions for non-compliance with institutional expectations. While academic scientists may recognise both the potential gains and contributions a successful entrepreneurial venture may generate, their attitudes towards the process are shaped by their perceptions of what is most valued (research achievements) within the institutionalised promotional system. This analysis is supported by interviewees’ interpretation of the significance of entrepreneurial activities within formal reporting procedures. As Krucken (2003) argues, obligations to low status functions within an institutional framework are often interpreted as concessions to bureaucratic power. While academics in the Alpha case were required to consider and report the potential entrepreneurial opportunities of their current and proposed research agendas, the weak requirement for corresponding action
was interpreted as further proof of the relatively low importance of entrepreneurial activity held. As interviewees A-12 and A-6 stated:

<table>
<thead>
<tr>
<th>Formal Evaluative Pressures - Facades of Conformity and ‘Box Ticking’ in the Alpha Case</th>
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<tr>
<td><strong>A-12</strong></td>
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<tr>
<td>“Of course, I think about the potential commercial applications, but in the official sense it’s mainly lip service. You fill that section out mainly because it’s there, it’s a necessary step.”</td>
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<tr>
<td><strong>A-6</strong></td>
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<tr>
<td>“It’s necessary box-ticking. It does show the increased importance of thinking about your research in this way, but if you’re going to do that you’ll do it anyway. It being an administrative requirement doesn’t make much difference in that regard.”</td>
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This ‘box-ticking’ appeared to be what Hewlin (2003) refers to as a ‘facade of conformity’, where false representation is made with respect to the individual’s embracing of a given value. This is an important mechanism through which academics manage the dissonance of apparently contradictory values in their local environment (Stormer and Devine 2008). While the presence of entrepreneurial considerations in activity reporting procedures is typical of interventionist, top-down approaches to cultivating academic entrepreneurship, the interpretation of them on the part of the academic faculty as largely ceremonial procedures served to reinforce normative attitudes towards the relative value of entrepreneurial activities.

These comments point to a fundamental challenge which faces the early stage entrepreneurial university. Such universities are confronted by significant barriers which are embedded in the formal university structure (Philpott et al. 2011). While the establishment of highly visible structures such as a technology transfer office in the Alpha case university demonstrated a structural adaptation to the entrepreneurial norm, this act also enabled existing university evaluative procedures to largely go on with ‘business as usual’ (Krucken 2003). Reconfiguration of powerful organisational structures such as promotional procedures represents a much more significant challenge
to the core values and activities of the organisation. The barrier to entrepreneurship which the promotional procedures present in the Alpha case is an important manifestation of the tension between the contending institutional logics of academic entrepreneurship and traditional academia. As argued by Kraatz and Block (2008), such tensions are acutely felt in organisations that sit upon cultural and political fault lines, a fitting description of early stage entrepreneurial universities such as the Alpha case.

In some respects, perceptions of the value of entrepreneurial activities in the context of career progress were similar in the Beta case. Interviewees were keen to assert the primacy of research outputs as the primary determinant of eligibility for promotion, regardless of their personal disposition towards the value of third mission activities:

“The day that somebody is appointed here as a professor, and is told that it is very important that they create spin-outs, licensing agreements, patents whatever, that’s the day when this university is going to be killed. I still insist that, you know, that is not our primary goal. What you do in terms of spin-out creation and everything like that needs to be the side result of good science and not the goal. That sort of activity is important, but by itself, I don’t think that’s ever going to get you promoted and it shouldn’t.” (B-2)

A key distinction in the attitudes of interviewees in both cases however was the prevailing view in the Beta case of the complementarity of traditional and third mission research outputs. As described in the previous section, Beta case interviewees regarded third mission activity as consistent with legitimate role expectations, and therefore consistent with the established aims of the university. This perspective was underpinned by the influence of figures in formal positions of authority on the role expectations and evaluative role pressures interviewees experienced. As such, while Beta case interviewees universally acknowledged the primacy of research outputs in attaining promotion, the prevailing view in the Alpha case of third mission outputs as largely irrelevant in this respect was not in evidence:

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<th>Formal Evaluative Pressures - Substantive Complementarity in the Beta Case</th>
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then you’re in trouble. This is a reason to not give you a permanent position or to not give you tenure. At the same time if you are ok in those areas, and in addition you’re able to generate successful outputs in this third mission area, then you become the most liked candidate. So obviously the first two are killers, but in that third area of service commercialisation is really recognised too.”

“Well research is always going to be number one, you’re an academic after all so that’s what advancement in academia is going to depend on. But you can see that being involved in entrepreneurial or commercialisation activities is not going to mean you can’t also be a successful academic. Lots of guys here have shown that and, you know, the two are not exclusive. If I want to get promoted, and I have done good research, then it’s going to count in my favour if I have been successful in commercialisation as well.”

While Beta case interviewees expressed an understanding of the ‘rules of the game’ within academia which paralleled those amongst Alpha case respondents, the ‘rules’ in their institutional context had been augmented to a degree which was sufficient for the consideration of time invested in third mission activities as time well spent. Or at least, time not wasted, as was the dominant view in the Alpha case with respect to the issue of promotion. This reflects much of what we have seen in previous sections of this chapter, as entrepreneurship has in both the functional and representational sense was widely interpreted as consistent with academic norms and values in the Beta case. As the findings in section 5.3.1 demonstrated, the presence of socially proximate high status figures who could be regarded as entrepreneurially oriented was itself a significant factor in the legitimisation of entrepreneurial behaviour. The presence of such figures may also play a part in interpretations of formal evaluative pressures for academics at the micro-level, as their presence may well moderate perceptions of entrepreneurship as somewhat irrelevant to career advancement.
5.3.2.4 Salient Others and the Socialisation of Attitudes by Formal Leaders -
Summary of Findings

This section has presented the findings of the study which describe the impact of social actors situated in formal positions of authority on the perceived desirability of entrepreneurial behaviour. The significance of such figures emerges from their powers of evaluation which may have personal or professional consequences for individual academics, as their administration of organisational resources. Within the neo-institutionalist perspective of leadership, the primary function of such individuals is their role in the protection and promotion of institutional values, and as such their framing of organisational objectives.

The findings of this study have described two different mechanisms through which formal leadership figures played an important role in the local dynamics of legitimation and shaped the perceived desirability of entrepreneurial behaviour. The first of these was the communication of role expectations to academics, and the attendant shaping of the perceived nature of positive behavioural and attitudinal performance of their roles. In the Alpha case, what emerged from the findings was evidence of weak contextualisation of entrepreneurship by local leaders, despite its apparent prioritisation in strategic documentation. What this revealed was a significant shortcoming in the linking of collective purpose with entrepreneurial action in the Alpha case, and an associated absence of expectation that entrepreneurship was tightly linked to positive role performance. By contrast, Beta case interviewees typically regarded local leaders as framing entrepreneurship as legitimate in this respect.

The second dimension of the part played by formal leadership figures in the local dynamics of legitimation was their framing of evaluative role pressures. The findings demonstrated that informal evaluative pressures with respect to entrepreneurship were tied to notions of collegiality in the Alpha case, with entrepreneurial behaviour being identified as potentially disruptive to the interdependent social structures they inhabited. Such disruption on their behalf was regarded as something which would pose
negative consequences with respect to their relationship with the figures who organised these structures. In the Beta case, the more substantial embeddedness of entrepreneurship as an organisational objective was expressed through evaluative role pressures which reflected this entrepreneurial orientation, with the same fears of poor collegiality being absent.

Finally, exploration of formal evaluative pressures as they related to normative expectations with respect to requirements for career advancement revealed both consistency and contrast in the two cases. In both the Alpha and Beta cases, the primacy of research in career progress was universally recognised. Where the cases differed was the perception of attention to entrepreneurial activity as a ‘facade’ in the Alpha case, whereas in the Beta case it was perceived as largely complementary with traditional activities. In the Beta case therefore, the greater prevalence of high status figures whom themselves had displayed an entrepreneurial orientation appeared to have the additional effect of enhancing the perceived relevance of entrepreneurship within formal evaluative procedures in that context. A summary of these findings is provided in table 5.5.

### Table 5.5: Key Findings - Salient Others and the Socialisation of Attitudes by Formal Leaders

<table>
<thead>
<tr>
<th>The perceived desirability of entrepreneurship in the Alpha Case:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Was diminished by perceived performance expectations as communicated by local authority figures, which framed entrepreneurship as a low level performance priority</td>
</tr>
<tr>
<td>• Was diminished by informal evaluative pressures as communicated by local authority figures, which framed it as indicative of weak adherence to collegial obligations</td>
</tr>
<tr>
<td>• Was diminished by its perceived irrelevance to formal career advancement, which prompted facades of conformity as opposed to substantive</td>
</tr>
</tbody>
</table>
The perceived desirability of entrepreneurship in the Beta Case:

- Was not diminished by performance expectations as communicated by local authority figures, which framed it as a complementary institutional priority

- Was not diminished by informal evaluative pressures as communicated by local authority figures, through which it was framed as consistent with collegiality

- Was not diminished by perceptions of irrelevance to formal career advancement, as entrepreneurship was framed as consistent with high status through socially proximate examples

5.3.3 Concluding Comments: Findings for Research Question Two

“How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?”

This section has described the findings of the study as they relate to research question two, thereby addressing the manner in which local legitimacy dynamics shaped the perceived desirability of entrepreneurial behaviour in the empirical cases. In so doing, the findings have described how embedded attitudes with respect to the legitimacy of entrepreneurship in the academic context were socialised through salient others in both a formal and informal capacity, and as such they have demonstrated how the entrepreneurial orientation of the embedded institutional logic was reproduced and reinforced at the micro-level of analysis.
The findings reveal the significance of role models in this process, as the presence or absence of identifiable entrepreneurial role models appeared to play a key role in both the framing of means-ends assumptions and the reconciliation of representational concerns. In this sense the role model operates as an exemplar of institutional goals and values which have salience for institutionally embedded individuals. The presence of entrepreneurial role models in itself demonstrated the legitimacy of entrepreneurially oriented research in the empirical cases. This demonstration had the effect of framing entrepreneurship as a means of both advancing a research agenda and acquiring status as an ‘expert’ in the Beta case. This was an important point of intersection between entrepreneurial and academic norms in the Beta case and had a significant effect on the expected outcomes of entrepreneurship. In the absence of comparable evidence of the functional value of entrepreneurship in the form of success stories or role models, Alpha case interviewees typically emphasised the opportunity cost of entrepreneurship instead.

Exploring representational concerns, those which were primarily related to image and sentiment values, the findings showed that entrepreneurship triggered concerns related to collegiality and the appropriateness of pecuniary gain in the Alpha case. In the Beta case, embedded assumptions as to the functional legitimacy of entrepreneurship alleviated such concerns, with the revenue generated by entrepreneurship being reconciled with academic norms through its framing as a path to greater autonomy for academics. This pattern was continued in the examination of the effect of peer attitudes, as the relatively low levels of legitimacy were reflected in an expectation of indifference on the part of Alpha case interviewees with respect to the attitudinal orientation of colleagues towards entrepreneurial ventures. In the Beta case, a much stronger expectation of enhanced prestige was in evidence.

Exploration of the influence of those figures who occupied positions of formal authority revealed the impact of role expectations and evaluative role pressures on interviewee perceptions of the desirability and legitimacy of entrepreneurship. Neo-institutionalism postulates that formal leaders are primarily tasked with the protection and promotion of institutional values, and the findings suggest that role expectations
and evaluative role pressures are two important mechanisms through which this task is manifested. The findings showed local leaders to be significant in the contextualisation of entrepreneurship as a mode of behaviour that was compatible with role expectations, and as such representative of legitimate and positive role performance in the context of the academic role. They also revealed the significance of informal and interactional relational pressures in this respect as they are manifested in anticipated informal evaluations of performance in an academic context. Finally they showed how the embeddedness of an entrepreneurial orientation was reflected in formal evaluative role pressures, framing entrepreneurship as complementary to formal career advancement in the Beta case, and as largely irrelevant in this respect in the Alpha case, prompting ‘facades of conformity’.

Sections 5.3.1 and 5.3.2 therefore reveal a number of powerful mechanisms through which the embeddedness of an entrepreneurial logic shaped the perceived legitimacy and desirability of entrepreneurial behaviour at the micro-level in the university context. They show that micro-institutional dynamics are of much significance in the emergence, or non-emergence, of entrepreneurial propensity and as such demonstrate a number of mechanisms through which cultural-cognitive structures enabled or constrained entrepreneurial thinking and action in the empirical cases. The study therefore offer a range of insights into the significance and operation of local legitimacy dynamics with respect to the proliferation of entrepreneurial desirability, and consequently into the emergence and cultural-cognitive underpinnings of the entrepreneurial university itself.

In the next chapter, we will focus on the mechanisms which impacted upon the feasibility based antecedents of entrepreneurial intent in the empirical cases, switching our attention to how self-efficacy and collective-efficacy perceptions were shaped by the micro-institutional context for action.
6.1 Introduction

Having analysed the findings of the study as they relate to desirability based antecedents of entrepreneurial intent in the previous chapter, chapter six will describe the research findings as they relate to the underpinning elements of academics’ feasibility perceptions in the empirical cases, namely perceived self-efficacy and perceived collective-efficacy. In so doing, this chapter will explore the mechanisms through which the feasibility perceptions of academics with respect to entrepreneurial behaviour were shaped by micro-institutional dynamics in the study. From the discussion of the literature in chapter three, we have seen that from a neo-institutional standpoint, efficacy perceptions can also be understood as being critical to engagement in entrepreneurial acts, and can therefore also be recognised as central to processes of institutional persistence and transformation. Efficacy perceptions are fundamental to the motivational force of a given mode of behaviour, given the significance of these perceptions in the mobilisation of effort in the pursuit of particular scenarios and the performance of attendant behaviours (Bandura 1977). In this chapter, the manner in which embedded assumptions in the prevailing institutional logic shaped feasibility perceptions, and consequently revealed the embeddedness of entrepreneurial logic in the Alpha and Beta cases will be described in detail. A recap of the guiding research questions for this chapter is provided in table 6.1.

<table>
<thead>
<tr>
<th>Research Question 3</th>
<th>How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?</th>
</tr>
</thead>
</table>
6.2 Entrepreneurial Self-Efficacy and the Institutional Context

In proposing their model for the cognitive underpinnings of institutional persistence and change, George et al. (2006) point to the significance of anticipated control as a critical dimension within which assessments about environmental features are made in an institutional context. The extent to which individuals come to regard such features as presenting opportunities within which they can advance self-interest with a strong degree of control or vice versa in large part dictates the degree to which individuals will engage in non-isomorphic (entrepreneurial) or isomorphic (non-entrepreneurial) behaviours. The control construct is closely aligned with the self-efficacy construct as it is represented in behavioural intentions frameworks (Ajzen 2002), and with self-efficacy as it is understood within entrepreneurial intentions models in particular. Self-efficacy and control perceptions, and the manner in which they are constructed at the
micro-level, are therefore of great significance to the cognitive underpinnings of the entrepreneurial university (Etzkowitz 1998, Bercovitz and Feldman 2008, Prodan and Drnovsek 2010). Consequently, the mechanisms through which these perceptions are socially constructed and attitudes towards given behaviours are reinforced are significant manifestations of the cultural-cognitive elements of the prevailing institutional order (Scott 1995).

The embeddedness of an institutional logic is best understood in terms of how it makes sense to embedded individuals (Thornton and Ocasio 2008), or in other words, how conclusions which align with it are contradicted or reinforced through mechanisms in the individual’s environment (Weick 1995). What is addressed here is how conclusions about self-efficacy were drawn by the interviewees in the empirical cases, and how plausible assumptions about the feasibility of entrepreneurial behaviour were framed and reinforced in their respective universities.

Analysis of the data in the Alpha and Beta cases gave vibrant illustration to the outlined conceptual framework. Three distinct mechanisms were observed which influenced the self-efficacy and control perceptions of the interviewees, namely vicarious experience, verbal persuasion, and perceptions of interpersonal control. These mechanisms served as significant sources of cues for interviewees with respect to their entrepreneurial self-efficacy, and as such emerged in the data analysis as central to the process through which plausible conclusions about the feasibility of entrepreneurial behaviour were formed in those environments. Interviewee assumptions about the potential for entrepreneurial action to present opportunities within which personal efficacy could be expected were underpinned by these mechanisms, with significant consequences for their entrepreneurial propensity. The framework which emerged from analysis of the data is presented in figure 6.1, and these issues as they emerged in the data will now be described in detail.
6.2.1 Self-Efficacy and Vicarious Experience

As outlined in the previous chapter, the perception of entrepreneurial activities as a means of enhancing interviewees’ careers was a significant legitimising factor in the context of the Beta case. Behavioural decision theory points to enhanced control over one’s activities as an important output of entrepreneurial activities, and equally the perception of mastery and control over a given domain is likely to encourage risk taking behaviour in that context (George et al. 2006).

What emerged in the analysis of the data in both the Alpha and Beta cases was evidence of a relationship between interviewee perceptions of likely control over an entrepreneurial endeavour and their expressed sense of the feasibility of entrepreneurial activities. In both cases, the presence or absence of positive vicarious experience was presented as an important consideration in the interviewees’ expected control over the outcome of an entrepreneurial initiative. Vicarious experiences, those in which an individual with whom the observer closely identifies performs well in an activity, are an important factor in the development of the observer’s self-efficacy with respect to given modes of behaviour (Bandura 1977). This process is also central to the sense-making activities through which institutional logic provides cues for action, as sense-making itself is grounded in such processes of identity construction (Weick 1995).

The impact of vicarious experience, therefore, was to shape the degree to which interviewees internalised an interpretation of academics as competent in the domain of entrepreneurship. Three distinct issues emerged in this respect which were common to both cases, the degree to which vicarious experience prompted an internalisation of assumptions about academics which were consistent with either self-efficacy or self-inefficacy, the manner in which vicarious experience informed assumptions about the feasibility of balancing the demands of academic and entrepreneurial activities, and the extent to which interviewees externalised the characteristics of entrepreneurially oriented actors through stereotyping. These issues are outlined in the following
sections, and the framework which emerged in analysis of the data is presented in figure 6.1.

**Figure 6.1: Self-Efficacy and Vicarious Experience**

![Diagram showing the framework of Micro-Institutional Dynamics, Socialisation and Reinforcement of Embedded Assumptions, Vicarious Experience, and Self-Efficacy and Control Perceptions]

**6.2.1.1 Internalisation of Efficacy Forming Assumptions**

The cultural-cognitive tradition of neo-institutionalism postulates that institutional norms are objectified and become part of a shared and socially constructed reality for embedded individuals through the socialisation of attitudes and beliefs in a given institutional context (Scott 1995). A central objective of neo-institutionalism, therefore, is to examine how social phenomena are institutionalised and socially reinforced (Greenwood et al. 2008). The entrepreneurial university is an important example of such a phenomenon as the institutionalisation of an entrepreneurial culture is itself directly concerned with the manner in which the requisite entrepreneurial orientation is socially constructed, internalised by individual actors, and socially reinforced.

Analysis of the data in the Alpha and Beta cases point to the significance of vicarious experience in this process, with interviewees in both cases providing perspectives on
their anticipated efficacy in an entrepreneurial venture which was informed by the experiences of socially proximate others. Illustrating this point are the following comments from interviewees A-4 and A-5, who suggest that the difficulties faced by colleagues of theirs in the development of entrepreneurial projects reflected a lack of competence on the behalf of individuals such as themselves in the domain of research commercialisation:

| Vicarious Experience - Internalising Self-Ineffficacy in the Alpha Case |
|-----------------------------|--------------------------------------------------------------------------------|
| **A-4**                    | “I would wonder if my mind is wired for it you know, marketing and trying to sell an idea and things like that. I see people really struggle with that sort of stuff and it’s understandable because that’s just not the type of work they’re trained for. You’re used to communicating with people who’re familiar with your field, and when you go from that to trying to communicate really technical ideas to a non-expert audience, it’s just really difficult to do that well you know. I wouldn’t be confident in my own ability to do it.” |
| **A-5**                    | “A few guys who would be colleagues of mine would have looked into trying to get pieces of technology to that level alright, but you know I think there are just an awful lot of obstacles to get past when you’re coming from an academic environment. Just going by the issues they ran into I would question how easy it is for us to just transfer our skills to that world. You know it is possible that it’s something we’re not cut out for.” |

Such perspectives were widespread in the Alpha case, with 14 of the 20 interviewees linking the difficult experiences of others to assumptions about their own aptitude for entrepreneurial behaviour. For the other 6 interviewees, mastery experiences (either in the industrial or academic context) where they had personally experienced success in the pursuit of entrepreneurial behaviour, or positive vicarious experience gained through an academic role model early in their career appeared to diminish this effect. In the main, however, the vicarious experiences of Alpha case interviewees appeared to
prompt an internalisation of negative assumptions about the capabilities of academics in the context of an entrepreneurial venture. As a consequence of their vicarious experiences, their comments revealed their subsequent difficulty in the visualisation of themselves as performing competently in an entrepreneurial role.

This represented a significant contrast between the Alpha and Beta cases. While Beta case interviewees similarly regarded academics as having a unique domain of competence, they were not limited in their capacity to perceive of entrepreneurial activities as a feasible behavioural mode by an absence of vicarious experience. The majority of the Beta case sample (12) could point to individuals with whom they felt they could identify who had performed positively in the entrepreneurial domain. In addressing the issue of their self-efficacy in an entrepreneurial role Beta case interviewees typically presented the positive experiences of colleagues as evidence of their own capacity for successful engagement in entrepreneurial ventures. Interviewee B-10 acknowledged the focused nature of his competences in the following comment, but nevertheless pointed to the successes of fellow academics as an affirmation of his own scope for entrepreneurial behaviour: “I think of myself as a scientist, and scientists are good at certain types of tasks, analysing problems, coming up with solutions and that sort of thing. So running a company, and you know, trying to find a market for a product and get investors and so on is not my area of expertise. But if the idea is good you see that people learn and adapt to those challenges and there are ways of getting past them. Lots of people do it and people I have worked with have done it so I feel that if I had the right idea it’s something that I could go and do at some point.”

Such comments serve as an illustration of the impact of vicarious experience on the self-efficacy of individuals with respect to given behaviours. While B-10 did not self-identify as an entrepreneurial or commercially minded individual in a manner which was significantly different from Alpha case interviewees, his self-efficacy was clearly impacted by the experiences of academics who were identified as being comparable to himself. We can see this mechanism at work in the following quote from interviewee B-13, who states that in the event of novel research having been developed, the success
The successful performances of individuals with whom the interviewees closely identified was therefore a significant factor in their internalisation of efficacy enhancing or diminishing assumptions, and consequently their expectation of mastery, in an entrepreneurial scenario. The greater prevalence of entrepreneurial behaviour in the local context of Beta case interviewees facilitated the accumulation of vicarious experience and appeared to enhance their efficacy-based assumptions with respect to those behaviours. While Beta case interviewees similarly identified the distinct challenges of the entrepreneurial process, the experiences of individuals comparable to themselves in overcoming them heightened their expectation of positive performance should they engage in such a process themselves. By contrast, the absence of such vicarious experience in the Alpha case had a diminishing effect on the self-efficacy of interviewees with respect to entrepreneurial behaviours, prompting them to internalise assumptions that negatively impacted their expected mastery of the challenges entailed in such a process.
6.2.1.2 Feasibility of Balancing Academic and Entrepreneurial Roles

One of the major issues identified across both cases with respect to entrepreneurial activity was the difficulty of managing the competing demands of the entrepreneurial and academic roles. In this sense, the impact of vicarious experience was to frame the feasibility of this challenge for the observing individual. The teaching, research, and administrative demands faced by academics often makes the prospect of the additional workload entailed in entrepreneurial ventures distinctly unattractive, and one of the key operational barriers to entrepreneurial behaviour (Cunningham and Harney 2006). This concern was widely acknowledged in the empirical cases. Vicarious experience, however, appeared to shape the extent to which the interviewees regarded this particular barrier as one they could overcome. Interviewee A-13 demonstrates this point by alluding to his perception of academics as possessing insufficient capability to successfully engage in an entrepreneurial endeavour, based on his recollection of vicarious experience which reinforced this perspective:

| Vicarious Experience - Reinforcing Perceptions of Barriers in the Alpha Case |
|---|---|
| A-13 | “Well several of my colleagues would have developed good ideas, good patents, and I would have experienced this myself as well, where they try to get it to go somewhere and nothing ever comes of it. There's no one to help you push it and you're left with too much to do. For the academic, not only does he have to teach, do the research, propose the patents, but he has to get out and sell it commercially as well. And we just don’t have the bandwidth to do that, so it kind of dies, you know.” |

As was the case with the internalisation of efficacy enhancing or diminishing assumptions, mastery experiences were an important mitigating factor in the perceived relevance of negative vicarious experiences to interviewees’ own expectations of competence in an entrepreneurial venture. In the main, and similar to interviewee A-13, Alpha case interviewees related an absence of vicarious experience which suggested
that individuals like themselves could overcome the challenge of balancing academic and entrepreneurial demands, with 15 of the sample making reference to this issue.

Academics in the Beta case were similarly cognisant of the challenge posed by this barrier. As was the case with their Alpha counterparts, the administrative workload attached to both roles struck them as a particularly troublesome issue, with the demands on their time being of particular concern. For the most part, however, Beta case academics were less likely to characterise the balancing barrier in the same stark terms as was in evidence in the Alpha case. While never trivialising the issue, positive vicarious experiences were widely referenced (11) as a form of proof that although difficult, the balancing of academic and entrepreneurial activities was something which could be achieved. Interviewee B-12 and B-7’s comments serve as an example of such perspectives:

<table>
<thead>
<tr>
<th>Vicarious Experience - Framing Barriers as Surmountable in the Beta Case</th>
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<tr>
<td><strong>B-12</strong></td>
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<tr>
<td>“Look there is no easy way to do it, you are under a lot of pressure as it is in your normal day-to-day work. You have your regular research, you have your post-graduate students who need your time as well, and if you have teaching too then that's another factor you have to manage. The administration which goes along with all of those tasks takes a lot of time. But that doesn't mean that it's impossible. In this university I can tell you that people who have been successful in entrepreneurial projects had to overcome those challenges too. It is part of the process. Of course it wasn’t easy but you can find a way around those challenges if you really want to do it.”</td>
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<tr>
<td><strong>B-7</strong></td>
</tr>
<tr>
<td>“A colleague of mine recently developed a piece of technology and it did quite well and it has helped to fund several other projects, but he had to overcome that problem of finding a balance first and that was a big challenge for him. But, you know, where there’s a will there’s a way. If you want the prize at the end of it then you have to be willing...”</td>
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</table>
An important effect of vicarious experience in the studied universities, therefore, was its role in the framing of the feasibility of overcoming a fundamental barrier to entrepreneurial behaviour, namely the balancing of the competing demands of the traditional academic role and the entrepreneurial role. The significance of this barrier and the extent to which it was perceived as manageable was socially reinforced through the experiences of socially proximate others, which had the ultimate effect of reinforcing the efficacy enhancing or diminishing assumptions of the interviewees.

### 6.2.1.3 Stereotyping Entrepreneurs

Human beings tend towards stereotypes in order to cope with the unfamiliar and to externalise unfamiliar characteristics (Welter 2012) and, as Weick (1995) argues, the process through which individuals make sense of their complex environments is simplified by the stereotyping reflex. In this respect, the cultural-cognitive dimension of institutions plays an important role by framing behavioural norms in a manner which links them to familiar values and objectives. Institutionally novel behaviours, by contrast, are objectified as characteristic of individuals who depart from some institutionalised norm, thus protecting institutionalised assumptions and expectations about the typical behaviour of embedded individuals. A primary function of institutions is their maintenance of normal modes of behaviour through various mechanisms, which in turn allows for the predictability which facilitates cooperation. Institutionalised assumptions, therefore, serve to frame behaviours as either characteristic of normal variability or outright deviation. Bridging the gap between the two is the task of the institutional entrepreneur.

Analysis of the data points to the important role that vicarious experience plays in this process, complementing findings in the previous chapter which point to the importance of functional legitimacy demonstrations in legitimising and rendering desirable the
entrepreneurial role. These findings add to this picture by describing the manner in which the lack of ‘evidence’, or vicarious experience of successful entrepreneurial efforts precipitated an attribution of success, or potential success, to individuals who were marked by ‘difference’ and departed in some way from the academic norm. The unfamiliarity of entrepreneurship which this situation engendered prompted a large number of the Alpha case sample to stereotype the academics who possessed the competence to succeed in an entrepreneurial venture. In this respect, the majority of Alpha case academics (16) offered comments which externalised the characteristics of a successful entrepreneur. As interviewees A-18 and A-16 stated:

<table>
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<tr>
<th></th>
<th>Vicarious Experience and Stereotyping Entrepreneurs in the Alpha Case</th>
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<tbody>
<tr>
<td><strong>A-18</strong></td>
<td>“It’s just a different skill set, a different mindset even I think. In this university at least I don’t really see a lot of evidence that academics can do this sort of thing well. I think academics are suited to certain types of problems and the business world is something very different. Can you succeed at something like this, can you create a successful spin-out? Yeah I think that’s possible, but I think it takes a certain type of person to do that. Someone with a different mentality and outlook to the average academic I think.”</td>
</tr>
<tr>
<td><strong>A-16</strong></td>
<td>“I do think it takes a particular type of person to do it, you know, some people just have the right attitude and the right mentality and it works for them, or they can make it work in a way that the rest of us probably couldn’t. On a personal level I haven’t seen much evidence that your typical academic can do this thing and be really successful at it.”</td>
</tr>
</tbody>
</table>

Such perspectives are consistent with the vicarious experiences construct as represented in the literature, with interviewees not only assuming diminished self-efficacy as a direct consequence of the absence of positive vicarious experiences with respect to entrepreneurial modes of behaviour, but also assuming a significant departure in terms of characteristics, competences, and attitudes from themselves on the part of individuals...
who may perform well in that capacity. Entrepreneurially oriented academics are in this sense stereotyped as deviations from the norm, with their characteristics externalised by observers. In this respect, stereotyping serves as an institutional defence mechanism, with cognitive distance being created between entrepreneurial success stories and embedded individual actors. The entrepreneur, from this perspective, is cast in the stereotypical mould of rugged individualist.

This was a significant point of contrast between the two cases. Unlike the majority of the Alpha case sample, Beta case interviewees generally did not regard entrepreneurial individuals as typically ‘different’ in the sense so predominant in the Alpha case interview data, with 13 of the 15 academics interviewed offering a distinct interpretation to the Alpha case interviewees in this respect. As a university with a more established entrepreneurial focus, entrepreneurial behaviour was less unfamiliar to embedded academics, and as such appeared to lessen their tendency to externalise entrepreneurial traits. Interviewee B-5 offers an illuminating comment in this respect:

<table>
<thead>
<tr>
<th>Vicarious Experience and the Familiarity of Entrepreneurship in the Beta Case</th>
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<tbody>
<tr>
<td><strong>B-5</strong></td>
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</table>

The established entrepreneurial focus in the Beta case was manifested in this respect by the availability of vicarious experience, which contrasted the relative unfamiliarity of entrepreneurship in the Alpha case. Consequently, vicarious experience served to remove the ‘mysteriousness’ of the entrepreneur and the entrepreneurial process, and ultimately to make entrepreneurial activities a more identifiable mode of behaviour. As entrepreneurial actors were rendered less different and more comparable to Beta case academics, the self-efficacy perceptions of individual actors were enhanced by those
vicarious experiences. Most importantly, vicarious experience rendered the stereotyping reflex unnecessary for the construction of a plausible picture of entrepreneurship.

6.2.1.4 Self-Efficacy and Vicarious Experience - Summary of Findings

Analysis of the data revealed that vicarious experience of the entrepreneurial efforts of socially proximate others was a significant mechanism through which academics in both cases formed self-efficacy perceptions. Through its impact on the internalisation of efficacy enhancing or diminishing assumptions, its reinforcement of assumptions about the challenge of balancing academic and entrepreneurial demands, and its impact on the extent to which entrepreneurial actors were stereotyped as atypical, vicarious experience appeared to reflect the embeddedness of an entrepreneurial logic in both cases and consequently shape the entrepreneurial orientation of the interviewed academics. A summary of these findings is provided in table 6.2.

<table>
<thead>
<tr>
<th>Table 6.2: Key Findings - Vicarious Experience and Entrepreneurial Self-Efficacy</th>
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<tbody>
<tr>
<td>Negative, or absence of positive, vicarious experience in the Alpha Case:</td>
</tr>
<tr>
<td>• Prompted internalisation of efficacy diminishing assumptions which framed entrepreneurship as less feasible course of action</td>
</tr>
<tr>
<td>• Reinforced perceived difficulty of balancing academic and entrepreneurial roles which framed entrepreneurship as a less feasible mode of behaviour</td>
</tr>
<tr>
<td>• Prompted stereotyping of entrepreneurial actors as atypical individuals who differed significantly from themselves</td>
</tr>
</tbody>
</table>
Positive, or absence of negative, vicarious experience in the Beta Case:

- Prompted internalisation of efficacy enhancing assumptions which framed entrepreneurship as a more feasible course of action

- Framed the challenge of balancing entrepreneurial and academic role demands as manageable, which framed entrepreneurship as more feasible course of action

- Rendered entrepreneurial actors as identifiable, and as such enhanced perceptions of self-efficacy as they pertained to the feasibility of entrepreneurial action

6.2.2 Self-Efficacy and Verbal Persuasion

The second mechanism which emerged as significant in the formation of self-efficacy perceptions during the data analysis was verbal persuasion and its impact on interviewee expectations of control in the context of an entrepreneurial project. Individuals who have received persuasion in a verbal form of their capacity for the successful performance of given tasks are “likely to mobilise greater sustained effort” than if such persuasion has not been experienced, or has taken a negative form (Bandura 1986, p.400). Such interpersonal support from socially proximate others plays an important role in shaping beliefs about self-efficacy as they relate to target activities, and in addition is an essential means through which expression is given to cultural norms. As such, verbal persuasion is a key mechanism in the socialisation and reinforcement of orientation of behaviour at the micro-institutional level.

As verbal interactions about professional activities are most frequently engaged in with socially proximate peers and colleagues (Tschannen-Moran and Woolfolk Hoy 2007),
verbal persuasion serves as an important mechanism through which the reciprocal determinism inherent in structure-agency perspectives operates (Bandura 1982, Garud et al. 2007). The embeddedness of an entrepreneurial orientation in the institutional logic of a particular environment therefore impacts upon the behavioural intent of individuals through verbal interactions which reflect this orientation (Powell and Colyvas 2008, Thornton et al. 2011). Analysis of the data points to two key aspects of the influence of verbal persuasion on self-efficacy perceptions in the empirical cases, their impact on assumptions of personal competence in entrepreneurial modes of behaviour and their impact on an objectified perception of the feasibility of an entrepreneurial venture. These findings are outlined in the following sections, and the framework which emerged in the analysis is presented in figure 6.2.

**Figure 6.2: Self Efficacy and Verbal Persuasion**

![Figure 6.2: Self Efficacy and Verbal Persuasion](image)

### 6.2.2.1 Verbal Persuasion and Perceptions of Entrepreneurial Competence

An important effect of verbal cues revealed by analysis of the data was the manner in which interviewees pointed to verbal interactions as typically having influenced their
perceptions of personal entrepreneurial competence in some sense. These interactions were related as being typical of the attitudinal orientation of other actors in the university with respect to entrepreneurial activity. Looking first at the Alpha case, the majority (17) of the sample offered the perspective that verbal cues on the subject of entrepreneurship were predominantly negative in nature, with doubts generally being expressed as to the suitability of academics to the demands of such a venture. Two illustrative comments are offered here by interviewees A-1 and A-11:

### Verbal Persuasion and Perceptions of Entrepreneurial Competence in the Alpha Case

| A-1 | “I had an idea to do something which I’ve since gone in another direction with and I did give serious consideration to trying to develop it into a viable business which I think would have been useful for people and would possibly have generated a modest number of jobs, but the sense I always got when I spoke to people here about was that it wouldn’t work. And maybe they were right, but maybe if I had gotten that little bit of positive feedback I might have been more inclined to try. I had run a business before but I guess I started to get the impression that it was harder as an academic for various reasons, and I lost faith in the whole idea in the end.” |
| A-11 | “I was trying to get something off the ground with a few other guys and the reaction I got from people who are, I suppose, situated in an administrative capacity here wasn’t exactly overwhelming. I wasn’t slapped on the back and told I was well able for it if I could put it that way.” |

The perceived absence of positive verbal persuasion as to their capacity to successfully commercialise an idea had a notable effect on the self-efficacy of Alpha case interviewees and their perception of their likely mastery of an entrepreneurial venture. Notably in interviewee A-11’s case, the negative tone of verbal interactions appeared to have a moderating effect on his industrial experience. As was the case with vicarious
experiences, however, instances of personal mastery with respect to entrepreneurship in the academic context tended to reduce the significance of verbal interactions. As interviewee A-7 stated “You won’t be overwhelmed with encouragement around here, but when you’ve been through it before you tend to play less attention to other people’s negativity I think.”

Analysis of the Beta case interviewee data reveals verbal cues as another significant point of contrast between the two cases with respect to the formation of self-efficacy perceptions, with 12 of the 15 academics interviewed relating positive experiences in this respect. As such, analysis pointed to a clear distinction in the embeddedness of positive attitudes towards the entrepreneurial competence of academics. Beta case interviewees did not describe their experiences as having been universally positive, rather that the tone was generally one which reassured their self-efficacy perceptions in this respect.

<table>
<thead>
<tr>
<th>Verbal Persuasion and Perceptions of Entrepreneurial Competence in the Beta Case</th>
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<tr>
<td><strong>B-9</strong></td>
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<td><strong>B-6</strong></td>
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</table>

These comments reflect an important element of the relationship between context and cognition in the entrepreneurial university. Verbal cues, while less significant than vicarious experience in the formation of self-efficacy perceptions, nevertheless serve as
an important mechanism through which propensity to engage in certain behaviours is shaped. As such, they are a significant manifestation of the embedded cultural logic in an individual’s environment, and are therefore an important link between this logic and the cognitive processes which underpin behaviours. These findings reveal such an effect by demonstrating the impact interviewees related verbal interactions as having on their perceptions of entrepreneurial self-efficacy.

6.2.2.2 ‘Objective’ Feasibility of Entrepreneurial Ventures

As distinct from perceptions of personal entrepreneurial competence, analysis of the data also points to the impact of verbal cues on the interviewees’ perceptions of the ‘objective’ feasibility of entrepreneurial ventures. What distinguishes this issue from perceptions of entrepreneurial competence is the external rather than internal focus of these verbal cues, serving as they did to inform interviewee self-efficacy through their framing of the feasibility of the act, rather than referring to the interviewee’s own competences. The academics interviewed provided numerous interesting perspectives on this matter. The strategic use of their time in the pressurised environment of academia was a key priority for all the individuals interviewed, and contemplating entrepreneurial activities therefore prompted them to ‘sound out’ respected and familiar colleagues about the nature of the process. Interviewees related a variety of responses, with the general distinction between the two cases being the characterisation of the entrepreneurial process as difficult but manageable in the Beta case, and just plain difficult in the Alpha case. The quotes from interviewees A-14 and A-18 below are representative of the perspectives offered by 13 if the 20 interviewees in the Alpha case:

<table>
<thead>
<tr>
<th>Objective Feasibility of Entrepreneurial Ventures in the Alpha Case</th>
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<tr>
<td><strong>A-14</strong></td>
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</table>
“Some people might like the idea you know, but a lot of people would be frightened by the sheer difficulty of the whole process. Sometimes I think the more you talk to other people about the possibility of commercialising something the more you get put off by it. It just seems like obstacle after obstacle you have to get past.”

Similar to the patterns uncovered in analysis of the vicarious experiences of interviewees, several factors appeared to nullify the negativity towards entrepreneurship Alpha case academics experienced in the university. Prior experience of commercialisation, personal links with either industry or successful entrepreneurs in other universities, or strong relationships with TTO personnel moderated the impact of negative verbal cues in individual cases (4). For example, interviewee A-3 referenced prior start-up experience as an important counterbalancing factor for him: “If you listened to people around here you’d never go near it, but, I mean I’ve been there and while it can be a tough experience to get a business up and running, you can do it if you approach it properly.” The majority of the sample, however, tended to reference the negative tone of their conversations with socially proximate figures in the university as reinforcing their feasibility based perceptions of the entrepreneurial process.

As mentioned, Beta case interviewees provided more positive accounts of local attitudes towards the feasibility of an entrepreneurial project. This is not to say that the challenges posed by the formation of a spin-out, for example, were downplayed or trivialised. Rather, the analysis points to a broadly coherent framing of entrepreneurial acts as feasible, if difficult. The quote from B-4 below illustrates this perspective:

| B-4 | “People are pretty realistic about how challenging something like a start-up is. Anyone who doesn’t see it as a big challenge probably doesn’t fully understand what’s required. But is it possible? Yeah, I think people you talk are generally optimistic that it is. Sure, some |
Verbal persuasion therefore manifested itself as an important factor in the shaping of objectified perceptions of the feasibility of entrepreneurial ventures in the Beta case, with the implications for self-efficacy having a positive effect on entrepreneurial orientation. Interestingly, some Beta case interviewees (8), particularly those in more advanced stages of their academic careers, emphasised the importance of giving verbal encouragement in the stimulation of entrepreneurial activity. Interviewees B-5 and B-3 offer some illustrative quotes in this respect:

<table>
<thead>
<tr>
<th>Verbal Persuasion and Creating a Supportive Culture in the Beta Case</th>
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<tr>
<td><strong>B-5</strong></td>
</tr>
<tr>
<td>“Encouragement is a crucial thing. Risk taking is not something that comes easily to most people, maybe even less easily for academics, but if people who you respect are telling you can do something then you start to think ‘I can do it’. And if you have a little success and people congratulate you then you really believe it. That is something that’s really important here, if you encourage people then you never know what they might do.”</td>
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<tr>
<td><strong>B-3</strong></td>
</tr>
<tr>
<td>“Success develops a sense of belief, and that belief spreads and people start to believe in their own ability to do something different as well. This is not the most entrepreneurial country in the world, but when people see their colleagues do something like that then they say ‘why not me?’ And their colleagues say ‘Yes! You should try it.’ And that helps confidence which is such an important thing when you try something new.”</td>
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This seemed to encapsulate an important aspect of the relatively stronger cultural orientation towards entrepreneurial behaviour in the Beta case. Verbal encouragement
is a significant mechanism in the socialisation of attitudes to new group members, and as such it serves as a key element in the reproduction of institutionalised norms, values, and assumptions. While we have seen in the previous chapter how the desirability of entrepreneurial behaviour was informed by a variety of communicative processes, the significance of verbal interactions with respect to self-efficacy is their role in the social reinforcement of entrepreneurial orientation through the collective framing of the entrepreneurial act as objectively feasible. As alluded to by interviewee B-5, verbal persuasion takes on additional importance in the case of novices who have not accumulated mastery experiences in a given task. While those mastery experiences renders the feedback of others less significant for habitual practitioners of a behaviour, those engaging in an activity for the first time are much more influenced by the opinions of significant others when assessing their likelihood of success. The presence of encouragement and positive feedback underpins the belief which leads people to take the risks that lead to successful commercialisation.

### 6.2.2.3 Self-Efficacy and Verbal Persuasion - Summary of Findings

Analysis of the data revealed that verbal cues with respect to entrepreneurial activity as provided by socially proximate others was a significant mechanism through which academics in both cases formed self-efficacy perceptions. Through their impact on perceptions of entrepreneurial competence, and their reinforcement of assumptions about the objective feasibility of the entrepreneurial act, verbal cues appeared to reflect the embeddedness of an entrepreneurial logic in both cases and consequently shape the entrepreneurial orientation of the interviewed academics. A summary of these findings is provided in table 6.3.

<table>
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<tr>
<th>Table 6.3: Key Findings - Verbal Persuasion and Entrepreneurial Self-Efficacy</th>
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<td><strong>Negative, or absence of positive, verbal cues in the Alpha Case:</strong></td>
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<tr>
<td>- Diminished perceptions of entrepreneurial self-efficacy and as such</td>
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</table>
**diminished anticipated control in an entrepreneurial scenario**

- Objectified entrepreneurial venture as a relatively less feasible course of action in its own right

**Positive, or absence of negative, verbal cues in the Beta Case:**

- Enhanced perceptions of entrepreneurial self-efficacy and as such enhanced expectations of control in entrepreneurial scenarios

- Objectified entrepreneurial venture as a relatively more feasible course of action in its own right

- Were seen as an important element of a supportive entrepreneurial culture, and as such reflected the embeddedness of an entrepreneurial orientation

### 6.2.3 Interpersonal Control Perceptions and Self-Efficacy

As interviewees discussed their own domain of competence, their contemplation of entrepreneurial modes of behaviour prompted both implicit and explicit acknowledgement of the important role to be played by other actors in the entrepreneurial process. Actors identified included industry partners, venture capitalists, market analysts, and technology transfer professionals. Such interaction is a key dimension of social action. An individual is required to develop social relationships with other actors if they are to successfully perform certain behaviours, and in addition they must establish the pre-eminence of their interests through their social interactions with these ‘others’ (Paulhus 1983). Entrepreneurial behaviour adds significant ambiguity to this process, as individuals must cross conventional boundaries in establishing novel behavioural patterns (Kahn et al. 1964, Von Emster and Harrison 1998).
This was reflected in the data in the interviewees’ expected capacity for the successful cultivation and management of social relationships which they identified as integral to an entrepreneurial project. As a consequence it seemed central to their assessment of the feasibility and controllability of such projects in their entirety. The following sections will describe two aspects of the collected data as they related to expectations of interpersonal control, the perceived importance of interpersonal control itself, and the local environmental availability of mechanisms which would enhance these expectations. The framework which emerged from the analysis of these findings is presented in figure 6.3.

Figure 6.3: Interpersonal Control Perceptions and Self-Efficacy

6.2.3.1 The Challenge of Interpersonal Control

Eighty-six percent of the total number of academics interviewed in both the Alpha (17) and Beta (13) cases acknowledged the importance of establishing and maintaining relationships with non-academic actors in the pursuit of entrepreneurial opportunities. Across both cases, interviewees expressed a desire for potential entrepreneurial ventures to be guided and to some extent directed by individuals who possessed certain types of business expertise, in particular expertise which related to marketing
(including market analysis) and financial proposals and planning in an enterprise setting. These activities corresponded with perceived short-comings in the skill sets of the academics themselves. For both samples, the establishment of a relationship with such individuals represented either a critical pre-condition to the success of an entrepreneurial initiative, or a significant obstacle to that same success. Illustrating this point are the following comments from interviewee A-12 and interviewee B-10:

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<tr>
<th>The Challenge of Interpersonal Control in the Alpha and Beta Cases</th>
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<td><strong>A-12</strong></td>
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<td><strong>B-10</strong></td>
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A variety of issues emerged as being of concern to the interviewees in this respect, for some interviewees, the challenge of managing partner expectations was most
significant, while for others, it was the extent to which they could control the direction in which their research was developed while collaborating with non-academic actors.

For the interviewees, these issues were ultimately unified by an underlying concern about their capability to maintain control of the entrepreneurial project, to the extent that they felt this was desirable and necessary. An important mitigating factor in these concerns which was present in both cases was prior experience of commercial ventures in an academic context, or recent industrial experience in an industry sector closely associated with their own research interests. While the challenge of building and maintaining mutually beneficial relationships was no less significant for interviewees that fitted this profile, such interviewees were more likely to regard themselves as proficient in this respect due to the social capital accumulated.

6.2.3.2 Interpersonal Control and Local Support Infrastructure

Having described the salience of interpersonal control for the interviewed academics in their contemplation of entrepreneurial scenarios, this section will outline the nature of embedded assumptions in both cases as they related to the manner in which this particular concern was exacerbated or relieved by the local context. While there was a strong degree of consistency across both cases with respect to the apprehension felt by academics in building relationships with non-academic actors, there was significant difference in the extent to which they felt they could relieve this concern through both locally available support mechanisms, and locally embedded networks of expertise. In essence, the situation of the interviewee in either the Alpha or the Beta case strongly correlated with the extent to which they believed they could manage this particular obstacle.

Beta case interviewees typically regarded themselves as being capable of accessing networks and support mechanisms in the local environment which would help them overcome the interpersonal control obstacle. While a number of the sample (4) did not regard local support infrastructure as particularly significant either way, due to their personal accumulation of social capital through previous collaborative experiences with
non-academic actors, for those without such personal networks the option of accessing either infrastructural supports, or locally embedded entrepreneurial networks appeared to diminish the significance of this concern. Interviewees B-7 and B-10 offered some illuminating comments with respect to this particular issue:

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<tr>
<th>Interpersonal Control and Local Support Infrastructure in the Beta Case</th>
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<td><strong>B-7</strong></td>
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<td><strong>B-10</strong></td>
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These comments illustrate a shared assumption which was evident in analysis of the Beta case data (all interviews) with respect to the challenge of interpersonal control, that their capacity to develop the requisite relationships for entrepreneurial behaviour was enhanced by both locally embedded networks and local infrastructural support mechanism which could facilitate the cultivation of these relationships. Two elements of the local context were significant to Beta case interviewees in this respect, the formal university entrepreneurial support structures, and the informal but socially embedded networks of entrepreneurially oriented individuals, with the latter perceived as compensating for perceived shortcomings in the former. The taken-for-grantedness of the underlying assumption, that there was significant scope for resolving interpersonal control issues, ultimately enhanced expectations of control in the context of an entrepreneurial venture.

Analysis of the Alpha case data points to this assumption as an important lynchpin in the formation of self-efficacy perceptions for interviewees. As outlined above, the issue of interpersonal control held significant salience for Alpha case interviewees, and as such was a significant concern in their perceptions of the feasibility of entrepreneurial behaviour. Like similar academics in the Beta case, some Alpha case interviewees who had a personal history of entrepreneurial activity in an academic context placed less emphasis on the characteristics of the local environment in this respect. In the main, however, the perspectives offered by interviewees in the Alpha case (17) indicated an underlying assumption that the requisite mechanisms for resolving their interpersonal control concerns were not readily available in the local environment. Interviewees A-6 and A-8 offer two illuminating opinions:

<table>
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<tr>
<th>Interpersonal Control and Local Support Infrastructure in the Alpha Case</th>
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<tr>
<td><strong>A-6</strong></td>
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</table>

252
made a lot of money. But he got the supports he needed and he got those people, and that was crucial. He got the help he needed to find those people and that was so important because if you don’t have that then it all comes back onto the academic, because if the right person isn’t there then you have to do it yourself, you have to build up the product and the value proposition and that just kills you because you don’t have the knowhow to do that. If the university can’t provide that sort of support then you’re not going to pull it off.”

A-8

“When it comes down to it, you’re either going it alone or looking outside the university for that support. I don’t think you get the same access to people here that you might get in the US for example, where it would be quite normal for you to spend time more actively working with industry, consulting and maybe being involved with a company, and that obviously broadens the network of people you can work with if you wanted to develop an idea of your own. I don’t think I could have that same support network here, I don’t think the university would give me the freedom to develop it. Without the necessary people you end up investing enormous personal effort that’s often completely fruitless, or you have the half-hearted involvement of people who you’re not really on the same page with.”

The first of these comments draws particular attention to the role of organisational context in shaping the individual academic’s sense of interpersonal control over the entrepreneurial process. While interviewee A-6 had the positive vicarious experience of the success of his acquaintance to draw on as evidence of the feasibility of a spin-out project, the fact that his acquaintance was operating in an organisational context which departed from his own (in terms of the support structures perceived to be in place) diminished the extent to which he identified with that experience. As such, the local context within which interviewee A-6 would initiate such a venture was identified as a significant factor in limiting his sense of interpersonal control should he engage in such behaviour. The critical actors and associated relationships required were not elements
he believed he could acquire in the manner of his successful acquaintance given his assessment of the support structures in place.

Such localised challenges in the development of necessary relationships were recognised across the Alpha case sample, with a minority regarding their accumulation of social capital through past industry experience as compensating for organisational shortcomings. These challenges took the form of few networking opportunities, lack of training with respect to the selling of ideas to investors, and poor relationships with administrators whose cooperation would be required in establishing the flexibility needed to launch a project. As interviewee A-8’s above comment demonstrates, the focus with respect to the development of important relationships often centred on an assumption that local obstacles made this challenge particularly difficult to overcome. Because many Alpha case interviewees did not perceive a ready availability of mechanisms which could facilitate their cultivation of productive relationships with actors who were integral to the process, their overall sense of control and mastery in an entrepreneurial venture was diminished. In contrast, a majority of Beta case interviewees interpreted the local environment as compensating for their own deficiencies in the necessary boundary spanning competences required for a project’s success. In the absence of such confident assumptions, Alpha case interviewees lacked the same sense of interpersonal control. This compounded the absence of vicarious experience and verbal persuasion Alpha case interviewees themselves experienced, and consequently diminished their expectation of control over entrepreneurial activities as a whole, ultimately impacting negatively on their propensity for entrepreneurial action.

6.2.3.3 Summary Comments - Interpersonal Control Perceptions and Self-Efficacy

Analysis of the data revealed that interpersonal control was a significant factor in interviewee assessments of the feasibility of entrepreneurial actions in both cases. The findings therefore provide insight into how academics perceive the challenge of developing relationships with non-academic actors in the pursuit of entrepreneurial ventures, highlighting the significance of the perceived feasibility of this important
social dimension. The key distinction between the Alpha and Beta cases as represented in interviewee comments was the perceived availability of access to either embedded networks or entrepreneurial support mechanisms which would enable them to perform competently in this crucial aspect of entrepreneurial behaviour. The impact of the divergent assumptions outlined was to either enhance of diminish the expected control interviewees anticipated as experiencing in an entrepreneurial venture, which in turn informed the perceived feasibility of the entrepreneurial act. A summary of these findings is provided in table 6.4.

<table>
<thead>
<tr>
<th>Table 6.4: Key Findings - Interpersonal Control and Entrepreneurial Self-Efficacy</th>
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<tr>
<td><strong>Interpersonal Control in the Alpha Case:</strong></td>
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<tr>
<td>• Was recognised as a key challenge of entrepreneurship</td>
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<tr>
<td>• Was not regarded as a challenge which could readily be resolved by local support mechanisms</td>
</tr>
<tr>
<td><strong>Interpersonal Control in the Beta Case:</strong></td>
</tr>
<tr>
<td>• Was recognised as a key challenge of entrepreneurship</td>
</tr>
<tr>
<td>• Was a challenge which could potentially be resolved through accessible mechanisms in the local environment</td>
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</table>

6.2.4 Concluding Comments: Findings for Research Question Three

“How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?
This section has outlined the study’s findings as they relate to research question three. The findings described the manner in which self-efficacy enhancing or diminishing assumptions were formed in the empirical cases, highlighting three key mechanisms which served as significant sources of cues for interviewees as to their self-efficacy in an entrepreneurial venture. These mechanisms were vicarious experience, verbal persuasion, and interpersonal control, each of which played an important role in the formation of interviewee self-efficacy perceptions, and ultimately in the construction of plausible assumptions about the feasibility of entrepreneurial behaviour.

The findings therefore demonstrate the impact of the university as a context for action on the cognitive processes which underpin a key antecedent of entrepreneurial intent, namely perceived feasibility. The prevalence and embeddedness of an entrepreneurial orientation in the Alpha and Beta cases was manifested through the outlined mechanisms, thereby reinforcing attitudes towards the entrepreneurial act. Consequently, the significance of vicarious experience, verbal persuasion, and expectations of interpersonal control was their shaping of interviewee willingness to undertake the non-isomorphic action inherent to institutional entrepreneurship. As such, these mechanisms were critical elements of the cognitive infrastructure which underpinned the entrepreneurial orientation of the universities in the empirical cases.

The next section of the dissertation will address the second base element of the perceived feasibility antecedent as represented in the Kruger’s (2000) intentions framework, namely collective-efficacy perceptions. Whereas research question three has addressed the impact of the local logics of action of the self-efficacy perceptions which inform the perceived feasibility of the entrepreneurial act, collective-efficacy perceptions are concerned with assumptions about the nature of other local actors whose assistance may be required. The findings of the study as they relate to the issue of collective-efficacy perceptions will now be described.
6.3 Collective-Efficacy and Institutional Trust

This section describes the findings of the study which arose out of research question four. These findings describe the influence of micro-institutional dynamics on the perceived feasibility of entrepreneurial behaviour as it was shaped by collective-efficacy perceptions in the empirical cases. The following paragraphs will provide a brief recap of the conceptual framework which informed the analysis conducted in answering this question, before the findings themselves are outlined in detail in the following sections.

The primary focus in analysis of the data as it related to collective-efficacy perceptions was the issue of institutional trust dynamics. As they pursue goals, organisations require coordinated effort that mandates the emergence of organisational principles and logics (Ouchi 1980). Trust itself serves as an organising principle which underpins cooperation, and as a result, influences organisational performance as it pertains to organisational goals (McEvily et al. 2003). Our understanding of the emergence and contestation of new organising principles and institutional logics is fundamental to our understanding of the micro-foundations of institutional persistence and change (Townley 2002). In an institutional context, trust as it relates to expectations about the behaviours of others, is therefore fundamental to the emergence and contestation of both values and the appropriateness of organisational goals (Sonpar et al. 2009).

The significance of such expectations about others is greatly enhanced in the context of activities which are dependent on the transfer of knowledge across conventional relational boundaries (Levin and Cross 2004). In the analysis of the data arising out of research question four, they emerged as particularly significant in shaping interviewee beliefs about the capacity for university structures to deliver supports regarded by many interviewees as underpinning their own performance in an entrepreneurial initiative. Two elements of the trust construct were identified in analysis of the data as driving interviewee beliefs in this respect, namely competence and relational based trust perceptions. The relevant findings will be outlined in detail in the following sections.
6.3.1 Collective-Efficacy and Competence Based Trust

Competence, or ability, based trust relates to the characteristics which shape the perceived trustworthiness of an actor to perform well in a given domain (Mayer et al. 1995). In the context of institutional change, the extent to which a change agent demonstrates competence influences the extent to which trust will ensue and resources will be mobilised in support of that change (Sonpar et al. 2009). In this context such mobilisation is understood as the commitment of effort at the level of the individual academic to behaviours which serve the aims of the third mission, as it is impacted by the enhanced sense of control academics perceived as enjoying over an entrepreneurial process when they trusted the competence of university based actors who were tasked with the support of entrepreneurial activities.

In the analysis of the interview data, competence based trust in university based agents for the support of entrepreneurial activity emerged as a significant factor in shaping the attitudes of interviewees towards the feasibility of its attendant behaviours. Two overarching issues emerged across the data in both cases as especially significant: perceptions of the TTO’s levels of organisation and behavioural consistency, and perceptions of the TTO’s track record in terms of its overall outputs. These issues broadly aligned with Braithwaite’s (1998) exchange trust norms of order and performance track record as manifested by the target actor in their organisation, leadership, and historical outputs. Perceived congruence with these critical values therefore served as an important pre-condition for positive assessments of the competence based trustworthiness of entrepreneurial support structures in the empirical cases, and as such constituted a key underlying factor in the formation of collective-efficacy perceptions. The framework which emerged in analysis of these findings is presented in figure 6.4.
6.3.1.1 Order, Disorder, and Competence Based Trust

Order, as an exchange trust norm, is based on perceptions of organisation and stability in the party that is to be trusted (Braithwaite 1998). As a social actor engages in activity which necessitates a level of vulnerability to the actions of the other party, demonstrations of order help to secure against the risk of trust violations. As such, the demonstration of congruence with this norm serves as a significant obstacle to institutional change, as novel actors who seek to establish novel relational and cooperative patterns have had less opportunity to ‘prove’ their adherence to this value.

This was a significant issue in both cases. In the Alpha case, a notable manifestation of stability based concerns which related to disorder being represented by consistent reference (14 interviews) to the formal leadership of the TTO, which had changed on a number of occasions since the office had been founded. The instability in the directorship of the TTO shaped their formation of beliefs about the capability of the TTO itself to be effective in its mission of cultivating an environment conducive to entrepreneurial behaviour. Leadership based concerns as they related to the question of
order or disorder were not limited to the formal leadership of the TTO itself, but also focused on the perceived inconsistency of initiatives taken by the office in seeking out good ideas amongst faculty and driving projects towards the marketplace. This was something interviewees felt was a primary responsibility of the TTO and one that was not being adequately met. The following comments reflect Alpha case interviewee concerns in this respect:

<table>
<thead>
<tr>
<th>Order and Leadership in the Alpha Case</th>
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<tr>
<td><strong>A-17</strong></td>
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<tr>
<td>“I mean there have been ongoing problems with the TTO head position, and that says something. If that’s the body that’s supposed to be spearheading the whole commercialisation drive then why is it being let float around rather than having a permanent director, why has it been left to drift? You have to ask yourself how much scope they have to really change anything when you see something like that.”</td>
</tr>
<tr>
<td><strong>A-11</strong></td>
</tr>
<tr>
<td>“There’s a real issue with continuity there, the leadership keeps changing for one thing and it’s hard for any organisation to be effective I think if there isn’t stability in the leadership. It doesn’t fill you with confidence.”</td>
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</table>

For interviewees A-17 and A-11, the ongoing issues with the directorship of the TTO had shaped their formation of beliefs about the capability of the TTO itself to be effective in its mission of cultivating an environment conducive to the entrepreneurial behaviour. These views informed interviewees’ wider beliefs about TTO capabilities. For those who made specific reference to the issue of leadership, it was interpreted as symptomatic of fundamental deficiencies in the university’s third mission support structures, and prompted an attendant expectation that the TTO was perhaps incapable of delivering the technical competence levels required for successful entrepreneurship.

The extent of the interviewee’s personal experience with the TTO did not seem to be a significant factor in this assessment. An early career stage electronic engineer, A-3,
who had partaken in a Campus Commercialisation Course (CCP) organised by the TTO and had additionally been involved in research leading to commercialisation stated that “they’re an excellent group of people, they’re organised and they really know what they’re about”, but A-4 a similarly early career stage interviewee from a physics background who had also been involved in a commercialisation project stated that “They get in the way a little bit when they’re trying to help, one of the guys who works with me describes as is like having someone help you try to push a piano up the stairs but he keeps stepping on your toes.” The latter perspective was predominant in the Alpha case. For the most part personal experiences were imparted as supporting evidence for interviewees’ negative assessment of the likely future performance levels of the TTO. The comments from interviewees A-9 and A-8, in relating such arguments, framed competence violations in their interactions with TTO professionals as a manifestation of deeper disorganisation which made a reoccurrence of such violations highly likely:

<table>
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<tr>
<th>Order and Framing Personal Experiences in the Alpha Case</th>
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<tr>
<td><strong>A-9</strong></td>
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</table>
“When it came to patent filing, for example, it was definitely a more difficult body of work than I thought it was going to be. In our case things were punted back to us an awful lot and we were left to carry most of the load. I feel that maybe they just don’t have the right set of skills and maybe they’re not really as organised and structured as they need to be yet. You need people to be really on the ball to make this possible and in my experience they really weren’t. That just creates too much uncertainty and makes the whole thing even harder.”

Competence based violations are especially damaging when individuals receive, or perceive, no evidence of intent to prevent future violations (Ferrin at al. 2009). In the absence of a perception of order and organisation, negative expectations about the future behaviour of were clearly formed in the Alpha, diminishing the individual academics willingness to accept the vulnerability associated with risky entrepreneurial behaviour to the extent that engagement with the TTO was necessary. Significantly, these perspectives were not confined to those who personally experienced some form of competence based violation. Rather, the perception of the Alpha case TTO as disordered appeared to have a strong degree of embeddedness in assumptions about their competence across the sample. The following quotes illustrate this point:

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<thead>
<tr>
<th>Embeddedness of Assumptions of TTO Disorder in the Alpha Case</th>
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<tr>
<td><strong>A-18</strong></td>
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<td><strong>A-13</strong></td>
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</table>
Such comments reflect McEvily and Marcus’ (2005) assertion that the social embeddedness of assumptions about the capabilities of other social actors is significant factor in the emergence of trust. The widely shared assumption in the Alpha case that the TTO was disordered and as such untrustworthy with respect to its competence in the facilitation of entrepreneurial projects, diminished collective-efficacy perceptions to the extent that the TTO was understood as important to the success of an entrepreneurial venture. The TTO as an agent of entrepreneurial proliferation was therefore undermined by this issue. It should be noted at this point that the TTO in the Alpha case had only been established for five years at the point during which these interviews were conducted, perhaps reinforcing the point that competence based trust is established over time as social actors learn more about each other’s capabilities, and form more realistic expectations about what they should be (McEvily et al. 2003, Levin and Cross 2004).

As outlined, impressions of the leadership provided by the TTO as a champion of entrepreneurship were significant across the Alpha case in perceptions of TTO orderliness, and this was similarly evident in the Beta case date. One important manifestation of this trust value in the Beta case was a perceived long term strategic orientation of entrepreneurial initiatives, which was described by many interviewees (11) as indicative of a stable and well ordered vision. This appeared to contrast with the general perception of entrepreneurial initiatives in the Alpha case as poorly led and directionless. The following quotes illustrate the divergence in the dominant perspectives of the two cases on this point:

| B-15 | “The impression I have is that the commercialisation side of the university’s research has been very well managed, I think there are some very good people driving it which is a very important thing. The danger always with commercialisation I think is that they become excessively focused on the short term, but on the contrary I think they’re always looking years down the line and looking to build new relationships and capabilities which is a great thing.” |

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There have been a number of key figures who have really pushed this in the university, and I think the vision and the leadership of those guys has been hugely important. There are people here who have helped to build this culture of entrepreneurship from something quite small into what it is today. And I think when you look at what has been built you cannot help but think that these are top class people and people like that are who you want to work with.”

Similarly impacting the competence based trust placed in the TTO by Beta case interviewees was well ordered division of specialised expertise within the office. Whereas academics in the Alpha case consistently referred to a perceived absence of specialised competence in the TTO and disordered technical competence as a result, this was one of the widely assumed strengths of the TTO in the Beta case. Again, it was noticeable that these assumptions were prevalent whether personal experience of their veracity was in evidence or not. A number of factors were significant in this respect, the first is a pattern amongst (9) Beta case interviewees of basing assumptions of competence (in part) on documentation and communication issued by the TTO itself. Interviewees B-12 and B-13 offered illuminating comments in this respect:

| B-12   | “I know they have experts in particular areas, I know they have good people to help with finance too as that is something that is obviously a concern for entrepreneurs. I think what’s really valuable as well is the availability of people who know the different technological areas really well. So someone may be an expert on commercialisation in microbiology, for example, but that is not going to be of much use to me as my field is very different and I would need a very different type of business model. They are quite good at communicating that I think, how well set up they are. They make an effort to let scientists and engineers know what they can do for them.” |

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B-13  

“They have a lot of experts in different areas so just from the emails I would have received I have a good sense of who I need to talk to if I had a particular idea. They seem to be able to cover a lot of the angles which is important if you want to take something to the marketplace, there is a lot that I wouldn’t know how to do. It’s good to know that they’re there for you if you need them. You need to have that confidence in what they can do.”

From the comments made by both interviewees B-12 and B-13, we can see that beliefs about the competence of the TTO in the Beta case were impacted by assumptions of a well ordered array of specialised expertise, a notable point of distinction between Alpha and Beta case interviewee perceptions. This is not to suggest that Beta case interviewees were perfectly satisfied with the support structures that were in place for entrepreneurial behaviours, for example interviewee B-7 suggested that “They’re not quite as effective as they seem to think they are...sometimes you need a lot more knowledge of an area than they’re able to offer you”. Nevertheless, Beta case interviewees were predominantly of the opinion that the TTO did offer a well ordered, and stable service. As such, their perspectives pointed to a much stronger sense of trust in TTO capability to deliver upon crucial technical requirements in potential entrepreneurial endeavours, an underlying assumption which is significant for collective-efficacy perceptions.

As in the Alpha case, assumptions amongst interviewees who had personal experience of working with the TTO had much in common with the assumptions of those who had none, indicating a taken-for-grantedness of impressions of TTO capability across the sample. The following quote from interviewee B-14 illustrates this point: “Whether you’ve worked with them or not you’re aware of their reputation...they have a very professional setup and it’s one of the strengths of the university in this whole area.”
Additionally, negative personal experiences as articulated by a small number of interviewees (3) were framed somewhat differently to similar experiences in the Alpha case. While such experiences still prompted the concerned academics to criticise aspects of the TTO’s performance, they were less inclined to interpret failures as indicative of fundamental shortcomings in the TTO’s orderliness and competence. As interviewee B-15 commented “I haven’t been very happy about some of the issues I’ve had with them, but I don’t think they can get it right all the time...for a lot of people they tend to deliver”, or as interviewee B-8 stated “I can’t say my experience of them would make me rush back to work with them again, but you know they’ve done a lot of good work with some of my colleagues so it depends on the project I guess.” These suggest the importance of prevailing assumptions embedded in local environments. Negative personal experiences contradicted widely shared assumptions about the TTO, and as such were framed in these individual cases as specific to the project at hand as opposed to an indication of fundamental disorder.

These comments lead us to the second exchange trust value which informed interviewee perceptions of the competence based trustworthiness of entrepreneurial support structures, namely the performance record of these structures with respect to entrepreneurial activity. This issue is examined in the following section.

6.3.1.2 Performance Record and Competence Based Trust

Performance track record is an important dimension of the exchange trust norms which shape the competence based trustworthiness of a social actor (Braithwaite 1998). Past performance is a significant factor in the formation of trust propensity in a given relationship, providing as it does information about the potential partner’s competences and likely behaviour in the future, thus shaping perceptions of risk and vulnerability (Das and Teng 1996, Das and Teng 2004). The competence based trustworthiness of the TTO, as an organisationally situated partner for entrepreneurial ventures, is therefore a variable which is sensitive to this particular norm. In analysing interviewee
perspectives on the feasibility of an entrepreneurial venture with respect to collective-efficacy perceptions, significant evidence emerged in support of this proposition.

Scepticism about TTO capabilities and the wider potential for the university to deliver upon the promises of support for its third mission engagement were based on a strong consensus in the Alpha case (18 interviewees) that investment to date had delivered a poor return. The dominant view across the sample was that, to a greater or lesser degree, the university had been unsuccessful in its efforts to cultivate greater levels of commercialised technology and knowledge transfer, and the TTO as the central actor in these initiatives was at least partially accountable for this ‘failure’. Comments from interviewees A-1 and A-20 illustrate this perspective:

<table>
<thead>
<tr>
<th>Performance Track Record and Competence Based Trust in the Alpha Case</th>
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<td><strong>A-1</strong></td>
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| **A-20** | “Well I think there’s a feeling that a lot of money has been pumped into this thing and the outcomes really haven’t been that impressive. It’s a few years down the line, obviously economic circumstances are different and there’s a sense of ‘well this hasn’t really worked as we would have expected’ about it. I think people are wondering where the jobs are and maybe there’s a fear that the capability isn’t there to deliver them. The success stories aren’t really there to be honest
Notably, interviewee A-20’s comment also pointed to the perceived poor track record in TTO outputs as evidence of a lack of competence on their part to perform the role required of them. Given that track records in given areas demonstrate to observers the likely nature of future behaviours in that domain, the perceived lack of success in generating positive third mission related outcomes had a diminishing effect on the levels of trust exhibited by interviewees in the competence of the TTO. Consequently, and supporting the thesis advanced by McEvily et al. (2003), interviewee willingness to engage in entrepreneurial behaviours was negatively impacted as academics did not express trust in the support structures intended to limit their vulnerability to failure. In other words, perceived competence deficiencies increased expectations of trust violation, rendering perceptions of entrepreneurial behaviour as a more, rather than less, risky course of action.

This was a clear advantage enjoyed by proponents of the third mission in the Beta case. The aforementioned perception of risk and vulnerability associated with entrepreneurial behaviours was diminished by a considerable and well publicised track record on the part of the Beta case TTO. A dominant perspective right across the sample of Beta case interviewees was that the TTO had a history of successes in this respect, with a proven ability to both facilitate and lead successful entrepreneurial initiatives. As interviewees B-6 and B-11 stated:

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<tr>
<th>Performance Track Record and Competence Based Trust in the Beta Case</th>
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<td><strong>B-6</strong></td>
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</table>
“I think they have proven that they’re quite good at this, quite a lot of projects have done really well. And I think that shows that for engineers and scientists like us we can have our publications and our scientific reputation, but it’s also possible to do something like this and have success in this way too. You know they’ve got a good idea of what has a chance and what doesn’t and so you are not going to be taking a stupid risk, right? If they think it’s a good idea then it’s probably a risk worth taking.”

The successful track record of the TTO in the Beta case enhanced the levels of trust placed in their judgement by academics. And as interviewee B-11 suggests, these successes demonstrated to interested observers that the TTO’s competence in selecting the right ideas to help develop (as indicated by their track record) moderated the risk and associated vulnerability of entrepreneurial efforts. The belief that with the TTO’s expertise available, an academic would not find themselves taking a “stupid risk” is reflects the confidence this academic had in the TTO to reduce the risk attached to an entrepreneurial initiative. Positive expectations about the likely behaviours of the TTO professionals had the effect of making the vulnerability associated with entrepreneurship appear acceptable. The track record of the TTO indicated to the observing academic that trust violations of a competence based nature had a low level of probability.

6.3.1.3 Collective-Efficacy and Competence Based Trust - Summary of Findings

Competence based trust emerged in analysis of the data as a significant factor in the formation of collective-efficacy perceptions in the empirical cases. Congruence with two key norms, identified within the trust literature as significant in the context of competence perceptions (Braithwaite 1998), consistently emerged as a central factor in the formation of trust based assumptions. In the Alpha case, perceptions of disorder and a poor performance track record on the part of the TTO were prevalent, undermining the collective-efficacy perceptions of interviewees to the extent that the TTO’s
assistance was regarded as necessary to the success of an entrepreneurial venture. Conversely, the prevailing perspective in the Beta case was that of broad congruence with these values, which enhanced collective-efficacy perceptions as a consequence. As such, competence based trust appeared to be an important element of the relationship between the university context and cognition in the empirical cases, both reflecting and reinforcing the embeddedness of an entrepreneurial orientation. A summary of key findings is provided in table 6.5.

<table>
<thead>
<tr>
<th>Table 6.5: Key Findings - Collective-Efficacy and Competence Based Trust</th>
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<tr>
<td><strong>Competence Based Trust in the Alpha Case:</strong></td>
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<tr>
<td>• Was diminished through perceptions of disorder in entrepreneurial support structures, which diminished collective-efficacy perceptions with respect to the feasibility of entrepreneurship</td>
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<tr>
<td>• Was diminished through perceptions of a poor performance track record on the part of entrepreneurial support structures, which diminished collective-efficacy perceptions with respect to the feasibility of entrepreneurship</td>
</tr>
<tr>
<td><strong>Competence Based Trust in the Beta Case:</strong></td>
</tr>
<tr>
<td>• Was enhanced through perceptions of order in entrepreneurial support structures, which positively affected collective-efficacy perceptions and framed entrepreneurship as a relatively more feasible course of action</td>
</tr>
<tr>
<td>• Was enhanced through perceptions of a strong performance track record on the part of entrepreneurial support structures, which positively affected collective-efficacy perceptions and framed entrepreneurship as a relatively more feasible course of action</td>
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6.3.2 Collective-Efficacy and Relational Trust

Knowledge based trust perspectives as they pertain to the competences of another actor are significant but not sufficient in explaining the role of trust in social interaction, particularly the willingness of individuals to engage in risk-taking behaviour that requires a state of personal vulnerability to the behaviour of the target actor (Braithwaite 1998). As Braithwaite (1998, p.46) states:

“Such an informational base contributes to trust but is not sufficient; trust comes with a shared understanding that one is relying on the other. Trust in (this) sense transcends information and has its source in the social bond.”

This ‘social bond’ is integral our understanding of the role of institutionalised trust issues in this context. As shared institutional logics provide social actors with similarly shared norms, values, and beliefs about social purpose and processes in a given environment, the emergence of new institutional logics creates new social roles or amends existing ones, challenging the prevailing norms, values, and beliefs which underpin the social bond of institutional actors.

This is an especially important consideration for the occupants of specialised roles concerned with the commercialisation of university based research, given their boundary spanning activities which serve as a bridge between otherwise disconnected organisations and individuals (McEvily et al. 2003, Perrone et al. 2003). Interviewees in both the empirical cases interpreted the role of their university’s TTO as being in part a matter of representing their individual interests in interactions with other parties. Consequently, the extent to which academics in either case were willing to engage in trust dependent activities such as disclosing of information, committing to partnerships, and suspending judgement was shaped in part by their identification of the TTO professionals, both collectively and individually, as sharing their preferences and priorities. A variety of factors emerged which impacted upon this issue, and these will be examined in the following sections. The framework which emerged from the findings is presented in figure 6.5.
6.3.2.1 Whose Best Interests?

A significant issue for many Alpha case interviewees was the extent to which they regarded the TTO as representing other stakeholders’ interests as opposed to their own, with the two being understood as somewhat distinct. This concern was sometimes framed within an interpretation of the TTO as beholden to the university management, while at other times it was understood as representing the interests of external stakeholders. The following quotes from interviewees A-8, A-9, and A-2 illustrate this perspective:

<table>
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<tr>
<th>Relational Trust and TTO Loyalties in the Alpha Case</th>
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<tr>
<td><strong>A-8</strong></td>
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<tr>
<td>“The process of negotiating intellectual property with the university is quite torturous, and it’s made more difficult by the fact that you’re negotiating on the opposite side of the table from the university. So you can’t really turn to the TTO for help in that situation because, you know, they’re probably not on your side, so to speak. They’ve got different priorities. And that it makes it very hard for you to go...”</td>
</tr>
</tbody>
</table>
through the process because you feel like you either have to go it alone, or if you have the option, to turn to external supports.”

| A-9 | “What the university prefers is for these ideas to go to the TTO or to be patented and to create a revenue stream and start-up companies. If you were to ask me do I have ideas that I think could be patented I would say yes, if you were to ask me would I take a real financial risks to go through with them I would say definitely no. For the TTO I’d be another useful statistic for their reports to EI (Enterprise Ireland) or the university management. But that’s not much use to me if I’m left holding the can, you know. I would be concerned I guess that when it came down to it the TTO would have their own pressures to respond to and they might not be in tune with my best interests.” |
| A-2 | “I went to the commercialisation people here because I wanted to get a sense of how I could structure the idea we had as a business, and how we could maybe approach EI for funding. And really the experience I had was that they were very much pushing EI’s line of thinking more than they were mine. That’s the point of view they were coming from. What I wanted was advice from people who were part of the university, who would understand researchers, about how I as a researcher could deal with EI. Instead what I got was a conversation with an EI puppet, more or less. That was a weird situation and I didn’t really want to speak to them again after that. If they’re part of the university then they should be there to support your efforts to commercialise, not to just be a representative for people outside of it (the university).” |

14 of the 20 Alpha case interviewees referred to this perception of the TTO being significantly closer to external bodies such as Enterprise Ireland or to the university management team within the organisation, than they were to the research community in the university itself. A minority (3) disagreed with this perspective while another 3 respondents offered no perspective on the matter. The perception of the TTO in
particular as beholden to the interests of other actors was a central theme in the Alpha case data, reflecting an interpretation of the TTO as an institutionally exogenous actor, albeit an organisationally endogenous one. This perspective seemed to reflect a general perception of the TTO in the Alpha case as an instrument of top-down policy, and as such an actor which was an instrument of either managerial or political interests as opposed to academic ones. The perception of a novel actor as lacking true role autonomy typically elicits distrust, as the target actor is typically regarded by observers as lacking the discretion to fulfil their own expectations should they choose to interact with them (McEvily et al. 2003, Perrone et al. 2003). Concurrently, and perhaps paradoxically, such novelty also heightens fear of opportunism, as assumptions of divergent interests undermine the emergence of an institutionalised social bond.

The Beta case interview data adds more light to this perspective. With respect to the TTO’s sharing of academic priorities and preferences, academics in the Beta case exhibited a much more positive disposition towards the TTO’s relational trustworthiness. Let us firstly look at the level of identification on the part of Beta case academics with the TTO’s function as it was understood, and the extent to which there was a perception of compatibility with their own interests. For Alpha case interviewees, the data pointed to a perceived absence of shared purpose between academics and the TTO, with the TTO being perceived as beholden to the interests of management or perhaps external interests and prioritising outcomes accordingly. For Beta case respondents, this concern was largely offset by the perceived independence of the TTO from management control. While the TTO was similarly understood as being an actor which was structurally endogenous, it was nevertheless understood by the majority of interviewees (12) as a largely autonomous one. As interviewees B-1 and B-15 explained:

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<th>Relational Trust and TTO Loyalties in the Beta Case</th>
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were dealing with central office, because then it is just you against the bureaucracy of the university and you are basically in their control. With an independent (TTO), you are more like a partner and they are more likely to be interested in what you want to do.”

**B-15**

“They have people to answer to, like any other part of the university, but at the same time they are free from the university’s control, they are their own men if you know what I’m saying. People like that because it’s you and them in that situation and you feel like you have some control, you work together.”

The perception of the TTO as a ‘partner’ emanated in part from its perceived status as an independent, autonomous actor which possessed the discretion to engage with academics in a manner in which their priorities and preferences were more likely to be valued. The aforementioned ‘social bond’ in the Beta case then, appeared to arise out of a sense of shared dependence between the academic and the TTO, satisfying what Braithwaite (1998, p.46) described as the need for a “shared understanding that one is relying on the other” as a basis of trust between social actors. For Beta case interviewees, the TTO in its autonomy from centralised university control was in the main neither reliant nor dependent upon management support for its existence; rather it was dependent upon the academics from which ideas with commercial potential came:

**Relational Trust and Mutual Interdependence in the Beta Case**

**B-2**

“There is what you could call a symbiotic relationship between the (TTO) and the academics. The (TTO) need the ideas that are produced by the academics, and the academic if he wants to bring his research to the marketplace often needs their support to do it. For the (TTO) this means that it’s very important for them to maintain a good relationship with the academic because if they don’t, they don’t get that professor telling his colleagues that it’s a good idea to work with them.”
What emerges from analysis of the data in the Beta case is a perception of a shared dependence between academics and the TTO which served as an underpinning factor for the institutional logic of the third mission. The Beta case TTO, as an agent of entrepreneurial support, was understood in its role by Beta case interviewees to exist in a state of mutual interdependence with the academic population of the university. Consequently, the basis for future relationships between would-be academic entrepreneurs and the TTO was perceived by Beta case interviewees as depending upon the TTO’s integrity in its dealings with academics. This is an important point of contrast between the Alpha and Beta cases, given the widespread perception in the Alpha case of the TTO serving the interests of the university management or of external actors, as opposed to serving the interests of academics. The implications of such assumptions for collective-efficacy perceptions are significant.

### 6.3.2.2 Long vs. Short Term Relationship Focus

For Alpha case interviewees, concerns about the extent to which the TTO had their best interests at heart were manifested in their framing of the TTO’s apparent unwillingness to develop and facilitate long term projects, instead seeking short term payoffs. This perspective was offered by just under two-thirds of the sample (13), and interviewees A-10 and A-19’s comments illustrate this viewpoint:
“From anecdotal experience, I would say that the thinking here in terms of university policy is not towards sustained investment of time or resources in a particular project. I think, just from what I’ve experienced and what I’ve heard from others, I think that there’s a preference for a quick patent or a licensing deal and then for you to just move onto something else. I think that’s quite stupid really, it sends the wrong message.”

“You’d like to think that you could develop something gradually and over time, and I think for academics that would be the way to do it. The way to go about this in my opinion is to build relationships with industry partners over time, and develop a pipeline with them that creates a steady stream of revenue that you can then decide how to put to the best use. But I think the TTO need fast results, because they have people pushing them for those results. The whole ‘where are the jobs?’ thing, you know. So I think they’re looking for the big announcement, the big deal. I don’t think they’d be interested in the longer term outlook that I lean towards.”

Such views were to some extent a further manifestation of the issue outlined in the previous section, as the TTO was identified by these interviewees as being oriented towards the resolution of performance pressures as opposed to the maximisation of the potential of ideas or indeed, academic capability. However, a key dimension in this respect was a perception of a transactional or ‘one-off’ approach from the TTO as opposed to the development of ongoing relationships. The significance of this point, within an analysis of relational trust, spans from the distinction between short-term transactions and collaborations, and interactions in the context of a desire for future cooperation. The development of long term relationships and projects require trustworthiness (as a basis for future cooperation) on the part of participating actors in order to facilitate them. An assumed disinterest in long term cooperation undermines expectations of integrity, and diminishes relational trustworthiness as a consequence.
The importance of this assumption is further illuminated by the Beta case data. The majority perspective offered by Beta case interviewees, was that the TTO was very much oriented towards the long term, with the dominant belief being that it was in the TTO’s interest to establish a basis for future cooperation:

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<th>Relationship Orientation and Relational Trust in the Beta Case</th>
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<td><strong>B-3</strong></td>
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<td><strong>B-14</strong></td>
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As interviewee B-14’s comment indicates, the dominant assumption in the Beta case (13 interviews) was that of the TTO as long term oriented with respect to relationships with individual academics. As the findings with respect to relational trust generally indicate in the Beta case, such a disposition was not necessarily understood as mark of benevolence, rather the establishment and maintenance of strong relationships with faculty was interpreted as being in the TTO’s best interest. This divergence in attitudes is indicative of the extent to which the social bond between entrepreneurial support agents and academics was embedded in the local institutional logic. The sociological origins of institutions emphasise the importance of relational patterns in their creation and maintenance, this finding appears to provide some insight into the nature and importance of that process in the context of the entrepreneurial university.
6.3.2.3 Bridge Building

The assumption that the TTO was not interested in the long term best outcomes for academics was reinforced by a perception across the Alpha sample (15) of the TTO as not having exerted a significant effort to build relational bridges with faculty. Regular interpersonal interaction cultivates stronger levels of identification with another’s needs, preferences and priorities over time which, which as Lewicki and Bunker (1996) suggest accelerates the emergence of shared belief and value systems. The Alpha case interview data points to a perceived absence of such interactions, with interviewees reporting an absence of shared understanding (between faculty and the TTO) as a consequence. For some interviewees, the absence of interaction with the TTO prompted an assumption in the Alpha case that TTO professionals were largely unfamiliar with the nature of academic work, and thus was largely incapable of offering meaningful assistance to them. The following quotes illustrate this point of view:

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<th>TTO Bridge Building and Trust in the Alpha Case</th>
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<td>A-13</td>
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<tr>
<td>“I would expect the TTO to have people on the ground encouraging researchers, to see what they’re working on, to understand the environment they’re working in. Just to be there now and again, you know, just to see what’s actually going on in all these different research departments. I’ve had patents that have been at different stages of being granted and no one (from the TTO) has ever talked to me about them. I don’t really see how they can help us commercialise if they don’t try to get a sense of the challenges we face. So there’s a real barrier there to working with them because of that.”</td>
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<td>A-12</td>
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| “I have been to some talks that have been pretty good, and you would definitely get some good stuff out of them. The problem is, you don’t really get that one on one contact with people who really take an interest in what you’re doing and talk to you about how there might be the potential to commercialise something in there. So they don’t really know anything about you or your research or what challenges
you might face, because every technology and every market is different. If you bring in a huge research project you’ll get some attention from them alright but as it is I don’t think they’d even know how to facilitate you if you went to them.”

The perceived absence of communication and interaction between the TTO and the academic community, either or an individual or collective basis, contributed to an overarching sense of estrangement between the two and underpinned perceptions of divergent interests in the Alpha case. In contrast, the Beta case data consistently reveals the positive impact of the TTO’s communication efforts with the academic community. Research on the nature of trust in organisational science continually reiterates the assertion that the quantity and quality of interactions between two actors impacts upon the degree to which they come to identify with each other’s needs, preferences and priorities over time, which in turn shapes the emergence of shared belief and value systems (Lewicki and Bunker 1996). The long standing presence of the TTO as a social actor within the university in the Beta case had been accompanied by the normalisation of communication channels which permitted the level of interaction required for such identification to take place. Interviewee B-8 interpreted this as a shortening of ‘distance’ between the TTO and faculty, with the perceived openness of the TTO to conversation being of great importance:

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<th>TTO Bridge Building and Trust in the Beta Case</th>
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<td><strong>B-8</strong></td>
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<td><strong>B-1</strong></td>
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the ideas. They did not just sit there and wait for the ideas to come to them. They created a forum for discussion for people who were interested in the potential of this idea of commercialisation to talk with each other. And they were at the centre of that. That sense of purpose must be built from the ground up, from conversations over a coffee or a beer that are just about the ideas. That’s how things change, from people talking to each other.”

Interviewee B-1’s comment also illustrates the importance of the perceived openness of the TTO to communication with the academic community, with the underlying narrative of the TTO’s success emphasising their willingness to seek out and engage academics at the ground level. The success of such behaviour in moulding what Mayer et al. (1995) refer to as the congruence of values and what Lewicki and Bunker (1996) describe as the increased identification and sharing of values between actors is made clear in the distinctions between Alpha and Beta case interviewee perceptions of the TTO. Whereas in the Alpha case, academics regarded the TTO as detached from the interests of the academics themselves, academics in the Beta case had a much stronger expectation of congruence.

As such, they regarded interaction with the TTO as a behaviour in which their vulnerability was limited by a sense of mutual dependence, and an expectation that future cooperation was a desired outcome for the other party. Violations of trust, therefore, and the pursuance of diverse priorities was regarded as relatively unlikely when compared to the Alpha case.

6.3.2.4 Endogenous vs. Exogenous Perspective of Entrepreneurship in the TTO

A related issue which emerged in analysis of this theme was the extent to which interviewees regarded the formal approach to commercialisation in their university as being endogenously oriented and designed with the uniqueness of the academic context in mind. For some Alpha case interviewees, the perception of the TTO as being largely
uninformed about the challenges they as individuals would face in an entrepreneurial venture suggested a deeper flaw in the university’s development of commercialisation support structures. For them the TTO, as essentially an instrument of management policy, was shaped in its own actions by an understanding of innovation and entrepreneurship that was informed by industry and not academic experience. The following quotes from interviewees A-11 and A-4 illustrate this particular viewpoint:

<table>
<thead>
<tr>
<th>Exogenous Perspective of Entrepreneurship in the Alpha Case</th>
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<td><strong>A-11</strong></td>
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<td><strong>A-4</strong></td>
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For these interviewees, concerns about the TTO’s efforts to communicate with academics and understand their unique challenges was compounded by a perception of
their strategic approach to the issue of university entrepreneurship policy as being shaped by industry and not academic experience. As such, this policy failed to reflect the real experiences and challenges faced by the academics themselves. As interviewee A-17 described it “They don’t really get what it would take for an academic like me to take the plunge and try this. It’s just a totally different challenge for us, you know.”

Again, a perceived failing of the TTO was framed within a general interpretation of it as estranged and alien to the academic world, with their modus operandi consequently being regarded as being poorly aligned with the academic experience.

This issue offers us a useful illustration of the formulation of assumptions about the TTO in the Alpha case. From an institutional perspective, this particular assumption is a predictable outcome of the establishment of a TTO in the academic environment. The relational patterns which underpin a prevailing institutional order are in part maintained by embedded assumptions about other social actors, cooperation with whom is in large part dependent upon shared norms, values, and beliefs about social purpose and processes (Friedland and Alford 1991, Thornton and Ocasio 2008). In order to build a plausible picture of the TTO in the Alpha case, interviewees needed to establish a coherent theory of its objectives and operational logic. With this picture being constructed in the light of the relational trust issues already outlined, the assumption that the TTO operated on the basis of industry and not academic experience made sense, encapsulating as it did the TTO’s perceived exogenous origins.

We have already seen the relative strength of the TTO’s social ties to faculty in the Beta case, in particular the extent to which assumptions of mutual interest and mutual interdependence were much more prevalent throughout the sample. Assumptions about the endogeneity of the TTO’s approach to entrepreneurship were largely consistent with this trend. A large majority of the sample (12) regarded the TTO as being in tune with the academic experience of entrepreneurship, as evidenced by a variety of factors. The following quotes illuminate some of these:
Endogenous Perspective of Entrepreneurship in the Beta Case

| B-7 | “They’ve learned a lot over the years, and that is very important. They have a lot to learn still in my opinion, but from the things they say and the talks you have with them you always get the sense that they understand that academia is a different world from the world of business, and entrepreneurship happens differently here.” |
| B-5 | “You can’t force a way of doing this on academics, they just won’t be interested. For any university to be successful as a place of entrepreneurship they have to have local approaches and local ways of working...what we have here is the ‘(Beta) way’. It works for us” |

By virtue of its longer history as an organisational element in the Beta context, as well as its relationship with faculty, the TTO in the Beta case was generally interpreted as adopting an approach to entrepreneurship which was informed by the local academic experience. Perceptions of exogeneity that were so prevalent in the Alpha case were largely absent. As such, this seemed to be an important manifestation of the difference in the social embeddedness of the TTO and its agents of entrepreneurial support in the two cases.

6.3.2.5 Redundancy of Support Structures

Several empirical studies in the university entrepreneurship literature have pointed to the inclination of academics to utilise personal networks when pursuing entrepreneurial ventures as opposed to engaging formal mechanisms of knowledge transfer such as the university TTO (Mosey and Wright 2007, Markman et al. 2009, Aldridge and Audretsch 2010). In the context of this study, the relational trust issues uncovered in both cases finds much to illuminate the underlying rationale for such behaviour. The effective consequence of the perspectives offered in the Alpha case was to give rise to what McEvily et al. (2003) refer to as redundancy, or the tendency of individuals to rely
on external actors and personal networks in the absence of trust in shared values, norms, beliefs and their attendant priorities and preferences. This was manifested through a widespread (13) expression of preference amongst interviewees for the use of personal contacts, external to the university should they choose to engage in an entrepreneurial venture, on the basis of an absence of relational trustworthiness in the TTO. The following remarks from interviewees A-10 and A-6 illustrate this perspective:

<table>
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<tr>
<th>Entrepreneurial Support Structures and Redundancy in the Alpha Case</th>
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<td><strong>A-10</strong></td>
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<td><strong>A-6</strong></td>
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Such comments capture the manner in which redundancy arises from a lack of relational trust in the target actor. While the creation of the TTO had provided a structure within the university’s boundaries which facilitated the academic population’s commercial and entrepreneurial efforts, the dominant perception of the TTO’s activities as driven by management or corporate logic diminished the propensity for academics to engage with it. It is important to note that this effect was less in evidence where interviewees had a lengthy and ongoing relationship with TTO professionals, supporting the view that interpersonal contact plays an important role in diminishing trust based concerns of this nature. For example, interviewee A-3 commented: “I think they show a lot of initiative in seeking out the right people for researchers to talk to, people who could use our ideas. For a small team of people I think they have built a lot
of networks for us to tap into.” This perspective suggests that TTO redundancy can be alleviated as intensity of personal contact increases.

For Beta case academics the question of TTO redundancy was more complex. Interviewees with significant entrepreneurial experience, who had in the process of accumulating this experience developed significant levels of social capital, were not in any real sense dependent upon the TTO for access to the seed funding or human capital necessary for the success of an entrepreneurial venture. Nevertheless, such interviewees offered perspectives on the issue of TTO redundancy that concurred with the dominant view (12) across the sample. This perspective is illuminated by the comments below:

<table>
<thead>
<tr>
<th>Entrepreneurial Support Structures and Redundancy in the Beta Case</th>
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<td><strong>B-12</strong></td>
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<td><strong>B-14</strong></td>
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For the most part, Beta case interviewees were aligned with their Alpha case counterparts in regarding the use of personal contacts as ultimately preferable to formal university mechanisms. Whereas many Alpha case respondents based this preference on reservations about the relational trustworthiness of the TTO, however, Beta case respondents did not articulate such concerns. While the use of personal networks was ultimately regarded as a preferable course of action, embedded assumptions which
collectively contributed to a strong sense of relational trust in the TTO rendered the TTO route to entrepreneurship a relatively desirable course of action.

6.3.2.6 Administrative Support and Substantive Commitment to Entrepreneurship

A final issue which emerged in analysis of the relational trust and collective-efficacy theme was interviewee perceptions of the administrative support for entrepreneurial behaviour, and the extent to which university formal administrative structures exhibited a substantive commitment to entrepreneurial behaviour. This issue was important within interviewees’ overall perceptions of collective-efficacy within their university, as it was regarded as a clear signal of the university’s intent to support entrepreneurship and was therefore understood as a factor in the feasibility of entrepreneurial behaviour. In this sense, the perceived integrity of the third mission narrative in the university was a significant factor in the formation of interviewees’ expressed willingness to mobilise in support of its aims. McEvily et al. (2003, p.93) present this analysis by stating that “from a mobilising perspective trust motivates actors to contribute, combine, and coordinate resources toward collective endeavours.” This collective dimension, they suggest, is partially dependent upon the relational trust established between concerned actors with respect to the endeavour at hand.

The perspectives offered by interviewees in this respect revealed their interpretations of the extent to which their university was substantively or symbolically adapted to the third mission. Upon this key perspective was built wider views about the feasibility of entrepreneurship as a personal course of action. We have seen in the previous chapter how a lack of formal institutional recognition for entrepreneurial activities in the Alpha case represented a clear and explicit obstacle to the proliferation of entrepreneurship. In terms of feasibility perceptions, the apparent low value status of entrepreneurship in its own right offered a fundamental challenge to the concept of the third mission, underlining as it did its peripheral status in the institutional value system. This peripheral or low value status was reaffirmed through individuals’ experiences with formal reporting of the commercial potential of their research interests, with the
administrative exercise reinforcing interpretations of obligations to the commercialisation imperative as either substantive or symbolic. For a large number of Alpha case interviewees (16), the university’s support structures for the third mission were ultimately framed as a concession to external pressures, with the university leadership’s rhetoric and actions being motivated by a desire to satisfy external stakeholders rather than to promote entrepreneurship:

<table>
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<tr>
<th>Symbolic Commitment to Entrepreneurship in the Alpha Case</th>
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<td><strong>A-9</strong></td>
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<td><strong>A-13</strong></td>
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<td><strong>A-8</strong></td>
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As many Alpha case interviewees framed the university’s engagement with the third mission then, they tended to do so within prevailing perspectives of the university’s relationship with wider society, placing emphasis on the university’s need to *demonstrate* its economic relevance, as distinct from the *actual* enhancement of the university’s societal role in this respect. Therefore, they typically regarded the university’s adaptation to the demands of commercialisation as superficial, and a case of the university’s leadership engaging in legitimacy politics that were part of a wider game. As detailed in the previous chapter, this did not mean that Alpha case interviewees themselves did not recognise the value of third mission oriented activities in this respect, rather that they regarded the university itself as weakly committed to the declared third mission aims and objectives. Interviewees A-6 and A-7 illustrate this perspective:

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<tr>
<th>Entrepreneurship and Systemic Obstacles in the Alpha Case</th>
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<td><strong>A-6</strong></td>
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<td><strong>A-7</strong></td>
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While many interviewees had themselves invested significant time and effort into commercialisation projects, their overriding impression of the experience was that their output, in terms of how the university valued it, was useful only to the extent that it could be translated into sound-bites and statistics for the university to present to the wider world. For a number of interviewees (7), this apparent decoupling informed their own attitude towards the issue of industry engagement or commercialisation. The following quotes illustrate this point:

<table>
<thead>
<tr>
<th>Entrepreneurial Intent as Symbolic Adaptation in the Alpha Case</th>
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<td><strong>A-11</strong></td>
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<td>“You have to accept that if you put the time into commercialising something you’re not going to get any credit for it really. You’d be a fool if you thought you were going to get any. You know I think it’s smarter when it comes down to it to have some sort of ongoing relationships with businesses that you can pull out of your back pocket as evidence of your commitment to the commercialisation area, and maybe a few patents too, but beyond that you don’t have to worry about it too much. That’s enough to keep the higher ups happy, you know.”</td>
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<td><strong>A-5</strong></td>
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<td>“Scientists have to adapt to whatever the environment is, and if the environment dictates that now you have to come up with an idea for a commercialisation in order to get funding, then they will do that. But in actual fact they could just apply for funding and argue that this is just for proof of concept, for working towards a commercial product, and maybe it’s not going to go anywhere, if you see where I’m coming from. And maybe they’ll instead answer some scientific questions. So maybe people will just use this tool, this funding mechanism, to continue doing their research as usual.”</td>
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As these comments indicate, this attitude was reflected in many of the academics’ own behaviours, with Alpha case interviewees themselves reporting instances where they also ‘played the game’ in their engagement with the third mission. The third mission
therefore, was framed to a large extent as a low status and peripheral institutional objective in and of itself, and as such, academics afforded it a level of importance that mirrored the perceived superficiality of the university’s own level of commitment. As Townley (2002) argues, individuals engage with novel behavioral modes on as superficial a level as possible when significant contradictions are observed. For Alpha case interviewees, these contradictions were observed as a discrepancy between the perceived aims of the third mission, and the prevailing institutional logics within the university at they interpreted them. The rhetoric of the third mission was not reflected in their institutional reality in any but the most superficial of ways.

The fundamentally different framing of the third mission in the Alpha and Beta cases was most reflected in the absence of this contention over the substantiveness of the Beta case university’s commitment to the third mission. While the dangers of an excessively utilitarian interpretation of the university’s societal role were sometimes expressed, commercialisation as an institutional objective was not regarded as an exercise in legitimacy politics. As interviewees B-7 and B-9 remarked:

<table>
<thead>
<tr>
<th>Substantive Commitment to Entrepreneurship in the Beta Case</th>
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<td><strong>B-7</strong></td>
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<td><strong>B-9</strong></td>
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it too much. Because of that I think it has complemented the traditional research focus of the university in a number of ways instead of threatening it or being irrelevant to it. It’s at the centre of what the university does but it doesn’t dominate it. That’s the way it should be I think.”

In the Beta case, therefore, the third mission was more commonly interpreted as an important element of the university’s societal function, and as such engagement with it on any level was not framed as a concession to bureaucratic power, nor an act of superficial acquiescence to the demands of external stakeholders. The perceived complementarity of research and entrepreneurial activities as referred to itself serves as a reflection of the embedded nature of an entrepreneurial orientation in the Beta university context. Whereas perceived complementarity is indicative of a perception of research commercialisation as an organic and logical offshoot of traditional research modes, the perceived acquiescent nature of commercialisation considerations in the Alpha case instead reflected a perception of the third mission as an externally originated and top-down implemented agenda.

Beta case interviewees therefore regarded entrepreneurial considerations as possessive of a much greater congruence with an underlying institutional logic, given the perceived substantive nature of the university’s adaptation to technology and knowledge transfer as a social function. As Tyler (2006) argues, such congruence become part of the individual’s internal motivational system in institutionalised environments such as the university. In the Alpha and Beta cases then, two different normative standards against which the consequences of commercial behaviour were in place, and two broadly distinct perspectives on the probable outcomes of such endeavours resulted.
6.3.2.7 Collective-Efficacy and Relational Trust - Summary of Findings

Relational trust emerged in analysis of the data as a significant factor in the formation of collective-efficacy perceptions in the empirical cases. These findings indicate that collective-efficacy perceptions, a critical antecedent of entrepreneurial behaviour, are sensitive to the level of relational trust which has been established between the TTO and faculty. The extent to which a social bond between the two parties is embedded in the local institutional logic shapes the willingness of academics to accept the vulnerability to the TTO’s actions which is associated with entrepreneurial behaviour requires their assistance. A variety of issues gave voice to the relational trust perceptions of the interviewed academics, and these are summarised in table 6.6.

Additionally, perceptions of the commitment of the university’s administrative structures to supporting entrepreneurial activity played an important part in shaping collective-efficacy perceptions. With respect to the issue of entrepreneurial behaviour, interviewees articulated divergent levels of trust in the substantiveness of the university’s adaptation to the third mission. The perceived complementarity of the traditional and entrepreneurial academic missions appeared to prompt a greater expectation of administrative cooperation in the pursuit of entrepreneurial ventures in the Beta case, whereas Alpha case interviewees typically regarded the university’s entrepreneurial initiatives as symbolic in nature. As such, the perceived integrity of the university’s commitment to third mission activities directly impacted upon the relational trustworthiness of administrative structures with respect to entrepreneurial activity, and consequently was observed as shaping the willingness of academics to accept the inherent risk of an entrepreneurial venture.

<table>
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<tr>
<th>Table 6.6: Key Findings - Collective-Efficacy and Relational Trust</th>
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<tr>
<td><strong>Relational Trust in the Alpha Case:</strong></td>
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<tr>
<td>• Was undermined by a perception of the TTO as being beholden to</td>
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management or external interests

- Was undermined by a perception of a short term approach to relationships with academics on the part of the TTO
- Was undermined by a perception of the TTO as having exerted little effort to build relational bridges with faculty
- Was undermined by a perception of the TTO as being shaped in its understanding of entrepreneurship by non-academic or exogenous experience
- Diminished academics’ desire to engage the TTO in the pursuit of entrepreneurial ventures
- Was undermined by interpretations of university commitment to entrepreneurship as symbolic in nature

**Relational Trust in the Beta Case:**

- Was reinforced by a perception of the TTO as an independent actor
- Was reinforced by a perception of the TTO as existing in a state of mutual interdependence with academics
- Was reinforced by a perception of the TTO as being oriented towards long term relationships with individual academics
- Was reinforced by a perception of the TTO as having exerted significant effort in building relational bridges with faculty
- Was reinforced by a perception of the TTO as being shaped in its understanding of entrepreneurship by academic or endogenous experience

- Enhanced the desirability of engaging the TTO in the pursuit of entrepreneurial ventures

- Was enhanced by interpretations of the university’s commitment to entrepreneurship as substantive in nature

6.3.3 Concluding Comments: Findings for Research Question Four

“How are control and collective-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional trust dynamics at the micro-level in the university context?”

This section has outlined the findings of the study as they related to a key underpinning element of the feasibility perceptions of the interviewees in the empirical cases, namely collective-efficacy perceptions. In responding to the fourth research question which guided this section, a number of mechanisms through which the embeddedness of an entrepreneurial logic at the micro-level shaped the entrepreneurial propensity of the interviewees were described. With respect to collective-efficacy perceptions, the significance of relational and competence based trust in the empirical cases was outlined, with institutional trust therefore being identified as a significant factor in shaping of entrepreneurial propensity.

The findings therefore demonstrate the impact of the university as a context for action on the cognitive processes which underpin a key antecedent of entrepreneurial intent, namely perceived feasibility. The prevalence and embeddedness of an entrepreneurial orientation in the Alpha and Beta cases was manifested through the outlined
mechanisms, thereby reinforcing attitudes towards the entrepreneurial act. Consequently, the significance of relational and competence based trust was their role in shaping of interviewee willingness to undertake the non-isomorphic action inherent to institutional entrepreneurship. As such, these mechanisms were critical elements of the cognitive infrastructure which underpinned the entrepreneurial orientation of the universities in the empirical cases.

Having outlined the findings of the study which were generated by the research questions in chapters five and six, the dissertation will now discuss the relevance of these findings to the extant literature in chapter seven and chapter eight.
CHAPTER SEVEN: DISCUSSIONS I - MICRO-INSTITUTIONAL DYNAMICS AND DESIRABILITY PERCEPTIONS

7.1 Introduction

Having presented the findings of the study in chapters five and six, chapter seven will discuss the findings of the study as they relate to the influence of micro-institutional dynamics on the perceived desirability of entrepreneurial behaviour in the academic domain. In accordance with the entrepreneurial intentions model, perceived desirability is delineated as personal attitude towards the entrepreneurial act, and social norms as they were manifested in the attitudes of salient others towards entrepreneurial behaviour. In so doing, this chapter will discuss the mechanisms through which the desirability perceptions of academics with respect to entrepreneurial behaviour were shaped by the micro-institutional context in the study.

The chapter is structured as follows. Section 7.2 will discuss the manner in which the locally embedded role frame shaped the personal attitude of academics towards the desirability of entrepreneurial behaviour. The findings of the study that address the question of tension between the academic and entrepreneurial role frames, and the nature of the role congruence or incongruence which emerged will be discussed in section 7.2.2. The manner in which congruence between the academic and entrepreneurial role frames emerged as entrepreneurship was recognised as a means of resolving existing role anxieties and contradictions will then be discussed in section 7.2.3. Section 7.3 will then discuss the findings from section 5.3 of the thesis, addressing the manner in which desirability perceptions as they relate to entrepreneurial behaviour were shaped by social norms at the micro-institutional level, and in particular how assumptions about the legitimacy of entrepreneurship were socialised and constructed. Section 7.3.2 will discuss the manner in which the perceived behavioural and attitudinal orientation of salient others at the micro-institutional level framed the functional and representational legitimacy of entrepreneurship for academics in the
empirical cases, while section 7.3.3 will describe the influence of formal leaders at the local level in this respect.

This discussion will make a number of contributions to important debates within the literature, and summaries of these contributions are provided in tables 7.2 and 7.4.

7.2 - Embedded Role Frame and Personal Attitude

In this section, we will discuss the findings from chapter five which address the manner in which the locally embedded role frame influenced the personal attitude antecedent, or the perceptions of the consequences of performing the behaviour in terms of the potentially beneficial or negative outcomes (Krueger 2000).

7.2.1 Key Contributions of Research Question One

Intentions are deeply ingrained in the process through which human beings channel information into action (Ajzen 1987). The identification of opportunities, and the selection of opportunities on the basis of which are the most appropriate to pursue, is therefore fundamental to the emergence of entrepreneurial behaviour (Krueger 2000). The manner in which this perceived ‘appropriateness’ in particular is shaped is of particular interest to us here, as institutional transformation hinges on shifting notions of appropriateness.

As such, the perceived desirability of a behaviour is inextricably linked to the manner by which the institutions in which individuals are embedded shape that perceived appropriateness, by both framing the legitimacy of a mode of behaviour, and by informing personal expectations of its associated costs and benefits (Scott 2001, Seo and Creed 2002). Roles are a key mechanism through which this cultural-cognitive effect of institutions is manifested, and role identity constructions are an inherent
element of the framing process through which social movement and institutional change occurs (Goffman 1974, Benford and Snow 2000). The logic of an institution is embedded in the role identities, and associated values, interactions, and practices of individual actors (Thornton and Ocasio 2008). Therefore, novel behaviours in the context of a given role identity are always faced with legitimacy challenges which, as Zucker (1977) argued, are triggered in response to efforts of modification as mechanisms of institutional persistence.

As argued in the review of the literature, the tension between role frames may be manifested at the cognitive level as role incongruence, or a lack of alignment between the content and underlying logic of the various role interpretations. This study therefore proposed that the desirability of entrepreneurial behaviour in the context of the academic role may be dependent upon both the perceived congruence of the entrepreneurial act with the locally embedded and institutionalised role frame. From a review of these issues in the literature, this study sought to explore the significance of these role frame dynamics in the shaping of personal attitudes towards entrepreneurial behaviour. From the earlier discussion of these issues in this study, the following research question was arrived at:

“How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?”

In answering this question, a number of interesting issues emerged. The two primary issues which were revealed in the data analysis will be addressed in detail in the remainder of this section and are outlined in table 7.1, but this section will first provide an overview of the significance of this aspect of the study in the context of the relevant literature.

<table>
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<th>Table 7.1: Core Discussion Points for Research Question One</th>
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<td><strong>7.2.1.</strong> The embeddedness of an entrepreneurial logic at the micro-level influenced the personal attitude of academics towards the desirability of the entrepreneurial</td>
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7.2.2. The embeddedness of an entrepreneurial orientation was reflected in both the perceived causal impetus and the perceived functional and representational legitimacy of the entrepreneurial role frame.

7.2.3. Congruence between the academic and entrepreneurial role frames emerged as entrepreneurship was recognised as a means of resolving existing role anxieties and contradictions.

The findings demonstrate that embedded role frames interact with personal attitudes towards entrepreneurial behaviour in the university context in a number of ways. They bring to light a number of important issues in the context of the university based entrepreneurship literature, and demonstrate the importance of role identity considerations in the proliferation of entrepreneurial intent in the academic context. Firstly, the findings demonstrated the manner in which the embeddedness of an entrepreneurial orientation at the micro-level of action was manifested in perceptions of role tensions and contradictory logic on the part of academics in either case, and as such revealed the manner in which embedded interpretations of legitimate behaviour in the context of the academic role framed the meaning of entrepreneurial behaviour in different ways for interviewees. Secondly, the findings demonstrated the manner in which congruence between the prevailing and entrepreneurial role frames emerged as entrepreneurship was framed as a means of resolving role anxieties, and thereby served as a means of reconciling contradictions in the prevailing institutional logic.

These findings make a number of contributions to the literature, which will be discussed in detail in the following sections. Firstly, the findings contribute to the ongoing debate on the nature of the re-conceptualisation of the academic role on the part of the individual actor, a phenomenon which is itself fundamental to the emergence of an entrepreneurial orientation in the university (Jain et al. 2009, Lam 2010, Lam 2011, Philpott et al. 2011). As Jain et al. (2009) argue, very little is known about the cognitive underpinnings of the role modification which takes place when academics engage in entrepreneurial behaviour. And similarly, understanding of both the convergence of entrepreneurial and academic logic in this respect, and the nature of
various sources of emergent tensions between the two remains quite limited (Bjerregaard 2010, Philpott et al. 2011).

These findings show that as role tensions represent overlaps in institutional logic in a given domain, they provide individual academics with material for the legitimisation of new practices in their social context. As argued in chapter three, the diverse and contradictory ideas advocated by the multiple institutions which contend for dominance in any context enable social actors to transfer these ideas into new institutional domains, a process itself understood within neo-institutionalism as underpinning the emergence of novelty (Garud et al. 2007). By employing key concepts from Turner’s (1990) theory of role change, this study provides evidence that the micro-foundations of institutional transformation in the university are partially constituted by academics’ interpretation of the logic of entrepreneurial behaviour as a plausible means of addressing prevailing functional and representational role concerns. Congruence between different points on Philpott et al.’s (2011) traditional-entrepreneurial continuum appears to emerge as the logic of one point seems to address the role concerns of another.

**Secondly**, the findings offer fresh insight to current understanding of how the antecedents of entrepreneurial intent are shaped in public universities by demonstrating the influence of role frames as they are embedded in the local institutional logic in this respect (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012). In so doing, they reveal the significance of frame alignment and mobilising resonance in the context of an emerging entrepreneurial university if congruence between more traditional and entrepreneurial role frames is to emerge. In arguing that investigations into the relationship between shared conceptions of social role identity may be valuable in furthering our understanding of entrepreneurial intent, Obschonka et al. (2012) suggest that entrepreneurial behaviour in the university as a behavioural context is perhaps dependent upon the localised cohesiveness of such behaviour. These findings indicate that the extent to which academics in an emerging entrepreneurial university regard this cohesiveness as being present is influenced by the extent to which the role is conceived
of in such a way that allows actors “to link the frame with other things they know, experience, or believe” (Coburn 2006, p.347).

Further to Obschonka et al.’s (2012) observations, this study provides new evidence for the contention that entrepreneurship in the context of the entrepreneurial university is perhaps better understood as not solely a product of Schumpeterian individualism, but rather as a phenomenon which is deeply contextualised in prevailing cultural-cognitive arrangements as they are embedded in institutional logic. This study sheds light on the micro-dynamics which underpin changes in the role identity dimension of this logic, and by doing so contributes an answer to calls within the broader field of entrepreneurship for better understanding of how institutions condition entrepreneurial cognition and action (Thornton et al. 2011, Zahra and Wright 2011, Guerrero and Urbano 2012, Shane 2012). In this respect, the study also extends knowledge in the field of university based entrepreneurship by revealing the perceptual underpinnings of the individual academics’ personal attitude towards the costs and benefits of entrepreneurial behaviour, which Lam (2011, p.1355) describes as necessary for the development of “a broader and psychologically richer” understanding of entrepreneurial behaviour in this context.

Consequently, and thirdly, these findings point to a new direction of investigation for both scholars and practitioners in understanding both the micro-foundations of knowledge transfer between the academy and industry, and the entrepreneurial university itself, by demonstrating the significant influence of role frame alignment in the emergence of entrepreneurship in the academy as a wider social phenomenon. Previous studies have found that entrepreneurially oriented academics display a tendency to interpret their entrepreneurial activities in a manner which frames them as serving traditional academic aims (Mosey and Wright 2007, Jain et al. 2009, Lam 2010, Sanders and Miller 2010). However, few studies have situated this observation within the wider institutional transformation of the university entailed within triple-helix perspectives, and offered conceptual bridges between the macro-level emergence of the third mission and the micro-cognitive processes which inform entrepreneurial intent.
By employing a neo-institutional perspective the study contributes to the development of a theory of action that bridges the structural and individual levels of analysis, addressing a key shortcoming in previous studies (Glenna et al. 2011). The necessity of such a framework is captured in both Glenna et al.’s (2011) and Bercovitz and Feldman’s (2008) contention that the mere existence of macro-level pressures does not guarantee that entrepreneurial initiatives will be embraced. This is a point repeatedly demonstrated in the findings of this study, and in demonstrating the significance of embedded role frames in this respect, the study contributes to this important debate in the current literature. By describing the significance of situated role frames as a moderator of the perceived desirability of entrepreneurship, these findings deepen understanding of the contextual factors which constrain and facilitate the generation, elaboration, and diffusion of role frames which lies at the very core of entrepreneurship in the academy (Colyvas and Jonsson 2011).

Having provided an overview of the significance of these findings in the context of the wider literature in this section, the following sections will discuss the contributions to knowledge made by these findings in greater detail.

7.2.2 Role Tension and Institutional Contradictions

This section will discuss the findings of the study that address the perceived tension between the academic and entrepreneurial role frames as the interviewees interpreted them, and the nature of the role congruence or incoherence which emerged. The significance of this alignment with respect to the personal attitude of the individual is described by Snow et al. (1986) as ‘resonance’, or the mobilising potency of a novel frame as it aligns with prevailing beliefs, values, and interests. The mobilising resonance of an interpretation of the individual’s role is “the degree to which a frame is able to create such a connection, a deep responsive chord with individuals and motivate them to act” (Coburn 2006, p.347).
By describing the framing mechanisms through which the micro-institutional context influenced individual level perceptions of congruence between traditional and entrepreneurial interpretations of the academic role, the findings inform the literature by illustrating the micro-cognitive processes through which role identity interacts with the cultural logic of entrepreneurship in this context (Audretsch and Erdem 2004, Bercovitz and Feldman 2008, Jain et al. 2009). This addresses a key issue within the field, deepening understanding of what Jain et al. (2009, p.923) describe as the inherent significance of role identities in providing “normative support and cognitive focus regarding what constitutes appropriate behaviours and outputs within one’s chosen profession.”

The findings of this study demonstrate that an underlying source of tension in the emergence of entrepreneurial behaviour in the university is weak alignment between the entrepreneurial role frame and the academic role frame as it is embedded in the local context. As outlined in chapter three, the personal desirability of an entrepreneurial act is constrained by the congruence between the novel behaviour and the culturally embedded values which frame social roles in a given context. This is a key argument of neo-institutionalism, as behavioural congruence with externally legitimated structures and behavioural processes is regarded within this perspective as underpinning the legitimacy and success of the actor itself (Meyer and Rowan 1977). Extending this analysis, the discussion in chapter three suggested that re-conceptualisation of the cognitive frame embedded in the local logics of action which itself defines the boundaries of the academic role must be augmented in such a manner that congruence between the two (traditional and entrepreneurial) interpretations can be developed (Jain et al. 2009, Lam 2010). A clear distinction in analysis of the findings from the two cases was the extent to which this congruence was in evidence, illustrating the significance of situated cultural-cognitive structures in the framing of entrepreneurial activity.

The study therefore provides a response to calls within the literature by describing an important micro-level mechanism in both the framing of entrepreneurial behaviour at the individual level, and the evolution of the university itself towards the
entrepreneurial paradigm (Jain et al. 2009, Guerrero and Urbano 2012). Institutional transformation within the university must be understood in terms of behavioural change at the individual level (Bercovitz and Feldman 2008). These findings advance that understanding by demonstrating how locally embedded interpretations of legitimate role behaviour shape the framing of novel role conceptions and determine the meaning that is attached to both their underlying impetus and functional and representational content. By describing the manner in which these dimensions of role interpretations influenced personal attitudes towards the desirability of entrepreneurial behaviour, the findings provide what Jain et al. (2009) call for in a richer and more grounded understanding of the micro-cognitive processes which serve as the foundation of knowledge transfer and the phenomenon of entrepreneurial behaviour in the academy.

Furthermore, the findings make a number of key contributions to the literature by demonstrating the significance of locally embedded interpretive frames in the formation of personal attitudes towards the desirability of entrepreneurship in this respect. These will be outlined in detail in the following sections.

7.2.2.1 Causal Impetus and Top-Down Cultivation of Entrepreneurial Intent

A first contribution offered by these findings is that interviewee perceptions of the underlying causal impetus for the entrepreneurial mission were significant in their overall framing of its legitimacy, and that there were considerable differences in this respect between the Alpha case where the emergence of entrepreneurship was largely planned and policy driven, and the Beta case where it had a much more emergent character. Within role theory, the impetus for role change is understood as a destabilisation of the conditions within which the current boundaries of the role are constructed (Turner 1990). Within those boundaries, a variety of interpretations of the role in question are accommodated at any point in time. Institutional pressure, and the emergence of contending institutional logic, disrupts this accommodation by presenting an alternative “rationale”, “set of expectations”, or set of “intended objectives” through which the role may be re-interpreted (Oliver 1991, p. 161, Kraatz and Block 2008).
Consequently, and as revealed in the findings, the framing of the underlying causal impetus for entrepreneurial behaviour was of much significance in the framing of its legitimacy in the context of the academic role. These findings therefore extend current understanding of the emergence of entrepreneurial universities in general, but in particular inform current debates on the challenges of a top-down cultivation of entrepreneurial propensity in particular (Jacob et al. 2003, Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011). In the Alpha case, this top-down approach prompted a perception of the third mission as a managerialist or political issue, and framed it as an institutionally exogenous pressure representative in some respects of external challenges to the social legitimacy of the university as an institution, and academia as a profession.

This reflects the sense-making process engaged in by individuals when alternative frames within which their work can be interpreted are presented as official policy (Weick 1995), with novel policies being framed within the prevailing local discourse (Bean and Hamilton 2006). Instead of entrepreneurship being perceived as a legitimate elaboration of the academic role then, as it was in the Beta case, it was widely framed in the Alpha context as another dimension of broader pressure to reconstruct the underlying logic of the role. While role elaborations represent incremental changes in the prevailing logic, role reconstructions are significantly more disruptive, represent a greater threat to prevailing institutional arrangements, and trigger greater resistance as a consequence (Oliver 1991, Powell 1991, Jepperson 1991, Colomy 1998).

The emergence of these issues in the Alpha case revealed that a significant challenge to top-down cultivation of entrepreneurial behaviour in that context was the attendant framing of entrepreneurship (as it appeared within official strategy) as a further manifestation of external challenges to the social legitimacy of the academic role, particularly those posed by the state and market forces. This is problematic from the perspective of policymakers in this domain given Oliver’s (1991) proposition that the lower the degree of social legitimacy perceived to be attainable from conformity to a novel behaviour the less likely actors are to engage in it. The findings therefore suggest that the greater the extent to which entrepreneurship as a policy objective is rhetorically
aligned with prevailing political pressures, the more likely academics are to recognise it as representative of external pressure to reconstruct the underlying logic of academic activity, as opposed to a normal elaboration of the academic role. The incongruent logic and attendant illegitimacy of such reconstructive efforts as they are perceived by individuals embedded in the focal institutions is likely to diminish, rather than enhance, the desirability of entrepreneurship as a consequence.

By highlighting the importance of the perceived impetus for role change, these findings present a key dimension of role identity largely overlooked in previous investigations of this construct in the university based entrepreneurship literature. The underlying rationale for alternative role interpretations, particularly in the context of top-down approaches to the cultivation of entrepreneurial orientation, is something which role incumbents were highly cognisant of in the Alpha case, and as such was a factor which informed their attitudinal responses. This is a key point, and deepens understanding within the university based entrepreneurship literature of what Suchman (1995, p.574) describes as the importance of cultural congruence in policy initiatives, as it underpins “the existence of a credible collective account or rationale explaining what the organisation is doing and why.” This is similarly reflected in Gonzales’ (2013) study of significant management sponsored change in a university context where weak cultural credibility undermined management efforts. Alpha case academics, as a focal point of strategic visions pertaining to the entrepreneurial university, framed university policy in this respect as the emergence of a rival interpretation of the academic role. As such, the degree of alignment of its attendant “rationale, set of expectations, or intended objectives” (Oliver 1991, p.161) with the academic role as they interpreted it had significant implications for the mobilising resonance of entrepreneurship in that context.

This finding extends Philpott et al.’s (2011) suggestion that top-down policy may actually diminish entrepreneurial enthusiasm in this context, by demonstrating that weak alignment with prevailing interpretations of the academic role may contribute only to a heightened sense of incongruence and tension between the contending role frames in this respect. The “empirical credibility” (Coburn 2006, p.359) of university
policy is grounded in the local empirical experience and institutionalised logic. Therefore, the perceived functional and representational congruence of emergent or rival frames as they are presented within official policy seems critical to that policy’s chances of success.

7.2.2.2 Causal Impetus and the Legitimising Effect of History

A related and second contribution offered by the findings in this respect is the role of history and tradition in framing the perceived causal impetus for entrepreneurship as it did in the Beta case. Both Powell (1991) and Seo and Creed (2002) stress that individual choice and preference cannot be fully understood apart from their socio-historical settings, and the impact of the embedded role frame in the Beta case demonstrates the significance of this principle in the context of entrepreneurship orientation in the university. In contrast to their Alpha case counterparts, academics in the Beta case framed the causal impetus for entrepreneurship not as managerialist or instrumentalist in its origins, rather they characterised it as an endogenously generated elaboration of the traditional academic role and therefore aligned and fundamentally congruent with it. This interpretation was a product of the historically legitimated pattern of entrepreneurship in the Beta context, which framed entrepreneurship as functionally and representationally legitimated mode of behaviour. This finding therefore extends previous studies by Kenney and Goe (2004) and Colyvas and Powell (2006) by demonstrating an important effect of the local historical context in which academics are embedded. In particular, it further understanding of Kenney and Goe’s (2004) finding that stronger support for entrepreneurship is in evidence when entrepreneurship is framed as traditional strength of the university by demonstrating how this value is embedded in prevailing role frames and has consequences for desirability perceptions.

The key distinction between the two empirical cases in this respect was the framing of the extent to which entrepreneurial behaviour represented a disruptive challenge to the social legitimacy of the academic role. Entrepreneurship, as no more than an
elaboration of the academic role in the Beta case, was not regarded as a contestation of the social legitimacy of academic behaviour. In the Alpha case, and in the absence of the same embeddedness of an entrepreneurially oriented role frame, the top-down approach to cultivating entrepreneurial intent had the effect of triggering perceptions of incongruence, diminishing the perceived desirability of entrepreneurship in the process. As Colomy (1998) argues, role re-conceptualisations can take on an elaborative or a reconstructive character, the former being primarily concerned with incremental and procedural alteration of the institutional order and largely aligning with traditionally legitimated interests. By utilising insights from role change theory, this study finds that the latter form of role re-conceptualisation, absent of such traditional legitimisation is much more dependent on the legitimacy instead afforded to it by its alignment with prevailing functional and representational concerns.

This extends understanding of the dangers of policy imitation in the sphere of university based entrepreneurship (Philpott et al. 2011), as the idiosyncratic trajectories of universities produce unique arrangements of “psychological, historical, political, social and cultural bases of values and how they tie to people’s lived realities” (Tsirogianni and Gaskell 2011, p.456). As Lam (2010, p.308) suggests, much previous research in the field has “largely neglected the deeper cultural-cognitive aspects of the change process” which universities undertake as they adapt to the entrepreneurial mission. These findings address this shortcoming in the literature by demonstrating the manner in which these cultural-cognitive underpinnings are closely linked to the perceived desirability of entrepreneurship, and subsequently to the success of policy initiatives in this domain.

7.2.2.3 Comparing Planned and Emergent Entrepreneurial Role Frames

A third contribution made by these findings to the university based entrepreneurship literature is an in-depth contrast of planned and emergent entrepreneurial universities in terms of the underlying legitimacy of the entrepreneurial role in either case. This is significant in the context of ongoing discussion in the literature as to the significance of
the top-down (planned) versus ‘bottom-up’ (emergent) patterns of entrepreneurial university creation (or emergence) (Philpott et al. 2011). Previous studies (Mowery et al. 2002, Colyvas and Powell 2006, Berman 2008) point to the emergence of university entrepreneurship in the U.S. context as being marked by a process of gradual institutionalisation of such behaviour over several decades. By contrast, studies such as those by Goldfarb and Henrekson (2003), Braunerhjelm (2007), and Philpott et al. (2011) point to comparatively problematic experiences in the European context where top-down approaches have often failed to generate supportive cultures for entrepreneurial activity. The impact of institutionally embedded role frames on personal attitudes towards the entrepreneurial act, and consequently, on the act’s desirability seems an important mechanism through which problematic experiences are manifested. An enthusiastic drive on the part of university administrators towards the entrepreneurial ideal may be frustrated by the functional and representational role tensions which emerge between the prevailing role frame and its entrepreneurial counterpart.

Cultural, historical, and institutional context serves to shape the likely character of an embedded role frame (Tsirogianni and Gaskell 2011), and as such, it seems likely that in generating a role frame with which individual academics can link their own beliefs, values, and experiences, university administrators and entrepreneurial agents are required to develop idiosyncratic and locally attuned narratives for the third mission. What may resonate and legitimise entrepreneurial behaviour in one context may not produce the same response in another. As Snow et al. (1986) suggest, the power of a particular frame to motivate is dependent upon the extent to which claims about legitimacy are believable for their recipient. The empirical credibility of these claims are, however, grounded in local experience and institutionalised logic. The findings of this study therefore support Rooney et al.’s (2005) assertion that top-down, or technocratically oriented policy discourse related to the knowledge economy struggles to adequately cope with this institutional complexity because of a lack of understanding of the dynamics which shape micro-level relational systems and knowledge flows.
This study contributes to the development of that understanding by demonstrating the significance of institutionally embedded interpretive frames in the formation of personal attitudes towards the desirability of behaviour which constitutes an elaboration of prevailing institutional orthodoxy. As such, the study also extends Braunerhjelm’s (2007) contention that failure of policy in this domain reflects weak understanding of micro-level conditions in the environment of the potential entrepreneur. By deepening understanding of how role frames interact with the “inner logic” of academic work that Etzkowitz (2003, p.109) describes as being fundamental to the university’s transformation, the study offers some redress to this shortcoming.

7.2.2.4 Role Content and the Embeddedness of Entrepreneurial Logic

A fourth contribution made by these findings is the description of the manner in which the content of the entrepreneurial role frame was interpreted by academics in the Alpha and Beta cases. In the Alpha case, an emerging entrepreneurial university, interviewees pointed to a range of elements within the entrepreneurial academic role frame which they regarded as problematic, which led them to point to tensions between legitimate academic behaviours and the behavioural implications of the third mission narrative. These role concerns took on two distinct dimensions, in that they were regarded by Alpha case interviewees as either relating to the function of the academic role, or its representational characteristics (Turner 2006). These concerns reflect Brown et al.’s (2012) assertion that the appeal of an emerging logic of action is dependent upon its alignment with notions of functional or moral appropriateness in a given context. The extent of this alignment is revealed and manifested in the mobilising resonance and consequently the motivational force of the entrepreneurial frame. In this respect, interviewees in the Alpha case consistently referred to a number of factors which undermined the mobilising resonance of the ‘third mission’, affording these concerns much greater significance than their Beta case counterparts. As such, the findings indicate that the functional and representational dimensions of locally embedded role frames are an important element of what both Kenney and Goe (2004) and Colyvas and Powell (2006) refer to as the social embeddedness of university based entrepreneurship.
The nature of these frame engendered role concerns, or points of role tension, revealed in the context of university based entrepreneurship the importance of the dynamics of role change as they are understood in sociological perspectives. Turner’s (1990) model of role change points to the impetus for this change arising out of perceptions of role dysfunctionality or unacceptable role representationality on the part of role incumbents. A major point of distinction between the Alpha and Beta cases was the extent to which academics identified the content of the entrepreneurial role frame as a source of functional or representational concerns, which in turn shaped the mobilising resonance of the entrepreneurial role for them.

The key distinction between the two cases in this study was the extent to which reconciliation of contradictions between the entrepreneurial and academic roles was embedded in the prevailing interpretations of functionally and representationally legitimate academic behaviour. Representational concerns related to academic independence in the Alpha case, for example, were reconciled with notions of enhanced academic autonomy in the more entrepreneurially oriented Beta context. This enhances current understanding of the micro-cognitive interpretive process involved in the integration of academic and entrepreneurial role conceptions, a challenge identified by Jain et al. (2009) as a central one within the field.

Additionally, however, it contributes to contemporary knowledge of the micro-cognitive foundations of the institutional transformation entailed in triple-helix perspectives of the university (Philpott et al. 2011, Guerrero and Urbano 2012). In particular, and of much significance in the context of debate on top-down approaches to the cultivation of entrepreneurial intent (Philpott et al. 2011), these findings demonstrate the importance of frame articulation and value amplification in proliferation of entrepreneurial desirability. Such top-down initiatives are framed by the rhetorical strategies engaged in by university leadership as the rationale for policy is first ‘articulated’ in a sense that unifies its content with prevailing beliefs and experiences, and secondly by the extent to which the values which hold most salience for academics are ‘amplified’ in a manner which throws certain dimensions of modified role frames into sharp relief (Snow et al. 1986, Benford and Snow 2000).
In this respect the findings suggest that the individual level academic reframing of entrepreneurial activity observed in both this and previous studies in the literature (Jain et al. 2009, Lam 2010, Lam 2011, Sanders and Miller 2010, Philpott et al. 2011) needs to be carefully considered in the formulation of policy discourse, as the amplification of the appropriate functional and representational values seems pivotal to the alignment of entrepreneurially and traditionally oriented frames. This extends understanding of the implications of Sanders and Miller’s (2010) finding that engagement in entrepreneurial activities was to some extent driven by the framing of such behaviours as attending to widely valued ends by demonstrating the significance of such alignment in the wider legitimisation and proliferation of entrepreneurial desirability. While Sanders and Miller (2010) express some concern that the proactive reframing of entrepreneurial activities by TTOs may generate and validate weak commitment from academics to industry aims, this study suggests that by engaging in this form of value amplification such practice creates greater resonance with the academic community and as such enhances the desirability of entrepreneurship. The implications for the mobilising resonance of entrepreneurial behaviour are addressed in more detail in the following section.

7.2.2.5 Motivation and the Mobilising Resonance of Entrepreneurship in Academia

A fifth contribution provided by these findings is the demonstration of the significance of frame alignment and mobilising resonance in the context of an emerging entrepreneurial university, if congruence between the dominant and entrepreneurial role frames are to emerge and the prospect of entrepreneurial action is to pose greater motivational force. What motivates academics to act in an entrepreneurial way is a key point of interest in the university based entrepreneurship literature (Morales-Gualdron et al. 2009, Hayter 2011, Lam 2011), as it seems fundamental to the emergence of academic entrepreneurship as a social phenomenon. By employing insights from role change theory these findings show that the desirability and therefore the mobilising potency of entrepreneurship as a behavioural mode is dependent upon interpretations of its functionality and representationality in a given context.
The following chapter will discuss significance of efficacy perceptions in this process, but with respect to desirability these findings suggest that entrepreneurship resonates with individuals when its perceived functional and representational content is aligned with core values as they relate to academic behaviour. As Jain et al. (2009) argue, academic identity is typically cherished by incumbents of that role. Consequently, motivation for deviation from prevailing behavioural standards is heavily moderated by self-regulatory mechanisms which shape the desirability of a novel act (Bandura 1991). It is only when entrepreneurial behaviour is perceived as functionally and representationally beneficial in that context that it takes on a desirable character, and mobilises individuals in its pursuit. With respect to the wider entrepreneurial motivations literature this is an important insight, and it directly addresses Carsrud and Brännback’s (2011) assertion that the relationship between motivation and the contextual settings which shape perceptions of self-interest is poorly understood. As such, this finding also adds to understanding of the under-explored relationship between institutional structure and entrepreneurship at the micro-level (Zahra and Wright 2011, Thornton et al. 2011), and offers a response to Tracey’s (2012) contention that the influence of institutional meaning on perceptions of entrepreneurial opportunities is an under-researched phenomenon.

Having discussed the findings from the first major theme which emerged in response to research question one in this section, the next section will discuss the second of these themes, that is the manner in which congruence between the academic and entrepreneurial role frames emerged as entrepreneurship was interpreted as a means of resolving prevailing role anxieties.

7.2.3 Role Anxieties and the Resolution of Institutional Contradictions

The previous section discussed the findings of the study which revealed the manner in which the divergent degree of embeddedness of entrepreneurial logic at the micro-level in the two cases prompted contrasting interpretations of the functional and representational legitimacy of entrepreneurial behaviour in the academic domain. This
section will discuss the findings of the study from section 5.2.2. These findings demonstrated the manner in which congruence between academic and entrepreneurial role conceptions appeared to emerge as entrepreneurial behaviour was identified as a means of addressing tensions and contradictions which undermined the perceived legitimacy of the academic role. These findings contribute to the literature by describing how the micro-level institutionalisation of entrepreneurial logic was advanced through its alignment with existing role anxieties and institutional contradictions. This advances understanding of the institutionalisation of the third mission generally (Etzkowitz 1998, Benner and Sandstrom 2000, Krucken 2003, Colyvas 2007, Philpott et al. 2011) and the intersection of entrepreneurial and academic logic in particular (Bjerregaard 2010). The resolution of anxieties such as those arising out of role tension is a critical motivational factor in the emergence of novel human behaviours (Giddens 1984). Building on this insight, this study finds that the legitimacy of entrepreneurial acts which deviate from existing role frames emerges, in part, from the extent to which the entrepreneurial role is perceived as addressing functional and representational legitimacy concerns which themselves emerge from contradictions and tensions in existing institutional arrangements.

The study therefore points to an important mechanism through which the reframing process identified in previous studies may be prompted (Jain et al. 2009, Lam 2010, Sanders and Miller 2010). Role concerns related to public service, as well as public perception of academic industriousness had considerable salience in the Alpha case. These concerns or role based anxieties served as an important platform for the micro-level negotiation between traditional and entrepreneurial academic role norms, and laid the basis for the conceptualisation of academic entrepreneurship as a role more congruent with traditional academia. In outlining the conceptual and political underpinnings of the entrepreneurially or commercially oriented academic, Gassol (2007) points to an expectation of academics to generate ‘useful’ information and ‘transfer’ it to the wider economy. In this sense academic entrepreneurship challenges the functional effectiveness of traditional academic activity with respect to the use value of the information or knowledge it generates, as well as its capacity for transferring or communicating this information or knowledge to actors external to academia for whom it would be ‘useful’.
The locally embedded role frame was therefore revealed to be not merely mechanism of institutional persistence, but also a mechanism through which the micro-cognitive changes which underpin institutional transformation could take place. While the underlying logic and attendant content of the academic role frame presented a stubborn obstacle to the emergence of an entrepreneurial orientation in the Alpha case, its own underlying contradictions also served as points of negotiation for the emergence of novel behavioural modes, and subsequent interpretation of those behaviours as more desirable. This is an important insight in the context of Jain et al.’s (2009) contention that the academic identities of entrepreneurial figures in this context are fiercely defended as they engage in such activities, as it suggests that by emphasising and amplifying prevailing anxieties entrepreneurial academics can frame their role modification as better serving the academic function as opposed to deviating from it. In so doing, such individuals demonstrate the dynamic relationship between cultural context and entrepreneurial action by infusing their actions with meaning which has cultural resonance in that context (Greenman 2013).

These findings make a number of contributions to the literature which will be discussed in detail in the following sections.

**7.2.3.1 Role Anxieties and Academic Dysfunctionality**

A first contribution offered by these findings is that in both cases a legitimating feature of entrepreneurship was the manner in which it addressed the perceived dysfunctionality of the traditional academic role as it was interpreted by the interviewees. An important legitimising effect of the third mission narrative, therefore, was its resonance with perceived failings of the academic role with respect to its core aims, such as the dissemination of new knowledge for the benefit of wider society. Comments such as “I can give you countless examples of ideas that I know would and could have ended up in industry processes or as products but never left the office of the person who came up with them...that to me does not seem like a very smart way for research to be used” from interviewee B-7, or “I guess you could say that you’re
contributing to this cloud of stuff that doesn’t necessarily give back. I think that’s an appeal of the commercialisation route in that you’re actually getting stuff into people’s homes...If something is affecting people’s life on a day-to-day basis then that’s a contribution even if it’s a different type of one” from interviewee A-3, reflect the individual actor’s recognition of both the dysfunctionality of academic work with respect to the dissemination of knowledge and the public good served, and also the capacity for the entrepreneurial role to address this concern.

This demonstrates an important source of congruence in the emergence of an entrepreneurial role frame and the reframing of entrepreneurial behaviour as attending to the values and objectives of the dominant logic of action (Sanders and Miller 2010). As argued throughout this study, a key question relating to the emergence of entrepreneurial behaviour is the nature of the underlying mechanisms of role re-conceptualisation. Role dysfunctionality, as an impetus for role change grounded in the role theory literature (Turner 2006), was revealed in the study to be an important avenue for negotiation of the boundaries of role identities embedded in local institutional logic. These findings demonstrate that the emergence of congruence between the prevailing and entrepreneurial interpretations of the academic role frame depends to some extent on the framing of the entrepreneurial role as a strategy for resolving prevailing functional role concerns.

When one considers Snow et al.’s (1986) contention that motivation to engage in behaviour can be socially organised through the skilful alignment of interpretive frames with prevailing worldviews, this finding strongly suggests that the alignment of the third mission narrative with prevailing academic role concerns is a key task facing both local university management and entrepreneurial agents in the cultivation of an entrepreneurial culture. This study therefore builds on Sanders and Miller (2010) findings that TTOs’ reframe entrepreneurial objectives in terms of their academic value by highlighting the critical nature of this activity in the emergence of congruence between academic and entrepreneurial logic. In so doing it answers Jain et al.’s (2009) call to further explore the social-psychological processes of role change in academic
entrepreneurship by demonstrating a key aspect of role change theory (role dysfunctionality) in this context.

7.2.3.2 Role Anxieties and Representational Concerns

A second contribution made by these findings is the description of the manner in which both Alpha and Beta case interviewees identified representationally beneficial elements of the third mission narrative as it pertained to the academic role frame. Unacceptable representationality arises “when the image and sentiment evoked by the role are unfavourable” (Turner 1990, p.88). The description of the findings in chapter five suggests that the legitimacy of third mission activities was recognised by interviewees in both cases as spanning in part from the positive external representation of academia entailed in entrepreneurial action.

Unacceptable representations of academics served as a source of role tension for academics in the Alpha case, and as a point of representational legitimacy for the academic role as conceptualised in the third mission. As described in section 5.2.2, the entrepreneurial role was representationally legitimised in the Alpha case by its capacity for communicating role value to an important legitimacy source, generally conceived of here as wider society but in essence what Deephouse and Suchman (2008, p.54) refer to as an “external audience” with whom lies the power to make significant legitimacy assessments. This mechanism was also observed in Beta case, with entrepreneurial activity aligning with a desire to demonstrate the creativity and innovativeness of academic behaviour to external audiences. In the Beta case, however, the representational effect observed was the reinforcement of the underlying legitimacy of an entrepreneurial role which had already achieved a strong degree of ‘taken-for-grantedness’, or cognitive legitimacy (Suchman 1995).

As evidenced in the discussion of functional role concerns, the effect of representationally oriented anxieties was to serve as a point of negotiation between the
logic of traditionalist interpretations of academia and the logic of entrepreneurship. As they reflected points of contradictory institutional logic for interviewees, these issues served as incompatible pairings of role and function or role and image, and as such provided opportunities for the legitimisation of novel or entrepreneurial practices. To the extent that entrepreneurship was framed in a manner which connected it to these anxieties, or alternatively was framed in a manner which amplified the values which pertained to these anxieties, it resonated as a restorative force for the tenability of the academic role. These findings therefore contribute to understanding of the evolution of an entrepreneurial orientation in the university context by illustrating the micro-cognitive role processes that shape individual shifts in orientation towards the entrepreneurial paradigm (Jain et al. 2009), as such illustrating the manner in which the dynamics of micro-institutional logic interact with and shape attitudes towards entrepreneurial behaviour, answering calls for such findings in previous works (Thornton et al. 2011, Thornton et al. 2012, Guerrero and Urbano 2012).

7.2.3.3 Role Anxieties and Wider Cultural Trends

A third contribution offered by these findings is the demonstration of a relationship between broader cultural trends and the changing conceptualisation of the academic role at the micro-cognitive level. Role theory suggests that broad cultural currents trigger changes in role systems subject to these cultural winds of change (Turner 1990). As the third mission literature makes abundantly clear, the increased pressure on HEIs to demonstrate their economic relevance is part of a broader institutional trend, which as Gumport (2000, p.73) argues, places an expectation upon “public colleges and universities today (to) demonstrate some willingness, if not enthusiasm, to consider market forces and demands for relevance, or else risk losing some legitimacy.” It seems plausible that the role tension articulated by interviewees in the Alpha case with respect to the functionality and representationality of the academic role is itself a manifestation of the impetus for change generated by the aforementioned macro-level trend.
As such, this study suggests that the legitimising effect of these functional and representational concerns have on the entrepreneurial role in academia seems an important mechanism in the legitimisation of the broader institutional logic of the third mission. It is important to note however that despite the impetus for role change provided by these factors, they do not in themselves represent sufficient force for widespread change in role conception by role incumbents. Rather they create opportunities for negotiation of role boundaries, and furthermore, for the emergence of behaviour by institutional entrepreneurs which highlight the inadequacies and shortcomings of prevailing institutional orthodoxy. These findings therefore contribute to the university based entrepreneurship literature by highlighting the significance of what Turner (1990) identifies as the broad cultural currents which destabilise the existing conditions within which the boundaries of the role are constructed.

In so doing, the study provides much needed insight into the manner in which macro-cultural pressures “interact with internal academic structures to influence research outcomes” (Glenna et al. 2011, p.959). As such, the study helps to bridge the macro-micro divide within the field and provides a theory or action which gives appropriate emphasis to both structure and agency, revealing as it does how structural contradictions represent opportunities for institutional entrepreneurship in the academic context. By situating this effect within theories of role change the study makes an important step in understanding of the conditioning effects of institutional logic though the mechanism of role identities (Jain et al. 2009). While macro-level forces are clearly non-deterministic and subject to complex dynamics of interpretation at the micro-level, the findings nevertheless show how they may enable the expression and pursuit of entrepreneurial actions through their exacerbation of role anxieties at a given point in time (Glenna et al. 2011).

### 7.2.4 Concluding Comments for Research Question One

This section has discussed the findings of the study outlined in section 5.2, which describe the mechanisms through which the locally embedded role frame shaped the
personal attitude of academics in this study towards the perceived desirability of entrepreneurial behaviour. The findings of this study have shown that role frames as their dimensions interact with personal attitudes at the micro-institutional level interact with personal attitudes towards entrepreneurial behaviour in a number of important ways. They therefore advance understanding of the significance of role identity in the proliferation of entrepreneurial intent, and make a number of contributions to the university based entrepreneurship literature.

This study has described how the embeddedness of an entrepreneurial orientation at the micro-level of action was manifested in perceptions of role tensions and contradictions by academics in the empirical cases, revealing the manner in which the prevailing logics framed the functional and representational legitimacy of entrepreneurial behaviour in different ways. Additionally, these findings demonstrated the manner in which congruence between the prevailing and entrepreneurial role frames was advanced as entrepreneurship was framed as a means of resolving prevailing role anxieties, and as such served as a means of reconciling contradictions in the prevailing institutional logic. A summary of the contributions of these findings to the literature is provided in table 7.2.
### Table 7.2: Summary of Key Contributions of Findings for RQ 1

<table>
<thead>
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<th>Finding</th>
<th>Key Contributions</th>
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| **7.2.1.** Institutional logic at the micro-level influenced the personal attitude of academics towards the desirability of entrepreneurship *through the interpretive frame provided by embedded role frames* | (1) Congruence between the academic and entrepreneurial role frames emerge as the entrepreneurial logic is framed as a means of resolving prevailing contradictions and anxieties  
(2) The influence of locally embedded role frames on the antecedents of entrepreneurial intent demonstrate the importance of cultural-context in enabling or constraining entrepreneurial action  
(3) Role frame alignment is significant in the emergence of entrepreneurship as a wider social phenomenon in the academy, and provides a bridge between |
### 7.2.2. The embeddedness of an entrepreneurial orientation was reflected in both the perceived causal impetus and the perceived functional and representational legitimacy of the entrepreneurial role.

<table>
<thead>
<tr>
<th>(1) Framing of causal impetus and the attendant cultural congruence of the entrepreneurial mission has significant consequences for effectiveness of top-down entrepreneurial policy.</th>
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<td>(2) The historical embeddedness of entrepreneurship in the Beta case prompted Beta case academics to frame it as normal variability within the academic role and as an extension of functional and representational academic values.</td>
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<td>(3) Closer consideration of the dynamic relationship between role frames and the inner logic of the university context would better align policy with the micro-conditions it seeks to influence.</td>
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<td><strong>4.</strong> The functional and representational dynamics of role change are central to the micro-cognitive interpretive process involved in the integration of academic and entrepreneurial role content</td>
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<td><strong>5.</strong> By framing the perceived functional and representational desirability of entrepreneurship, embedded role identity is a key factor in the motivating potency of entrepreneurship in the university context</td>
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<td><strong>7.2.3.</strong> Congruence between the academic and entrepreneurial roles emerged as <em>entrepreneurship was recognised as a means of resolving existing role anxieties and contradictions.</em></td>
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<tr>
<td><strong>1.</strong> Congruence between prevailing and entrepreneurially oriented academic role frames emerged as entrepreneurship was interpreted as a means of addressing academic dysfunction and attending to core academic values</td>
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<td><strong>2.</strong> Congruence between prevailing and entrepreneurially oriented academic role frames emerged as entrepreneurship was interpreted as a means of addressing representational concerns</td>
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(3) Functional and representational role anxieties reflected broader macro-level pressures and provided opportunities for the negotiation of academic role boundaries, and for the infusion of entrepreneurship with legitimate meaning by entrepreneurial actors
7.3 Dynamics of Legitimation and the Socialisation of Entrepreneurial Desirability

The second part of this chapter will discuss the findings from section 5.3 of the thesis, addressing the manner in which desirability perceptions as they relate to entrepreneurial behaviour were shaped by social norms at the micro-institutional level, and in particular how the local dynamics of legitimation were significant in this respect.

7.3.1. Key Contributions of Research Question Two

Social norms are recognised within the university based entrepreneurship literature as shaping the local entrepreneurial culture through factors such as peer attitudes to entrepreneurial activity, the influence of role models, and formally endorsed approximations of appropriate academic activity (Clark 1998, Owen-Smith and Powell 2001, Kenney and Goe 2004, O’Shea et al. 2005, Stuart and Ding 2006, Braunerhjelm 2007, Azoulay et al. 2007, Bercovitz and Feldman 2008, Jain et al. 2009, Prodan and Drnovsek 2010, Guerrero and Urbano 2012). The relationship between the ‘salient others’ as they are labelled within entrepreneurial intentions frameworks (Krueger 2000) and entrepreneurial intent is manifested in the dynamics of legitimation in which they play a central role as a legitimacy awarding social audience (Ginzel et al. 1992, Suchman 1995, Deephouse and Suchman 2008). As a key factor in shaping of entrepreneurial intent on the part of individual academics then, this situated social audience serves as a fundamental mechanism through which the social embeddedness of an entrepreneurial orientation informs the desirability of associated behaviours (Suchman 1995, Di Maggio 1997).

As argued in chapter three, social norms are especially significant in the context of an emerging entrepreneurial university as significant ambiguity surrounds the nature of the activities in question (Bercovitz and Feldman 2008). Additionally, as Gonzales (2013) illustrates in her study of faculty responses to management driven policy, incongruities and dissonance between policy narratives and their own interpretive frames prompt individuals to seek cues about legitimate responses from salient others in their
institutional domain. This effect helps explain with what Welter (2012) and Kacperczyk (2013) describe within the entrepreneurship literature as the impact of social proximity on entrepreneurial intent, as uncertainty about the legitimacy of an action prompts social actors to seek resolution of that uncertainty in the attitudes of salient others. We have discussed in the previous section the manner in which such perceived behavioural incongruence as it was manifested in the empirical study prompted a range of role concerns for academics. As outlined in chapter three, the local legitimacy dynamics as represented through cues for action from salient figures in the local context therefore appear to be all the more significant in the social construction of perceived desirability of entrepreneurial behaviour, and subsequent engagement in entrepreneurial acts in the academic context.

From the earlier discussion of these issues in this thesis, the following research question emerged:

“How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?”

In answering this question, a number of interesting issues emerged in the relevant findings. The primary factors which were revealed in the data analysis will be addressed in detail in the remainder of this chapter and are outlined in table 7.3, but this section will initially provide an overview of the significance of the issues uncovered in the context of the literature.

<table>
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<th>Table 7.3: Core Discussion Points for Research Question Two</th>
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<td><strong>7.3.1.</strong> The extent of the embeddedness of an entrepreneurial logic at the micro-level was reflected in social norms as they shaped the perceived desirability of entrepreneurial behaviour for academics.</td>
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<tr>
<td><strong>7.3.2.</strong> The perceived behavioural and attitudinal orientation of salient others at the micro-institutional level framed the functional and representational legitimacy of entrepreneurship for academics and shaped the perceived desirability of entrepreneurial behaviour.</td>
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</table>
7.3.3. The embeddedness of an entrepreneurial orientation at the micro-institutional level was reflected in the perceived behavioural and attitudinal orientation of formal leaders at the local level.

The findings show that the perceived desirability of entrepreneurship for academics as it is shaped by social norms is influenced by the micro-institutional context in a number of significant ways. The local legitimacy dynamics observed reflected the embeddedness of an entrepreneurial orientation in both the Alpha and Beta cases, with the behavioural and attitudinal orientation of salient others playing a significant role in the framing of the functional and representational legitimacy of entrepreneurial action.

Therefore, the micro-institutional dynamics shaped desirability perceptions in the empirical cases not only through the framing of role interpretations which shaped personal attitudes, but also through the social influence of role models, peers, and individuals in positions of formal authority. Role models emerged from analysis of the data as significant in the framing of means-ends assumptions as they pertained to entrepreneurship. In this respect, the accumulated evidence of entrepreneurial successes was also revealed to be particularly significant in the reconciliation of representational concerns. Peer attitudes were also shown to be an important factor in the valuation of entrepreneurship with respect to its prestige bearing outcomes. Finally, local leaders in positions of formal authority were influential in the formation of perceived role expectations, as well as both formal and informal evaluative role pressures as the interviewees interpreted them.

These findings make a number of contributions to the literature, which will be discussed in more detail in the following sections.

Firstly, the findings add to understanding of the cognitive underpinnings of the entrepreneurial university by highlighting the relationship between the functional and representational role dimensions of entrepreneurial behaviour and the pragmatic, moral,
and cognitive legitimating dynamics which greatly influence its perceived desirability (Etzkowitz 1998, Bercovitz and Feldman 2008). Both the functional and representational dimensions of a social role have a basis in consequentialist moral legitimacy, as the underlying rationalisation for a role’s existence is based on its attendance to pro-social values and behaviours (Suchman 1995, Turner 2006, Deephouse and Suchman 2008). By describing the influence of successful entrepreneurial figures on these dimensions in the context of university based entrepreneurship, these findings deepen understanding of the manner in which the agency of these entrepreneurial actors changes the institutional context within which the legitimacy of their behaviour is defined. Role functionality, while in some respects analogous to pragmatic concerns, is nevertheless interpreted in terms of an underlying pro-social function which provides the role with its moral legitimacy. Brown et al. (2012) acknowledge this assertion in describing the appeal of novel institutional logic as spanning from functional as well as moral assumptions of appropriateness. Therefore, the pragmatic or functional appeal of a novel logic is informed by underlying concepts of what is appropriate in a given context.

These findings suggest that the emergence of entrepreneurial logic in a university context is marked by a progression from pragmatic, to moral, and then cognitive legitimacy (Suchman 1995, Etzkowitz 1998, Deephouse and Suchman 2008). Assumptions of representational appropriateness in the context of the academic role were explained in terms of the perceived functional value of entrepreneurship. This assumed representational appropriateness in turn facilitated the ‘taken-for-grantedness’ of entrepreneurship as a legitimate behaviour in the prevailing institutional logic. Moral legitimacy is evaluative in nature (Suchman 1995), and as evidence mounts of the pragmatic legitimacy of entrepreneurship as a means to morally legitimate ends, moral objections appear less significant and representational role concerns less relevant. In describing the legitimating dynamics through which this occurs, this study builds on previous assertions within the literature that institutional culture may be changed through entrepreneurial success (Owen-Smith and Powell 2001, Fritsch and Krabel 2012). These findings indicate that research in the field of university based entrepreneurship would therefore do well to focus on the distinction between the pragmatic, moral, and cognitive embeddedness of entrepreneurial legitimacy, as the
nature of the legitimacy deficits in question have significant implications for both policy and management strategy (Suchman 1995).

**Secondly**, the findings build on previous studies on the significance of social status to both the perceived desirability of entrepreneurial behaviour in the academy and its socialisation as a behavioural norm (Owen-Smith and Powell 2001, Kenney and Goe 2004, Stuart and Ding 2006, Bercovitz and Feldman 2008). Battilana (2006) illustrates the manner in which social position represents an enabling condition for acts of institutional entrepreneurship, employing Bourdieu’s field concept to demonstrate how social actors may initiate change in the institutional logics which govern a particular domain (Bourdieu 1990). In the context of university based entrepreneurship, Bjerregaard (2010, p.102) similarly points to the significance of Bourdieu’s concept of ‘habitus’, or “the institutional competences” acquired by actors through their participation in given fields in the intersection of academic and industrial or commercial logic.

The findings of this study suggest that individuals in possession of significant academic field capital “comprising symbolic value and distinction through peer recognition in the field of university research” (Bjerregaard 2010, p.102) play a significant role in the local dynamics of legitimation and represent an important dimension of the socialisation of entrepreneurial desirability. The reflexive process of self-comparison through which individual actors regulate their behaviour denotes role models as influential figures in the formation of attitudes towards given behaviours (Bandura 1991). As academic actors seek to acquire academic capital, psychological matching of cognitive and behavioural processes is engaged as the actors model themselves on figures who are distinguished by their acquisition of this symbolic value (Merton 1968, Bandura 1986). The desirability of an entrepreneurial behavioural orientation in a given environment is therefore subject to the behavioural and attitudinal orientation of high status figures against whom other academics are likely to compare themselves. This analysis adds new support to studies within the university based entrepreneurship literature which stress that the attraction of highly entrepreneurial individuals may be significantly more effective in encouraging entrepreneurship than the incentive

**Thirdly**, the findings advance current understanding of the underlying motivational factors which drive entrepreneurship in an academic environment by highlighting the significance of legitimacy dynamics in the perception of entrepreneurship as desirable. The embeddedness of entrepreneurial logic in the micro-institutional context in both cases was manifested in the local dynamics of legitimation which influenced the interviewed academics’ perception of the associated costs and benefits of entrepreneurial behaviour. Esteem needs are a critical underlying driver of social behaviour, and as evidenced by the findings, the micro-dynamics through which institutional logic is manifested in everyday life are highly significant in the framing of entrepreneurship as an opportunity to satisfy those needs.

Previous studies such as those by Morales-Gualdron et al. (2009), D’Este and Perkmann (2011), Lam (2011), Hayter (2011), and Abreu and Grinevich (2013) illustrate the range of factors which serve as motivational triggers in the pursuit of entrepreneurial endeavours in the academy, all of which to greater or lesser degrees reflect a pursuit of academic capital, with academics frequently describing their activities in those terms (Jain et al. 2009, Lam 2011). However, the expected utility and legitimacy of entrepreneurship as a means of accumulating academic capital and thus satisfying underlying esteem needs is shaped in part by the local dynamics of legitimation. These dynamics are in turn reflected in the behavioural and attitudinal orientation of the salient others who constitute the local social audience. In this sense the findings of this study demonstrate that the motivational force of entrepreneurship is to some extent dependent upon the degree to which it has been framed as a legitimate means of achieving pro-social ends within the embedded institutional logic, which itself describes the manner in which academic capital may be attained (Bjerregaard 2010).

Finally, the findings make a **fourth** contribution to the university based entrepreneurship literature by pointing to the significance of organisational governance
in the emergence of entrepreneurial intent in the academy. While previous studies have pointed to the significance of governance structure in the emergence of the entrepreneurial university (Clark 1998, Audretstch and Lehrmann 2005, Debackare and Veugelers 2005, O’Shea et al. 2007) few, as Bercovitz and Feldman (2008) argue, have demonstrated the importance of formal authority figures in the socialisation of entrepreneurial norms. Occupation of higher positions in the organisational hierarchy invests significant power in actors with respect to their capacity for the cultivation of divergent institutional behaviours (Battilana 2006). How this capacity is manifested in the context of university based entrepreneurship, however, is largely unknown (Bercovitz and Feldman 2008).

The findings presented by this study suggest that the institutional transformation envisioned within triple-helix perspectives of the entrepreneurial university (Etzkowitz et al. 2000, Etzkowitz 2003) is significantly affected by the attendance of local authority figures to entrepreneurially congruent values. The influence of such figures was manifested in the findings in the form of role expectations and evaluative role pressures as they were interpreted by academics. By describing how the perceived desirability of entrepreneurship was influenced by these expectations and pressures, these findings build on Bercovitz and Feldman’s (2008) assertion that micro-organisational processes within which such individuals play a significant role may be a critical dimension of the relationship between the university as a context for action and the emergence of entrepreneurial behaviour.

Having given an overview of the significance of these findings to the literature in this section, the following sections will discuss the contributions made by the findings in greater detail.
7.3.2 Salient Others and the Informal Legitimisation of Entrepreneurial Norms

This section will discuss the findings of the study which detail the manner in which local legitimacy dynamics shaped the socialisation of entrepreneurial norms through the informal action of salient others in the empirical cases, and subsequently influenced the perceived desirability of entrepreneurial behaviour for academics (section 5.3.1). These findings highlighted (1) the significance of identifiable role models in the socialisation of entrepreneurial norms, (2) the impact of role models on the framing of means-ends assumptions embedded in the local institutional logic, (3) the manner in which functional legitimacy demonstrations facilitated the reconciliation of representational concerns, and finally (4) the manner in which the legitimacy of entrepreneurial behaviour was reinforced by peer attitudes as they informed interviewee perceptions of the social value and subsequent prestige associated with such action.

These findings consequently reveal and describe the influential character of legitimacy dynamics as they are manifested in micro-environments on the proliferation of entrepreneurial desirability, thus answering calls in the literature for deeper exploration of both the contextual factors which shape the antecedents of entrepreneurial behaviour (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012) and the mechanisms through which entrepreneurial desirability is socially reinforced (O’Shea et al. 2007, Bercovitz and Feldman 2008, Guerrero and Urbano 2012, Goethner et al. 2012). The contribution made to the literature by specific aspects of the findings will be presented in the following sections.

7.3.2.1 Legitimacy Dynamics and the Identification of Entrepreneurial Role Models

A first key contribution offered is the description of the manner in which legitimated role definers served as an important influence on the desirability of career trajectories in both cases. While scholars within both the mainstream entrepreneurship and university entrepreneurship literatures have suggested that role models may be an important factor in the emergence of an entrepreneurial culture (Venkataraman 2004, O’Shea et al. 2007), few studies have examined the micro-level mechanics of the relationship between role models and the antecedents of entrepreneurial intent (Bosma et al. 2011). Studies that have sought to empirically investigate this link have tended to focus on the relationship between role models and perceptions of feasibility (Prodan and Drnovsek 2010), emphasising the impact of role models on self-efficacy assessments. By contrast, the implications for desirability, a distinctive factor in identification of entrepreneurial opportunities, has received little attention.

This study therefore deepens understanding of how this alternative effect is manifested in the context of university based entrepreneurship by illustrating the signalling effect of role models with respect to the functional and representational legitimacy. In so doing the findings complement previous studies which contend (Owen-Smith and Powell 2001, Philpott et al. 2011) that a lack of entrepreneurial academic role models is a stifling internal barrier to entrepreneurship, but expand understanding of the
significance of this effect within the broader emergence of an entrepreneurial logic. By illustrating the significance of this effect in the local dynamics of legitimation, the study extends understanding of the process through which entrepreneurial individuals can shape institutional structures in a way that better supports their own values (Glenna et al. 2011). As such it contributes to the literature’s attempts to uncover how micro-level behavioural dynamics of successful entrepreneurs may transform the “inner logic” (Etzkowitz 2003, p.109) of universities and ultimately shape “the macro-culture of our academic institutions. (Jain et al. 2009, p.923).

As proposed within the neo-institutional literature, role models as figures worthy of emulation acquire this status in an institutionalised context as a consequence of their perceived attendance to legitimated goals and values as they are perceived by a situated collective audience (Battilana 2006, Deephouse and Suchman 2008). An individual’s regulation of their behaviour is based, in part, on a process of social comparison, as in the absence of absolute indicators of adequacy performance is judged as it relates to the performance of salient others (Bandura 1991). As institutions provide actors in a given domain with shared frames of interpretation, certain values become embedded within these frames which inform what is regarded as appropriate social behaviour, and against which personal standards may be set (Bandura 1991). In essence then, role models, as they relate to collective principles against which performance is assessed in social systems, serve as exemplars in the enactment of legitimate goals and values which have salience for institutionally embedded individuals. In regarding certain, socially proximate figures as role models, and consequently as the embodiment of some form of institutionally defined success, academics in this study also recognised their attendant behaviours as indicative of functionally and representationally legitimate standards against which their own performance as academics could be compared.

Accordingly, the extent to which there were identifiably successful figures in the local context who had in the attainment of that success engaged in entrepreneurial behaviour served as a powerful cue for other actors as to the legitimacy of that entrepreneurial action. Such cues in turn help to construct cognitive frames through which behaviours are interpreted, as their perceived desirability is greatly influenced by the likelihood of
them increasing or decreasing similarity to admired individuals (Gibson 2003). This represents a significant mechanism through which cognitive underpinnings of entrepreneurial intent are shaped by role models in the university context. As March and Olsen (2005) suggest, in defining roles for individual actors, institutional logics impress upon the individual both the type of person they are and the type of person they want to be. In highlighting how this effect is manifested this study enhances understanding of how micro-level dynamics of institutional logic shape entrepreneurial intent in the university context (Guerrero and Urbano 2012). An important manifestation of local legitimacy dynamics with respect to entrepreneurial intentionality in the university, therefore, is their shaping of actors’ preferences about what (and who) it is they come to compare themselves with, and what it is they determine as indicative of success.

7.3.2.2 Role Models and the Framing of Means-Ends Assumptions

A second key contribution made to the literature is the description in the findings of the significance of role models in framing the embedded means-ends assumptions of academics at the micro-institutional level. These findings therefore build on Owen-Smith and Powell’s (2001) finding that the effects of success are significant in the emergence of an entrepreneurial culture by revealing how means-ends assumptions which had consequences for the functional and representational dimensions of prevailing role frames were changed in this way.

Across both cases, career aims such as furthering one’s research agenda and building a research profile were predictably identified as functionally and representationally legitimate, both these issues being well established in the literature as having salience in the academic profession (Olssen 2002, Wright et al. 2009). Indeed as many scholars in the university entrepreneurship literature have identified, such aims are frequently cited in rationalisations of their behaviour by entrepreneurially oriented academic actors (Jain et al. 2009, Lam 2010), to some extent serving as ‘buffers’ or ego defences against role incongruence (Jain et al. 2009). While demonstrating the potential for
entrepreneurial activities to serve these legitimated aims seems an important mechanism through which role models shape the desirability of entrepreneurial behaviour, its operation has not been afforded much attention in the literature (Bosma et al. 2011). Though role models may play an important part in the cognitive boundary spanning required for the emergence of entrepreneurship, little is known about the institutional mechanisms through which this takes place (Grimaldi et al. 2011).

The findings of this study suggest that the significance of role models in this respect is the institutionally entrepreneurial effect of pursuing legitimated institutional aims through institutionally novel activities (Battilana 2006). The major distinction which emerged between the two cases on this issue was the degree to which academics associated entrepreneurial activities as consistent with furthering their research agenda and building a high profile reputation. The primary impact of role models therefore was to make manifest a link between entrepreneurial actions and institutionalised aims, framing assumptions about means-ends relationships for observers and thereby shaping the prevailing logics of action. This further develops the assertion that Bourdieu’s (1990) habitus concept provides a useful analytical lens for understanding the micro-level underpinnings of inter-institutional collaborations (Bjerregaard 2010), as the findings show that the institutional competence and capital embodied in role models seems critical to the intersection and reconciliation of the industry and academic paradigms within the triple-helix.

On a related note, a large proportion of studies within the university entrepreneurship field focus on ‘elite’ academics who possess significant personal prestige (Jain et al. 2009, Lam 2010) and, as Colyvas and Jonsson (2011) suggest, may consequently yield significant and atypical levels of social influence. Such status, or academic capital (Bourdieu 1975, Bjerregaard 2010), affords individuals protection from social sanctions, mitigating the legitimacy risks associated with entrepreneurial action (Stuart and Ding 2006). It seems plausible that for the vast majority of academics whose views are less represented in the literature, such agency is greatly constrained by their less prestigious status in the academic domain, and concerns related to the cost of entrepreneurship to research may have been somewhat overlooked.
In that sense it is important to consider the views from Alpha case academics on the perceived ‘opportunity cost’ of entrepreneurship, as this was another important mechanism through which locally embedded logic shaped intent to behave entrepreneurially. Sorensen (2011) argues that the relationship between the workplace as a context for action and entrepreneurial intent on the part of individual actors is significant due to the manner in which this context defines the opportunity cost of entrepreneurship through their policies and their provision of opportunity for upward mobility. This study provides a new perspective on how this effect is manifested in the academic workplace. The findings demonstrated that perception of opportunity cost in this context is a factor which may significantly impact on the desirability of entrepreneurship for academics in an aspiring entrepreneurial university. In addition, these perceptions also appear to hinge on the presence of role models which provide cues as to the severity of this cost.

This contribution both enhances understanding of how and why role models matter (Owen-Smith and Powell 2001, O'Shea et al. 2007, Prodan and Drnovsek 2010, Bercovitz and Feldman 2008, Philpott et al. 2011) but also deepens understanding of the importance of opportunity cost assumptions as they are embedded in the prevailing logics of action (Bozeman 2000, Goldfarb and Henrekson 2003, O’Shea et al. 2004). This finding also demonstrates how this effect may be psychologically significant in the formation of entrepreneurial intentions in the academy (Goethner et al. 2012, Obshonka et al. 2012). As argued in chapter two, this is a critical element of the wider social significance of the entrepreneurial university itself, and as such, understanding the micro-level mechanisms through which this context-cognition effect is manifested is of great importance.

7.3.3.3 Legitimacy Dynamics and the Emergence of Entrepreneurial Intent

A third contribution offered by these findings is that aspiring entrepreneurial universities need to pay much greater attention to attracting or effectively situating individuals with strong entrepreneurial orientation and creating the necessary social
environment for entrepreneurship if they are to overcome the persistence of traditional attitudes (O’Shea et al. 2005, Mosey and Wright 2007, Veciana and Urbano 2008, Clarysse et al. 2011). The findings presented in this study suggest that early career stage academics with a strong entrepreneurial disposition may in the absence of such figures depart the organisation, as the dissonance generated by differences between personal orientation and locally legitimated activities may only be resolved through that action (Özcan and Reichstein 2009). Alternatively, such individuals may simply lose interest in entrepreneurial activities as the legitimacy costs bestowed upon them, and the resultant decline in desirability, alters their perceptions of self-interested behaviour. Indeed such effects are widely predicted within the neo-institutional perspective (Green et al. 2009) and may offer some insight into the relationship between length of service in a single organisation and low levels of entrepreneurial intent (Kacperczyk 2013).

As discussed above, these findings suggest that a key function of role models in the emergence of entrepreneurial orientation in a university is their re-casting of means-ends assumptions in the prevailing institutional logics. In this respect, the findings of this study contribute to the literature by providing an interpretation of role models as acting to some extent as institutional entrepreneurs who shape the attractiveness of an activity in a local context by presenting it as an opportunity within prevailing interpretations of what is or isn’t attractive. As Deephouse and Suchman (2008) conclude, the nature of legitimacy is that it provides a ‘logic of confidence’ (Meyer and Rowan 1977) for social actors through the production of ‘positive feedback loops’. Indeed as interviewee B-4 from this study noted, “Role models are really important, people see that this professor’s research team is growing and becoming more successful and we can show them why this is the case... And when people see that, more of them are encouraged to try this themselves, and these positive cycles develop.” For academics in the Beta case, such ‘positive’ cycles emerged from the repeated reinforcement of an interpretive framework within which entrepreneurial behaviour was cast as means of exemplary performance with respect to legitimated aims.

The essence of legitimacy within any institutionalised logical framework is, as Deephouse and Suchman (2008, p.61) describe, its “win-win” character as ever
growing circles of mutual affirmation confirm the legitimacy of the behaviour to social actors. This of course is not to suggest that the behaviour is objectively a ‘win-win’ exercise rather that this is where the attention is directed for institutionally embedded actors. In suggesting that a critical function of role models is their construction of these mutually affirmative or ‘win-win’ interpretive frames in the context of university based entrepreneurship, these findings further understanding of the self-reinforcing cycle through which entrepreneurial success stories re-shape the inner logic of academic environments (Owen-Smith and Powell 2001, Wright et al. 2007). In their absence, the ‘win-lose’, or zero-sum game (Deephouse and Suchman 2008), dimension represented by ‘opportunity cost’ concerns as in the Alpha case remain prominent within the institutionally embedded logics of action.

7.3.3.4 Legitimacy Dynamics and the Reconciliation of Representational Concerns

These findings make a fourth contribution to the literature in pointing to a number of interesting ways in through which local legitimacy dynamics appeared to reconcile representational concerns with respect to entrepreneurship in the empirical cases. This adds to the literature by identifying a key mechanism which explains how entrepreneurial activity reshapes university culture (Owen-Powell and Smith 2001, Wright et al. 2007), and consequently the underlying institutional logic which provides entrepreneurship with meaning in the local context. Firstly, the representational legitimacy concerns associated with pecuniary gain were significant in the Alpha case, reflecting the proposition that the appeal of a novel or ‘insurgent’ logics of action depends to some extent on embedded attitudes towards its moral appropriateness (Suchman 1995, Brown et al. 2012). In the absence of widespread and mutual affirmation of the legitimacy of entrepreneurial behaviour as a means of pursuing legitimate aims (as in the Beta case), uneasiness related to the appearance of pursuing financial gain impacted the desirability of entrepreneurial behaviour in the Alpha case. Interviewees aligned entrepreneurial behaviour with the ‘double-jobbing’ issue, for example, an issue which was regarded as having negatively affected the representational legitimacy of Alpha case academics. Entrepreneurial action was
consequently regarded as carrying with it the risk of a representational legitimacy cost, an effect that counted against its perceived representational benefits.

Such costs are understood within the neo-institutional literature as threatening an actor’s congruence with important cultural-cognitive standards (Meyer and Rowan 1977), therefore threatening what Giddens (1984, p.54) describes as the “basic security system of the self” which seeks stability in this respect. In the context of an emerging entrepreneurial university, the ambiguity and uncertainty surrounding the legitimacy of entrepreneurial action renders such concerns all the more significant (Bercovitz and Feldman 2008). While Lam (2010) points to the potentially enabling quality of this ‘sociological ambivalence’ for elite academics, these findings suggests that this ambivalence may prompt representational concerns for academics more typical of the wider population in this respect.

The distinction in prevailing attitudes towards the issue of pecuniary gain was an interesting point of contrast between the Alpha and Beta cases, illustrating the manner in which the embedded logics of action provided the meaning which was attached to modes of social behaviour (Thornton and Ocasio 1999). While Beta case interviewees acknowledged that pecuniary gain was perhaps a source of contention in the context of an academic role, they regarded such concerns as largely unfounded and typically stressed that any costs were more than offset by the benefits such activities generated. The beneficial nature of entrepreneurship was expressed in terms of the autonomy afforded to academics by the revenue generated, and the enhanced control over their own careers attained as a consequence.

In an important sense then, embedded attitudes towards entrepreneurial behaviour framed its outcomes as attending to values characteristic of Olssen’s (2002) ideal-type public university, academic autonomy being enshrined within such frameworks as an institutional ideal. Therefore, the perceived functional legitimacy of entrepreneurship reconciled representational concerns related to sensitive issues such as financial gain. While the reframing of commercial ends as serving academic goals is recognised within
the literature as an important factor in the expansion of the traditional academic role (Mosey and Wright 2007, Jain et al. 2009, Lam 2011), these findings demonstrate that the importance of the university context in this respect is the manner in which locally embedded means-ends assumptions shape attitudes towards the meaning of such action through the dynamics of legitimation. As evidenced in the Alpha and Beta case studies, the micro-institutional context afforded significantly different meaning to the revenue seeking entrepreneurial act, with similar modes of behaviour being regarded as functionally legitimate in one context, but representationally hazardous in another.

7.3.3.5 Peers and the Valuation of Entrepreneurial Activity

A fifth key contribution offered by these findings is the description of the manner in which the perceived attitudinal orientation of peers was significant within the dynamics of legitimation which shaped the perceived desirability of entrepreneurial behaviour. Several studies on the antecedents of entrepreneurial intent in the university context have found peer attitudes towards entrepreneurial behaviour to be an important factor in entrepreneurial orientation of faculty (Owen-Smith and Powell 2001, O’Shea et al. 2005, Braunerhjelm 2007, Bercovitz and Feldman 2008, Bourelos et al. 2012). Azoulay et al. (2007, p.621) in their study of entrepreneurial antecedents amongst life scientists describe this as a form of ‘social contagion’, a concept which supports suggestions by other scholars that social proximity to entrepreneurially oriented actors is a key factor in determining individuals’ own levels of entrepreneurial intent (Welter 2012, Kacperczyk 2013).

As Bandura (1991, p.255) states, “People do not care much how they do in activities which have little or no significance for them”, as little self-esteem is invested in such behaviours. This is important in the context of university based entrepreneurship, as Hayter (2011) finds that egotistic motives for engagement in entrepreneurial behaviour are significant, suggesting that the perceived esteem of entrepreneurial behaviour greatly affects its desirability. As detailed in the findings, expectations about peer responses to entrepreneurial behaviour impacted desirability perceptions in both the
Alpha and Beta cases in this respect. The findings described how as a legitimacy awarding audience (Deephouse and Suchman 2008), local peers themselves served as a source of costs and benefits for deviation or conformity with institutional norms, thereby framing the value attached to entrepreneurial behaviour. The findings revealed expected peer responses to behaviour to be a significant sources of cues from which academics shaped their beliefs about the legitimacy of entrepreneurial behaviour, rendering it less or more desirable for those individuals as a consequence. The critical distinction between the two cases in this respect was the prestige associated with research which was oriented towards entrepreneurial outcomes.

In the Alpha case, academics ultimately believed that there was a significant disconnect between official rhetoric related to the value of entrepreneurial behaviour and the reality of attitudes on the ground. Whereas in the Beta case, entrepreneurially oriented research activities were regarded as a normal variation within the academic behavioural spectrum, Alpha case academics regarded it as a low value activity which was likely to be greeted with indifference by their colleagues. This is an important variation in the underlying logic of the two cases when one considers that understanding of positioning in relation to one’s peers, and the means through which that position may change, is a key means-ends assumption within the logic that organises professional fields (Thornton and Ocasio 2008).

This suggests that an important mechanism of operation within local institutional logics with respect to entrepreneurial intent in the academic context is their framing of the professional and social value attached to entrepreneurial behaviour. As individuals seek greater levels of legitimacy in their occupation of social roles, they are attentive to the attitudes of other occupants of that role (Bandura 1991). With the attainment of research excellence being a deeply embedded priority in the academic domain, the legitimacy of the various means through which that excellence can be achieved is informed to a large extent by socially comparable individuals. While peers in an academic environment are not limited by departmental, organisational, or geographical boundaries, social proximity nevertheless plays an important role in the construction of an individual’s interpretive frame. As such, these findings contribute to understanding
of the micro-institutional dynamics through which entrepreneurial behaviour is constrained or enabled in the university context by demonstrating that the representational legitimacy afforded to entrepreneurship by an individual’s peers is a significant manifestation of the underlying institutional logic (Thornton et al. 2011, Guerrero and Urbano 2012).

### 7.3.3 Formal Authority Figures and the Socialisation of Entrepreneurial Attitudes

This section will discuss the findings of the study which detail the manner in which local legitimacy dynamics shaped the socialisation of entrepreneurial norms through figures situated in formal positions of authority, and subsequently influenced the perceived desirability of entrepreneurship for academics in the empirical cases (section 5.3.2). These findings highlighted the significance of local leaders in (1) the interviewed academics’ interpretation of the value of entrepreneurship in the context of perceived role expectations, (2) the interviewed academics’ interpretation of the value of entrepreneurship in the context of informal evaluative role pressures, and (3) the interviewed academics’ interpretation of the value of entrepreneurship in the context of formal evaluative role pressures.

The findings therefore contribute to understanding of the cognitive underpinnings of the entrepreneurial university by demonstrating the significance of local leadership figures in the formation of social norms as they inform the perceived legitimacy and desirability of entrepreneurial behaviour in an academic context. In this respect, they contribute to the extant literature in the field of university based entrepreneurship by furthering current knowledge of the micro-institutional mechanisms through which local leadership participates in the socialisation of behavioural and attitudinal orientation towards the entrepreneurial paradigm (Kenney and Goe 2004, O’Shea et al. 2005, Bercovitz and Feldman 2008, Rasmussen and Borch 2010). In particular, they add to Bercovitz and Feldman’s (2008, p.86) call for studies which generate insight into “the role of dissonance and symbolic compliance”, and the manner in which this phenomenon emerges as academics resolve apparent contradictions in role demands by
“reverting to the prevalent localised norms.” By demonstrating the impact of local leaders in the formation of role expectations and pressures, the study advances knowledge within the field by generating such insight.

Previous studies of the impact of local leadership in the emergence of an entrepreneurial culture in an academic context have highlighted their potential influence in micro-organisational social processes through which academics acquire cues as to the costs and benefits of entrepreneurial behaviour (Bercovitz and Feldman 2008). Neo-institutional analyses of local leadership complement these studies by focusing on the role of micro-level leadership in the protection and promotion of institutional values, and with the introduction of new mental models which reframe new practices as attending to institutionalised objectives (Kraatz and Moore 2002, Washington et al. 2007). Such figures are therefore acknowledged as significant in the legitimisation of various practices as they are invested with powers of evaluation which have considerable personal and professional implications for individual actors (Bercovitz and Feldman 2008). The findings of this study as they address this issue offer a number of key contributions which are described in detail in the following sections.

7.3.3.1 Role Expectations and Contextualising Entrepreneurship

**Firstly**, by demonstrating how local leadership played a significant part in the contextualisation of entrepreneurship and socialisation of interpretations of entrepreneurial behaviour as positive and appropriate in the performance of the academic role, these findings contribute to understanding of how the university as a cultural-cognitive context shapes entrepreneurial propensity (Thornton et al. 2011, Guerrero and Urbano 2012). In the Alpha case, interviewees typically described local leadership as communicating little or no expectation for academics to engage in entrepreneurship, and as such regarded entrepreneurial behaviour as weakly aligned with prevailing interpretations of positive role performance. In contrast, Beta case interviewees regarded entrepreneurially oriented activities as congruent with
performance expectations as signalled by formal leadership figures, and consequently regarded entrepreneurial behaviour as possessing greater legitimacy as a means of pursuing and satisfying performance requirements. Such interpretations reflected the embeddedness of an entrepreneurial orientation at the micro-institutional level, and consequently demonstrate an important element of the relationship between the dynamics of legitimation in the local context and the proliferation of entrepreneurial intent.

Bandura (1991) suggests that in their self-regulation of behaviour, individual actors become adept at reading social cues which appear to have predictive power such as those which pertain to adequate or inadequate performance as they are communicated by socially proximate figures of significant status. Self-presentation and attendant behavioural orientations are varied on the basis of both anticipated social sanctions and the personal standards which have been developed for the purpose of self-directed change (Bandura 1991). These findings significantly extend previous studies in the university based entrepreneurship literature (O’Shea et al. 2005, Bercovitz and Feldman 2008) which suggest that local leaders may be important in this context by pointing to the significance of formal leadership figures in the contextualisation of entrepreneurship, both as an institutional objective and a positive dimension of role performance at the micro-level. Such figures are required in the execution of their duties to knit together various institutional pressures which manifest themselves as competing demands on organisational resources together (Kraatz and Block 2008). Public universities, as inherently pluralistic organisations, are especially complex in this respect, and as demonstrated by the findings of this study, such leadership figures are of particular importance in the articulation of the functionally and representationally legitimate elements of entrepreneurial behaviour in this unique context.

7.3.3.2 Informal Evaluative Role Pressures: Collegiality and Interdependence

A second contribution offered by these findings is their description of the significance of informal and interactional relational pressures as they are manifested in anticipated
informal evaluations of performance in an academic context. These pressures are of particular importance in the socialisation of entrepreneurial norms, as the integration into everyday practice of the logical basis for a given interpretation of positive role performance is primarily facilitated through ongoing and informal social contact at the micro-level (Brim and Wheeler 1966, Weidman and Stein 2003). The findings of this study demonstrated that significant pressure for conformity with such interpretations arose from the socially interdependent nature of academic work in the empirical cases. Interviewees in the Alpha case typically pointed to the potentially disruptive nature of entrepreneurship in this respect as a factor which diminished its desirability. Alpha case interviewees therefore regarded entrepreneurship as posing the potential for negative evaluation with respect to their perceived collegiality. Beta case interviewees offered quite dissimilar perspectives, generally framing entrepreneurial behaviour as unlikely to generate such consequences.

These divergent interpretations appeared to be a significant manifestation of the relative embeddedness of an entrepreneurial orientation in the Alpha and Beta cases. While role expectations describe behavioural objectives, role pressures describe the means through which compliance is arrived at, and through which awareness of sanctions (both formal and informal) for the performance of illegitimate behaviours is established (Shivers-Blackwell 2004, Lonnqvist et al. 2006). These findings therefore represent an important extension of Bercovitz and Feldman’s (2008) study on the importance of local leaders to engagement in knowledge transfer, as they demonstrate that evaluative pressure to act in accordance with the principle of collegiality reflects legitimacy pressures to act in accordance with broadly consensual and socially embedded objectives and values (McFarlane 2007, Dierdorff et al. 2012). The weak alignment of entrepreneurship with positive notions of collegiality in the Alpha case was therefore a further manifestation of the manner in which local dynamics of legitimation constrained the emergence of entrepreneurial orientation at the individual level.

Equally, the greater degree of congruence between collective notions of collegial behaviour and entrepreneurship in the Beta case also provides a demonstration of the significance of an embedded entrepreneurial orientation in the formation of desirability
perceptions. In two quite distinct ways then, these findings deepen understanding of the dynamics of Clark’s (2001) ‘reinvention of collegiality’ in the emergence of entrepreneurial universities. As Clark argued, “the entrepreneurial university provides new foundations for the rebuilding of internal collegiality and external autonomy” (Clark 2001, p.23), and the findings in the Beta case indeed suggest that an entrepreneurial orientation may be indeed collegially reinforced. The greater legitimacy of entrepreneurship as a norm of social behaviour in that context rendered it, in relative terms, a more consensually and socially valued mode of behaviour.

However, in what Clark (2001, p.12) also referred to as the “gritty” reality of academic life, the real working environments of academics were revealed in the study as manifesting pressures of interdependence at the individual level which spanned from everyday interactional relationships with colleagues. In the absence of an underlying entrepreneurial logic, these pressures represented a significant constraint on entrepreneurial behaviour in the Alpha case. This complements Garret-Jones et al.’s (2010) finding of an expectation of adherence to principles of collegiality even in the context of inter-disciplinary R&D centres, and further suggests that this is a significant manifestation of the micro-level dynamics through which the embeddedness of an entrepreneurial orientation underpins entrepreneurial cognition and action in the university context.

7.3.3.3 Formal Evaluative Role Pressures and Facades of Conformity

A third key contribution offered by these findings is the significance of formal evaluative role pressures as an influential factor in the formation of attitudes towards the desirability of entrepreneurial behaviour in the university context. These findings complement and develop conclusions from multiple studies in the university based entrepreneurship literature which draw attention to the importance of career advancement as an underlying factor in the emergence of entrepreneurial orientation in the academy (Siegel et al. 2003, Mosey et al. 2012, Guerrero et al. 2012). In particular, they highlight the significance of what Hewlin (2003) refers to as ‘facades of
conformity’ in the context of entrepreneurship in the academy. Brint (2005) and Mosey et al. (2012) found that minimal engagement with entrepreneurship was observed as a consequence of insubstantial shifts in the underlying value structures which governed the behavioural norms of academic actors. These findings expand this analysis by demonstrating the manner in which academics consciously engage in false representations of congruence with the entrepreneurial value as a means of managing the dissonance of apparent contradictions.

Furthermore, analysis of the data from the Beta case underlined the significance of institutionally embedded assumptions of complementarity as they relate to the functional purpose of both the traditional and entrepreneurial academic paradigms. The reconciliation of both functional and representational elements of entrepreneurial behaviour in the Beta case ultimately served to engender a taken-for-granted assumption of complementarity with respect to the formal evaluative outcomes of both traditionally and entrepreneurially oriented academic activity. Notably, traditionally oriented research activities retained primacy as a means of acquiring promotion, however, the ‘rules’ in their institutional context had been augmented to a degree which was sufficient for the consideration of time invested in third mission activities as time well spent. Or at least, time not wasted, as was the dominant view in the Alpha case with respect to the issue of promotion.

7.3.4 Concluding Comments for Research Question Two

This section has discussed the findings of the study outlined in section 5.3 which addressed the impact of local legitimacy dynamics on the socialisation of entrepreneurial norms in the empirical cases. The findings of the study demonstrated the manner in which desirability perceptions as they relate to entrepreneurial behaviour were shaped by social norms, and in particular how assumptions about the legitimacy of entrepreneurship were socialised and constructed though salient others in both a formal and informal capacity at the micro-institutional level. The study therefore offers a range of insights into the significance and operation of legitimacy dynamics as they
are manifested in micro-environments on the proliferation of entrepreneurial desirability, and consequently into the emergence and socio-cultural underpinnings of the entrepreneurial university itself (Etzkowitz 1998, O’Shea et al. 2005, Bercovitz and Feldman 2008).

The findings demonstrate that high status figures such as role models were influential in the framing of entrepreneurship as a legitimate means of attaining symbolic value and distinction, suggesting that social comparison processes are significant in the socialisation and reinforcement of entrepreneurial norms. Additionally, this suggests that the degree to which entrepreneurship was framed as a legitimate means of achieving pro-social and prestige bearing ends within the prevailing institutional logic is significant to the motivational force of entrepreneurial behaviour for embedded actors. A summary of the contributions of these findings to the literature is provided in table 7.4.
Table 7.4: Summary of Key Contributions of Findings for RQ 2

<table>
<thead>
<tr>
<th>Finding</th>
<th>Key Contributions</th>
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<tr>
<td>7.3.1. The extent of the embeddedness of an entrepreneurial logic at the micro-level was reflected in the <strong>local dynamics of legitimation which shaped the perceived desirability</strong> of entrepreneurial behaviour for academics.</td>
<td>(1) The emergence of an entrepreneurial logic in the university context is subject to a progression from pragmatic, to moral, to cognitive legitimacy which is reflected in academic interpretations of the functional and representational characteristics of entrepreneurial behaviour. (2) Individuals in possession of significant status or ‘field capital’ play a significant role in the local dynamics of legitimation and represent an important dimension of the socialisation of entrepreneurial desirability. (3) The motivational force of entrepreneurship is influenced by the degree to which it has been framed as a legitimate means of achieving pro-social ends within the embedded institutional logic, which itself describes the manner in which academic capital may be attained.</td>
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The perceived behavioural and attitudinal orientation of salient others at the micro-institutional level *framed the functional and representational legitimacy of entrepreneurship for academics* and shaped the perceived desirability of entrepreneurial behaviour.

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<td>(4)</td>
<td>The institutional transformation envisioned within triple-helix perspectives of the entrepreneurial university is enabled or constrained by the attendance of local authority figures to entrepreneurially congruent values</td>
</tr>
<tr>
<td>(1)</td>
<td>Successful entrepreneurs and role models in the local context are significant in framing of perceptions of the functional and representational value of entrepreneurship and the broader emergence of an entrepreneurial logic</td>
</tr>
<tr>
<td>(2)</td>
<td>Entrepreneurial role models were significant in the framing of means-ends assumptions, thereby shaping the predominant logic and the perceived opportunity cost of entrepreneurial behaviour</td>
</tr>
<tr>
<td>(3)</td>
<td>A key function of role models is their construction of mutually affirmative or ‘win-win’ interpretive frames in the context of university based entrepreneurship</td>
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</table>
7.3.3. The embeddedness of an entrepreneurial orientation at the micro-institutional level was reflected in the perceived behavioural and attitudinal orientation of formal leaders at the local level.

(4) Local legitimacy dynamics frame the significance representational concerns, particularly those related to pecuniary gain, which was an important manifestation of the effect of cultural-context on the meaning given to entrepreneurial behaviour.

(5) The representational legitimacy afforded to entrepreneurship by their peers in the university context was an important manifestation of the micro-institutional dynamics through which entrepreneurial behaviour was constrained or enabled.

(1) Local leadership played a significant part in the contextualisation of entrepreneurship and socialisation of interpretations of entrepreneurial behaviour as positive and appropriate in the performance of the academic role.

(2) Informal and interactional pressures as they were manifested in informal evaluative pressures in an academic context were significant in framing the desirability of the academic role.
(3) Perceived formal evaluative pressures shaped the likelihood of academics to engage in either (a) false representations of congruence with the entrepreneurial mission (facades of conformity) as a means of managing the dissonance of apparent contradictions, or in (b) substantive commitment to the entrepreneurial mission.
7.4 Conclusion

This chapter has discussed the findings of the study as they relate to the underpinning elements of academics’ desirability perceptions in the empirical cases, addressing the manner in which the locally embedded role frame shaped the personal attitude of academics towards the desirability of entrepreneurial behaviour, and how social norms with respect to the perceived desirability of entrepreneurial behaviour were socialised and constructed through the local dynamics of legitimation. In so doing, this chapter has discussed the mechanisms through which the desirability perceptions of academics with respect to entrepreneurial behaviour were shaped by the micro-institutional context in the study as they inform the extant literature. The contributions of these findings to current understanding of the relationship between the university as a context for action, and the cognitive processes which underpin entrepreneurial intent on the part of academics, were also described in detail. This discussion has therefore provided a number of contributions to important debates within the university based entrepreneurship literature.

Having discussed the relevance of the findings from chapter five to the extant literature in this chapter, the following chapter will discuss the research findings from chapter six as they described the mechanisms through which the feasibility perceptions of academics were shaped by the micro-institutional context.
CHAPTER EIGHT: DISCUSSIONS II - MICRO-INSTITUTIONAL DYNAMICS AND FEASIBILITY PERCEPTIONS

8.1 Introduction

Having discussed the findings of the study as they relate to desirability based antecedents of entrepreneurial intent in the previous chapter, chapter eight will discuss the research findings as they relate to the underpinning elements of academics’ feasibility perceptions in the empirical cases, namely perceived self-efficacy and perceived collective-efficacy. In so doing, this chapter will discuss the mechanisms through which the feasibility perceptions of academics with respect to entrepreneurial behaviour were shaped by the micro-institutional context in the study. Section 8.2 will address the manner in which control and self-efficacy perceptions as they relate to entrepreneurial behaviour were shaped by embedded assumptions at the micro-institutional level. The significance of vicarious experience will be discussed in section 8.2.2, verbal interactions in section 8.2.3, and interpersonal control perceptions in section 8.2.4. Some concluding comments for research question three will then be offered. Section 8.3 will then address the influence of micro-institutional factors on the perceived feasibility of entrepreneurial behaviour as it was shaped by collective-efficacy perceptions in the empirical cases. Section 8.3.1 will discuss the significance of the findings as they relate to competence trust perceptions, and section 8.3.2 will focus on relational trust.

This discussion will therefore make a number of contributions to important debates within the university based entrepreneurship literature, including the socialisation of assumptions relating to the feasibility of entrepreneurial behaviour, the nature of opportunity recognition, evaluation, and exploitation, the nature of entrepreneurial motivation, and manner in which perceptions of entrepreneurial support structures are formed. Summaries of the contribution of these findings to the extant literature are provided in tables 8.2 and 8.4.
8.2. Entrepreneurial Self-Efficacy and the Micro-Institutional Context

Section 8.2 will address the issue of self-efficacy as it was shaped by micro-institutional dynamics in the empirical cases.

8.2.1. Key Contributions of Research Question Three

The significance of feasibility perceptions lies in their impact on the propensity of individuals to pursue, and indeed identify, entrepreneurial opportunities (Krueger 2000). In this sense, self-efficacy perceptions are pivotal to the emergence of an entrepreneurial orientation in the university, and consequently are central to the institutional transformation which underpins the triple-helix model as a whole (Glassman et al. 2003, Prodan and Drnovsek 2010). This effect has been articulated within the neo-institutional literature as a central feature of the cognitive micro-processes which bring about institutional change, as expected control in an entrepreneurial scenario is recognised as a critical factor in the emergence of non-isomorphic behaviour in an institutional context George et al. (2006).

As they facilitate our understanding of the relationship between context and entrepreneurial intent therefore, self-efficacy perceptions also provide much insight into the relationship between human cognition and institutional evolution (Zucker 1977, George et al. 2006). Indeed as Etzkowitz (1998) argued, the transition to an entrepreneurial paradigm in the academic domain is a product of the interplay between the cognitive infrastructure of opportunity recognition and graduated institutional rearrangements. The extent to which an individual assesses a scenario as one within which they will behave competently shapes their overall feasibility perceptions, and consequently, their interpretation of that scenario as an ‘opportunity’ in a meaningful sense. The factors which impact on that assessment are therefore fundamental to the likelihood of that behaviour being performed and a positive orientation towards that behaviour developing. As Goethner et al. (2012) argue, advancing understanding of how self-efficacy is shaped is key to understanding how academics come to interpret
the many challenges of entrepreneurship, and as Glassman et al. (2003) suggest, merely describing the characteristics of entrepreneurial academics is not sufficient to this end.

From the earlier discussion of these issues in this thesis, the following research question was arrived at:

“How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?”

In answering this question, a number of interesting issues emerged. The three primary factors which were revealed in the data analysis will be addressed in detail in the remainder of this section and are outlined in table 8.1, but initially it is important to consider the overall significance of this aspect of the study in the context of the relevant literature.

<table>
<thead>
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<th>Table 8.1: Core Discussion Points for Research Question Three</th>
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<tr>
<td><strong>8.2.1.</strong> The extent of the embeddedness of an entrepreneurial logic at the micro-level influenced the self-efficacy perceptions of academics with respect to entrepreneurial behaviour.</td>
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<tr>
<td><strong>8.2.2.</strong> The embeddedness of an entrepreneurial orientation was reflected in the vicarious experiences of academics which consequently impacted upon their self-efficacy perceptions.</td>
</tr>
<tr>
<td><strong>8.2.3.</strong> The embeddedness of an entrepreneurial orientation was reflected in the verbal cues experienced by academics which shaped their self-efficacy perceptions with respect to entrepreneurial behaviour.</td>
</tr>
<tr>
<td><strong>8.2.4.</strong> The micro-level context impacted upon the interpersonal control perceptions of academics in the domain of entrepreneurial behaviour by shaping their assumptions about the feasibility of developing the requisite relationships for success in an entrepreneurial venture.</td>
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</table>
The findings show that the self-efficacy perceptions of individual academics are influenced by a number of mechanisms which operate in their local context. These mechanisms operated in conjunction with the dominant institutional logic in reinforcing individual level attitudes towards the performance of given behaviours. Therefore, the social embeddedness of entrepreneurial logic acted in the empirical cases on not only the desirability perceptions of academics with respect to entrepreneurial behaviour, but also on their perceptions of the act’s feasibility. The findings of this study point to three primary mechanisms through which this effect was manifested.

Firstly, accumulation of positive vicarious experience was a product of the social proximity of an individual to successful performances of an act by socially comparable individuals. Secondly, verbal persuasion was a product of social proximity to actors who had themselves a perception of entrepreneurial behaviour as both legitimate and feasible. And thirdly, interpersonal control was a product of the embeddedness within the local context of means through which relationships necessary for successful outcomes could be formed. In exploring, identifying, and describing the nature of these mechanisms, the study enhances understanding of the manner in which self-efficacy perceptions with respect to entrepreneurial behaviour are shaped by micro-institutional dynamics in the university context (Etzkowitz 1998, George et al. 2006, Bercovitz and Feldman 2008). In describing the manner in which embedded assumptions with respect to the perceived feasibility of entrepreneurial action are socially reinforced at the micro-level in the university context, these findings respond to calls within both the neo-institutional and entrepreneurship literature for exploration of the relationship between institutional context and entrepreneurial propensity, (Thornton et al. 2011, Zahra and Wright 2011, Shane 2012), and furthermore make a number of contributions to the literature which will be discussed in greater detail in the following sections.

Firstly, and within the neo-institutional literature, these findings add to current understanding of the micro-cognitive processes which underpin entrepreneurial change. George et al. (2006) advance the theory that the cognitive underpinnings of institutional change are best understood as interpretations of environmental features on the behalf of actors as threats or opportunities relating to their resource and control positions. In
particular, opportunities relating to scenarios within which actors possess an expectation of mastery or control are most likely to generate non-isomorphic (or entrepreneurial) behaviours as such expectations are associated with greater levels of risk taking. The findings of this study advance this theory by suggesting that vicarious experience, verbal persuasion, and perceptions of interpersonal control are key factors through which the micro-institutional context shapes these expectations of mastery and control in an entrepreneurial scenario (Immergut 1998, Fligstein 2001, George et al. 2006).

Secondly, these findings add to understanding of the university context’s influence on the feasibility based antecedents of entrepreneurial intent, and consequently provide insight into an important dimension of the cognitive underpinnings of the university’s entrepreneurial orientation. By demonstrating how contextually embedded social mechanisms influence the evaluation of entrepreneurial opportunities in a university environment, the study shows how context is significant to the pursuance of opportunities by individuals, and describes how context may enable or constrain entrepreneurial cognition and action (Krueger 2007, Thornton et al. 2012). In so doing, it also addresses Bercovitz and Feldman’s (2008) call for more in-depth understanding of the micro-social processes which shape entrepreneurial intent in the university. The emergence of the entrepreneurial university is recognised within the triple-helix perspective as a process of institutional transformation (Etzkowitz et al. 2000), wherein overlap in historically distinct institutions produces institutionally novel modes of behaviour and new logics of action from which this behaviour draws its meaning (Kraatz and Block 2008). Employing George et al.’s (2006) analysis of the micro-cognitive foundations of institutional change, these findings indicate that micro-level patterns of interaction serve to diminish or enhance self-efficacy perceptions and thereby influence entrepreneurial propensity.

In this respect, the findings of this study extend a range of previous findings on the importance of social context in the emergence of an entrepreneurial culture by suggesting that academics arrive at the assessment of a scenario as one in which they are on the one hand competent, and on the other hand capable of generating successful
outcomes, when they are embedded in a context wherein such a perspective is socially reinforced (Chell and Allman 2003, Kenney and Goe 2004, O’Shea et al. 2007). Indeed, providing insight into the mechanisms through which this socialisation occurs, and the process through which the internalisation of assumptions so critical to entrepreneurial intent takes place, is one of the key contributions this study makes to the literature (Krueger 2007, Zahra and Wright 2011). In describing the mechanisms through which self-efficacy perceptions with respect to entrepreneurial behaviour were formed, the study offers valuable insight into the reciprocal relationship between structure and action as it relates to the cognitive infrastructure of the entrepreneurial university.

Thirdly, the findings of the study as they concern the self-efficacy antecedent of entrepreneurial behaviour demonstrate that the embeddedness of an entrepreneurial orientation in the local logics of action influences the self-efficacy and control perceptions of academics in a number of important ways, and may have important implications for the manner in which individual academics are motivated by the prospect of entrepreneurial action as a consequence. As the findings expand understanding of the limits the local environment places on an individual actor’s sense of possibility and perceived range of choices as they contemplate entrepreneurial action (Chell and Allman 2003), they also provide insight into the embeddedness of motivational triggers in that environment by describing the role of institutional logic in this process. Means-ends assumptions are a critical element of institutional logic (Thornton and Ocasio 2008), and as such they shape the propensity of individuals to recognise a particular means as satisfying a particular end.

These findings suggest that the embeddedness of entrepreneurial logic shapes the motivational force of entrepreneurship by framing such action as a feasible means of satisfying the individual’s motivation to achieve a desirable end. As such, this study adds to discussions offered by O’Shea et al. (2007), D’Este and Perkmann (2011), and Hayter (2011) on the motivations of academics when engaging in entrepreneurial behaviour by illustrating the role of micro-institutional mechanisms in the framing of such behaviour. This adds further conceptual depth to understanding of opportunity
recognition and evaluation in the academic context, and anchors this process within a neo-institutional theory of action in this context (Shane and Eckhardt 2003, Shane 2004, Glenna et al. 2011). In addition, it addresses calls within the entrepreneurship literature for more in-depth exploration of the manner in which contextual factors interact with individual self-efficacy and influence motivation to pursue entrepreneurial activities (Carsrud and Brannback 2011).

The following sections will discuss in greater detail the relevance of each of the identified mechanisms as they inform the current literature.

8.2.2. Self-Efficacy and Vicarious Experience

This section will discuss the findings of the study that detail the impact of vicarious experience on the self-efficacy perceptions of academics as they related to entrepreneurial behaviour. These findings highlighted (1) the role of vicarious experience in the internalisation of efficacy enhancing or diminishing assumptions about the efficacy of academics in entrepreneurial ventures, (2) the role of vicarious experience in framing the feasibility of balancing academic and entrepreneurial demands, and (3) the extent to which entrepreneurial individuals were stereotyped or rendered more identifiable. The findings contribute to understanding of the cognitive underpinnings of the entrepreneurial university by detailing the effect of vicarious experience on the internalisation of perceptions of the entrepreneurial efficacy of academics in the two empirical cases. They therefore address calls in the literature for studies which add to understanding of the social and institutional conditions which shape the experiential underpinnings of entrepreneurial capacity both in the university and beyond (Krueger 2007, Clarysse et al. 2011, Tolbert et al. 2011)

Vicarious experiences are significant in the development of self-efficacy perceptions as they inform an individual’s perceptions of their own competence in a given mode of behaviour (Bandura 1977). They are of particular importance in the emergence of
entrepreneurial behaviour in the academy because of the typically nascent character of entrepreneurial action in that context (Hayter 2011). Novice entrepreneurs lack the enactive experiences which reinforce their perceptions of self-efficacy in the pursuance of entrepreneurial opportunities (Tschannen-Moran and Woolfolk Hoy 2007), and consequently they are more reliant on the experiences of figures to whom they are comparable in their formulation of views about their own capabilities (Bandura 1982). Additionally, vicarious experience serves as an important means through which cultural norms are socialised and through which attitudes towards particular behaviours are internalised in a given environment. In this respect, the impact of vicarious experience on efficacy perceptions was very much in evidence in the findings of this study, and offers several contributions to understanding of the impact of micro-institutional dynamics on the cognitive antecedents of entrepreneurial intent.

8.2.2.1 Vicarious Experience and the Embeddedness of an Entrepreneurial Logic

Firstly, academics in the Alpha case struggled to relate positive vicarious experiences of engagement in entrepreneurial activity, and in fact, some interviewees came to report the struggles experienced by other academics in the university as evidence of self-inefficacy with respect to entrepreneurial behaviour. Self-inefficacy is recognised within social learning perspectives as diminishing the perceived controllability of a situation for individuals, rendering them averse to the relevant scenario (Bandura 1982). Consider Alpha case interviewee A-18’s remark made in relation to the lack of ‘evidence’ of academic competence in this sphere: “Can you succeed at something like this, can you create a successful spin-out? Yeah I think that’s possible, but I think it takes a certain type of person to do that. Someone with a different mentality and outlook to the average academic I think.”

Such perspectives are consistent with vicarious experience which impacts negatively on the perceived controllability of a situation. In the absence of mastery experiences, individuals base predictions of their performance in a given scenario on the experiences of socially comparable others, and this serves as a key mechanism through which
cultural norms are internalised. This finding further develops understanding of the significance of prior industry experience in this context, a factor established in the university entrepreneurship literature as important to entrepreneurial behaviour (Stuart and Ding 2006, D’Este and Perkmann 2011, D’Este et al. 2012), as experiences in the industrial domain mitigate against the absence of positive vicarious experiences with respect to entrepreneurship in the academic context.

A complementary contribution is offered by the perspectives of the Beta case academics, which revealed a significant point of contrast in this respect. On a fundamental level, the key distinction between the two cases was the availability of positive vicarious experience in the Beta case context. The embeddedness of an entrepreneurial orientation in that environment provided academics there with instances of socially comparable figures generating positive outcomes from entrepreneurial behaviour. On this basis, the relationship between the university as a context for action and the cognitive antecedents of entrepreneurial behaviour in the Beta case was one in which academics assessed their personal competence more positively, and consequently perceived entrepreneurial behaviour as a more feasible course of action than their counterparts in the Alpha case.

These findings extend perspectives that suggest control perceptions are significant in the emergence of entrepreneurial intent, and address the theoretical gap they highlight by providing an investigation of the efficacy-based psychological antecedents of academics’ transition to entrepreneurship (Goethner et al. 2012). By illustrating the manner in which vicarious experiences socialise means-ends assumptions with respect to the feasibility of entrepreneurial initiatives in an academic context, this study develops understanding of this transition. In so doing it adds to a growing body of research which seeks to understand the psychological underpinnings of the institutionalisation of entrepreneurial behaviour in the academy in the interests of making policy more targeted and psychologically effective (Obshonka et al. 2012). Further to these previous studies and as argued by others in the extant literature (Braunerhjelm 2007, Bercovitz and Feldman 2008, Prodan and Drnovsek 2010, Clarysse et al. 2011), the findings of this research reinforce the assertion that policy
attention dedicated to economic incentives in this domain may in attending to control and self-efficacy beliefs have a much stronger impact.

8.2.2.2 Vicarious Experience and Institutional Change

A second contribution made by these findings is a demonstration of the role of vicarious learning and experience within broader processes of institutional change. By demonstrating the manner in which vicarious experiences interacted with individual academic expectations of efficacy and control in an entrepreneurial scenario, this study reveals an important dimension of the relationship between the cultural-cognitive context for action and the feasibility based antecedents of entrepreneurial behaviour (Shane 2012). Expected control in an entrepreneurial scenario is presented by George et al. (2006) as a critical micro-cognitive process in the emergence of non-isomorphic behaviour in an institutional context. The emergence of such behaviour is of course fundamental to understanding of the emergence of entrepreneurial universities, as cultural-cognitive transformation is fundamental to institutional evolution. In revealing the manner through which vicarious experience prompted the internalisation of efficacy enhancing or diminishing assumptions, framed the feasibility of balancing academic and entrepreneurial demands, and rendered entrepreneurial individuals as either identifiable figure or stereotypes, this study demonstrates how an embedded cultural logic enables or constrains the cognition and action which underpins non-isomorphic change (Thornton et al. 2012) in the context of university based entrepreneurship.

The study therefore responds to calls within the literature for greater understanding of how internalisation of biases and assumptions which have much influence on control beliefs are linked to social context (Krueger 2007), and how cultural-cognitive structures condition the emergence of the entrepreneurship which underpins institutional change (Thornton et al. 2011, Guerrero and Urbano 2012). By showing how vicarious experience socialises means-ends assumptions, the findings represent progress in the contextualisation of entrepreneurial behaviour in an institutional context (Shane 2012, Jennings et al. 2013), and offer some redress to the under-explored
relationship between institutional structures and the formation of entrepreneurial propensity (Zahra and Wright 2011, Greenman 2013).

8.2.2.3 Vicarious Experience and Entrepreneurial Motivation

A third contribution offered in the light of these findings is the assertion that a more complete conceptualisation of the motivations which drive entrepreneurial engagement on the part of academics requires greater recognition of the cognitive link between desirability and feasibility. This study represents an important step in advancing this recognition. As entrepreneurial actors present their behaviour to observers as a means of attending to legitimised social goals, they also provide evidence of the feasibility of the entrepreneurial act. While studies such as those by Morales-Gualdron et al. (2009), D’Este & Perkmann (2011), Hayter (2011), and Abreu & Grinevich (2013) point to both the variety of motivations and success definitions which serve as rationalisations or sense-making frames for entrepreneurial action, vicarious experiences underpin these rationalisations by shaping perceptions of entrepreneurial ventures as feasible opportunities to satisfy those motivations (Van Maanen and Schein 1979).

While the proposition that institutional transformation requires modification of the means-ends assumptions embedded in the dominant institutional logic has already been discussed, the influence of vicarious experience in this respect is that individual level perceptions of self-efficacy in reaching those ends through entrepreneurial means is itself related to the embeddedness of an entrepreneurial orientation. The study therefore advances understanding of the micro-level dynamics which shape institutional transformation by demonstrating how institutional logic impacted upon entrepreneurial intent in the empirical cases not just through its direct influence on the desirability and appropriateness of entrepreneurial behaviour, but also by the subsequent proliferation of efficacy enhancing vicarious experience. This extends arguments such as those made by Bercovitz and Feldman (2008) by showing that vicarious learning is significant not only to the formation of attitudes about what is expected or legitimate, but also to what
is plausible or realistic, and in addition it anchors this principle within the process through which the inner logic of the university is transformed (Etzkowitz 2003).

Motivations provide actors with the answer to the ‘why’ questions when engaging in any goal-oriented form of social behaviour (Vroom 1964), and in the context of the university entrepreneurship literature, these motivations are diverse and multi-dimensional (Morales-Gualdron et al. 2009, D’Este and Perkmann 2011, Hayter 2011). The impact of vicarious experience is manifested less in the ‘why’ element of behavioural rationalisation, and more as an underlying factor in the identification of entrepreneurial behaviour as a means or opportunity of reaching the goals which motivate the individual actor. Whereas desirability perceptions are underpinned by what one is motivated by, feasibility perceptions are underpinned by the potential for behaviour to acquire what the actor finds desirable. Self-efficacy perceptions are fundamental to the motivational force of a behavioural scenario because they directly impact the extent to which effort will be mobilised in the performance of attendant behavioural modes (Bandura 1977). These findings show that vicarious experience is an important element within this process, as it presented entrepreneurial behaviour for interviewees as a viable means satisfying their motivations.

This extends findings that vicarious learning at the organisational level is an undervalued dimension of the emergence of university start-ups (Miner et al. 2012) by demonstrating its significance at the individual level, and further supports Clarysse et al.’s (2011) claim that university level policy needs to place more emphasis on initiatives which raise entrepreneurial efficacy perceptions. The provision of vicarious experience seems an important mechanism through which entrepreneurial activities can be framed for academics as a realistic and feasible means of satisfying their motivations, which despite being diverse and multi-dimensional in nature nevertheless share some common characteristics (Hayter 2011). Vicarious experience, therefore, revealed itself in the findings of this study as a significant factor in the cognitive underpinnings of opportunity emergence in the university context, and consequently as an important variable in the evaluation of a potential scenario by academics as an opportunity in any sense (Shane 2004).
The next section will address another important mechanism through which perceptions of entrepreneurship as a feasible course of action were shaped by the micro-level environment of the university. While vicarious experiences shaped academic perceptions through the observation or non-observation of successful engagement in entrepreneurial behaviour, verbal persuasion relates to the manner in which the environment constrains or stimulates action through the active suggestion of other social actors.

8.2.3. Self-Efficacy and Verbal Cues

The second micro-level mechanism described in the findings as significant in influencing interviewee self-efficacy and control perceptions was verbal persuasion. This mechanism was highlighted in chapter six as significant in (1) either diminishing or enhancing perceptions of entrepreneurial self-efficacy, and (2) in the framing of the objective feasibility of entrepreneurial ventures. These findings contribute to understanding of the cognitive underpinnings of the entrepreneurial university by demonstrating the effect of verbal interactions in the micro-level context on the self-efficacy and control perceptions of academics in the empirical cases. They demonstrate in the context of university based entrepreneurship that the sense-making process through which academics form self-efficacy perceptions with respect to a given mode of behaviour is shaped by situated social interactions and reflect elements of collective cultural attitudes (Coburn et al. 2006). As such, these findings build on Bercovitz and Feldman’s (2008) proposition that micro-level interactions in universities seem crucial in the proliferation of entrepreneurship because of their role in the emergence of shared attitudes towards entrepreneurial behaviour. The findings in chapter six showed that these patterns mattered for interviewees in the empirical cases in part because of the verbal interactions which resulted, and because the nature of these interactions appeared to be influenced by locally embedded assumptions about the feasibility of entrepreneurial activity.
The importance of verbal persuasion as an underlying factor in efficacy perceptions spans from the greater mobilisation of sustained effort in the performance of a behaviour exhibited by those who have received this type of positive reinforcement (Bandura 1977, 1986). As verbal interactions about professional activities are mostly frequently engaged in with socially proximate peers and colleagues (Tschannen-Moran and Woolfolk Hoy 2007), verbal persuasion serves as an important mechanism through which the reciprocal determinism inherent in structure-agency perspectives operates (Bandura 1982, Garud et al. 2007). The embeddedness of an entrepreneurial orientation in the institutional logic of a particular environment therefore impacts upon the behavioural intent of individuals through verbal interactions which reflect this orientation (Powell and Colyvas 2008, Thornton et al. 2011). The findings outlined in chapter six therefore offer two key contributions to the literature with respect to the impact of the micro-level logics of action on the antecedents of entrepreneurial intent.

8.2.3.1 Verbal Cues and the Embeddedness of Entrepreneurial Logic

Firstly, the Alpha and Beta case interviewee experiences reflected the presence of an entrepreneurial orientation in the prevailing institutional logics, with the relatively stronger social embeddedness of entrepreneurship in the Beta case appearing to prompt verbal interactions that positively impacted personal efficacy perceptions. In the Alpha case, individual interviewees typically reported an absence of active encouragement to pursue entrepreneurial initiatives, with verbal interactions on the subject often being negative in nature and having a negative impact on the perceived feasibility of the venture as a consequence. Beta case interviewees, by contrast, stressed the importance of this encouragement in a manner which reflected the value attached to entrepreneurial behaviour in that environment. As interviewee B-5 stated “Encouragement is a crucial thing. Risk taking is not something that comes easily to most people, maybe even less easily for academics, but if people who you respect are telling you can do something then you start to think ‘I can do it’.”
This aspect of the Beta case context reflects Snow et al.’s (1986) assertion that the alignment of an issue (entrepreneurship in this case) with the socially embedded assumptions in an environment gives it greater resonance and mobilising potency for embedded actors. While verbal persuasion is typically regarded in social cognitive theory as less powerful than enactive or vicarious experience (Bandura 1986), it nevertheless reinforces the motivational resonance of a given behaviour in an environment through its affirmation of the behaviour’s feasibility and the embedded actors’ competence in its performance. In this sense, these findings demonstrate that the motivational force of factors typically reported as driving an individual’s entrepreneurial behaviour in the academic context (such as access to funding) (D’Este and Perkmann 2011, Hayter 2011) is itself shaped by the embeddedness of an entrepreneurial orientation through verbal interactions which shape the individual’s sense of the feasibility of such a venture (Bandura 1982). In so doing, they highlight an important mechanism through which entrepreneurial culture prompts the socialisation of attitudes which enhance the likelihood of entrepreneurial engagement at the micro-institutional level (Glassman et al. 2003, O’Shea et al. 2007, Wood 2011).

8.2.3.2 Verbal Cues and the Context - Cognition Relationship

A subsequent contribution offered is that rationalisations for entrepreneurial action such as the need for personal achievement (Morales-Gualdron et al. 2009, Jain et al. 2009), financial gain (Shane 2004, D’Este and Perkmann 2011, Hayter 2011), access to funding (Landry et al. 2006, Mosey and Wright 2007, Lam 2010, D’Este and Perkmann 2011), or social approval (Bercovitz and Feldman 2008, Hayter 2011) are in part linked to action through verbal cues from socially proximate actors who reinforce the individual’s intrinsic motivations. Indeed, social cognitive theory points to these interactions as a key element of the interface between cognition and motivation (Levine et al. 1993). In shaping the choices embedded individuals regard as being open to them (DiMaggio and Powell 1991), the institutional environment of the individual influences what they regard as a realistic or feasible course of action through the shared assumptions of peers and influential others (Chell and Allman 2003).
While individual level experiments with entrepreneurial behaviour in the Alpha case reflected the presence of an embryonic entrepreneurial orientation, the predominance of a non-entrepreneurial logic of action was manifested in the negative attitudes of others. This adds to understanding of how institutional logics impacts upon entrepreneurial self-efficacy perceptions at the micro-level in the university by expanding current perspectives on the significance of the individual academic’s social environment (Louis et al. 1989, Siegel et al. 2003, Goldfarb and Henrekson, 2003, Azoulay et al. 2007, Braunerhjelm 2007, Bercovitz and Feldman 2008, Clarysse et al. 2011). It also extends Clarysse et al.’s (2011) proposition that university level policy which aims to engineer a supportive social context for entrepreneurship should give greater attention to attracting individuals with a strong entrepreneurial orientation, by demonstrating that such individuals embedded in micro-level networks of interaction would impact efficacy perception through verbal interactions alone.

The final mechanism revealed as significant for self-efficacy perceptions in the findings, interpersonal control, will be addressed in the next section. While vicarious experiences and verbal persuasion reflected an institutionalised orientation towards a traditional or entrepreneurial behavioural frame for Alpha and Beta case academics, interpersonal control revealed interviewee perceptions towards more formal elements of the university environment. As interviewees acknowledged the importance of other actors in the success or failure of an entrepreneurial venture, they also revealed the impact of the micro-institutional context for action on their perceived capacity of in establishing necessary relationships with such actors.

### 8.2.4. Self-Efficacy and Perceptions of Interpersonal Control

This section will discuss the findings of the study that detail the impact of interpersonal control perceptions on the self-efficacy of interviewees in this study as it related to entrepreneurial behaviour. The findings contribute to understanding of the cognitive underpinnings of the entrepreneurial university by detailing the effect of interpersonal control on the self-efficacy perceptions of academics in the two empirical cases, and
thereby address specific calls within the university based entrepreneurship literature to examine elements of the perceived control construct in more detail (Goethner et al. 2012, Obshonka et al. 2012), and examine how academics perceive the challenge of developing relationships with non-academic actors in pursuing entrepreneurial ventures (Mosey and Wright 2007, Tartari et al. 2012). The findings in section 6.2.4 address these gaps in the literature by detailing the impact of the micro-institutional context on the interpersonal control perceptions of academics in the Alpha and Beta cases, and consequently the implications for the perceived self-efficacy of interviewees with respect to entrepreneurial behaviour.

The social nature of action renders interpersonal control perceptions an antecedent of critical importance to self-efficacy (Paulhus and Christie 1981, Paulhus 1983). The individual is called upon in their engagement in social behaviour to actively defend “his or her interests” in social interactions or attempt to “develop social relationships” as a matter of course in their social existence (Paulhus 1983, p.1254). Interpersonal control can be particularly significant in the context of behaviours that entail a relatively high level of role ambiguity (Von Emster and Harrison 1998), such as when individuals engage in behaviours which cross conventional boundaries (Kahn et al. 1964, Von Emster and Harrison 1998). This makes it a particularly relevant concern in the context of university based entrepreneurship as academics are required to engage with a range of non-academic actors in pursuing an entrepreneurial venture (Tartari et al. 2012). These findings offer a number of key contributions to understanding of the impact of micro-institutional dynamics on entrepreneurial intent in this respect, and consequently to understanding of the institutional transformation entailed in the emergence of the entrepreneurial university.

8.2.4.1 Non-Academic Actors and Interpersonal Control

Firstly, academics in both cases recognised the necessity of experts in other non-academic fields if successful outcomes in an entrepreneurial venture were to be achieved. In this sense they recognised the boundaries of their own sphere of
competence and additionally the need for interaction with actors beyond the boundaries of academia in engaging in entrepreneurial behaviour. Entrepreneurial behaviour therefore entailed involvement in novel social situations wherein relationships with novel actors would need to be established. This reflects assertions that the development of mutually beneficial relationships and the attendant skills involved is an important factor in the emergence of entrepreneurial behaviour in academia (Mosey and Wright 2007, Bjerregaard 2010). It also points to recognition on the part of the academics in the empirical cases that entrepreneurial behaviour was external to their domain of expertise, and consequently external to the institutional domain of academia.

Consequently, entrepreneurial acts required interaction with individuals who would operate on the basis of differentiated principles and assumptions as such individuals would be guided in their actions by a non-academic institutional logic (Thornton and Ocasio 1999, Thornton and Ocasio 2008). This reflects the significance of recurrent patterns of interaction as an embedded dimension of the organising principles and institutional domains which guide social behaviour (Johnson et al. 2000), and highlights that changes in these patterns as predicted by triple-helix perspectives is itself a transformative process and subject to micro-dynamics of persistence and change. The perspectives offered by academics in the empirical cases suggest that this an underlying factor in much of the cultural tension implicit in university-industry interaction (Bjerregaard 2010), and highlights the non-trivial nature of intersections of institutional logic.

8.2.4.2 Social Embeddedness of Support Structures and Interpersonal Control

This finding leads to a second key contribution revealed by these findings, namely that the support mechanisms in place at the micro-institutional level impacted upon the interpersonal control perceptions of academics in the Alpha and Beta cases. Whereas Alpha case academics typically regarded their local environment’s support mechanisms as unlikely to aid them in developing the requisite relationships for successful entrepreneurial outcomes, Beta case interviewees viewed their local environment more
positively in this respect and consequently made more positive assessments of their interpersonal control capabilities in the context of an entrepreneurial venture. This effect was mitigated by industrial or entrepreneurial experience, reflecting previous findings in the literature as to the significance of that factor (Mosey and Wright 2007, Perkmann et al. 2013).

This provides some scope for better understanding of how micro-institutional dynamics impact upon the self-efficacy and control perceptions of academics by illustrating the manner in which the local context shapes the individual academic’s perception of their interpersonal control capabilities in the context of an entrepreneurial act. Academics in the Alpha and Beta cases fundamentally regarded entrepreneurship as a boundary spanning act (Lam 2010, Tartari et al. 2012), and as such regarded the cultivation of successful relationships with external actors as one wherein their interpersonal control capabilities would be challenged. Collaborating with non-academic actors in relatively high-risk ventures may involve higher levels of dissonance for academics embedded in a public institution as such contexts are heavily rule based and accommodate relatively lower levels of individual discretion in action (Meyer and Rowan 1977, Ozcan and Reichstein 2009). By contrast, external actors have greater scope for individual discretion, and as such their actions are less predictable. The provision of reliable mechanisms through which relationships with such actors may be successfully maintained consequently seemed especially important to academics in the empirical cases.

This offers a response to Bouelos et al.’s (2012) contention that better understanding of the complex relationship between entrepreneurial intent and support structures is needed by highlighting that the social embeddedness of university support structures in the local context of action has significant consequences for entrepreneurial intent, as assumptions which affect control perceptions are based on perceptions of support availability. In the context of the entrepreneurial university, these findings also further calls to better contextualise entrepreneurship by highlighting an important dimension of the dynamic relationship between entrepreneurial cognition and cultural-cognitive structures (Thornton et al. 2011, Guerrero and Urbano 2012).
8.2.5 Concluding Comments for Research Question Three

This section has discussed the findings of the study outlined in section 6.2 which addressed the impact of the micro-institutional context on the self-efficacy perceptions of academics in the empirical cases. Self-efficacy perceptions were shaped by the embeddedness of an entrepreneurial orientation in the local institutional logic through vicarious experience, verbal cues, and assumptions about the feasibility of interpersonal control. These mechanisms were significant in the formation of the interviewed academics’ feasibility perceptions with respect to entrepreneurial behaviour, and as such appear to be an important part of micro-foundations of the institutional transformation entailed within triple-helix perspectives of the entrepreneurial university (Etzkowitz 2003, Bercovitz and Feldman 2008).

Consequently, these mechanisms also appear significant in the context of current understanding of the cognitive micro-processes of institutional change (George et al. 2006), as they described in detail the relationship between the context of the embedded actors and the control perceptions which shaped their orientation towards non-isomorphic behaviour. Assessments of entrepreneurial scenarios as situations wherein they were likely to behave competently were socially reinforced through the aforementioned mechanisms in the Beta case, whereas Alpha case academics did not describe their self-efficacy as having been enhanced through these mechanisms in the context of their local environment. The motivational force of entrepreneurial action was therefore impacted by the framing of such behaviour within the prevailing institutional logic as a feasible means of satisfying the individual academic’s motivations. A summary of the contributions of these findings to the literature is provided in table 8.2.
### Table 8.2: Summary of Key Contributions of Findings for RQ 3

<table>
<thead>
<tr>
<th>Finding</th>
<th>Key Contributions</th>
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</table>
| **8.2.1.** The extent of the *embeddedness of an entrepreneurial orientation at the micro-level influenced the self-efficacy perceptions of academics* with respect to entrepreneurial behaviour. | (1) The micro-processes of the institutional transformation entailed in the triple-helix perspective are in part manifested through self-efficacy enhancing or diminishing mechanisms which operate at the micro-level.  
(2) Academics arrived at the assessment of an entrepreneurial scenario as one in which they were competent and capable of generating successful outcomes when they were embedded in a context within which this perspective was socially reinforced.  
(3) The embeddedness of an entrepreneurial orientation shaped the motivational force of entrepreneurship by framing such action as a feasible means of satisfying the individual’s motivations. |
<table>
<thead>
<tr>
<th><strong>8.2.2.</strong> The embeddedness of an entrepreneurial orientation was reflected in the <em>vicarious experiences</em> of academics which consequently impacted upon their self-efficacy perceptions.</th>
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</thead>
<tbody>
<tr>
<td>(1) Vicarious experiences shape means-ends assumptions with respect to the feasibility of entrepreneurial initiatives and are a significant element of experiential underpinnings of entrepreneurial propensity</td>
</tr>
<tr>
<td>(2) Vicarious experience prompted the internalisation of efficacy enhancing or diminishing assumptions, framed the feasibility of balancing academic and entrepreneurial demands, and rendered entrepreneurial individuals as either identifiable figures or stereotypes, showing how embedded cultural logic enables or constrains the cognition and action which underpins non-isomorphic change</td>
</tr>
<tr>
<td>(3) Vicarious experience is significant not only to the formation of attitudes about what is expected or legitimate, but also to what is plausible or realistic, and in this respect shapes entrepreneurial motivation</td>
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</table>

<table>
<thead>
<tr>
<th><strong>8.2.3.</strong> The embeddedness of an entrepreneurial</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The sense-making processes through which academics form self-efficacy perceptions with respect to entrepreneurship is shaped by situated social</td>
</tr>
</tbody>
</table>
orientation was reflected in the verbal cues experienced by academics which shaped their self-efficacy perceptions with respect to entrepreneurial behaviour.

interactions which reflect elements of collective cultural attitudes

(2) The motivational force of factors typically reported as driving an individual’s entrepreneurial behaviour in the academic context are linked to action through verbal cues from socially proximate actors who reinforce the individual’s intrinsic motivations

<table>
<thead>
<tr>
<th>8.2.4.</th>
<th>The micro-level context impacted upon the interpersonal control perceptions of academics in the domain of entrepreneurial behaviour by shaping their assumptions about the feasibility of developing the requisite relationships for success in an entrepreneurial venture.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(1)</strong></td>
<td>A weakly embedded entrepreneurial logic was reflected in assumptions about entrepreneurial support structures which diminished academics’ interpersonal control perceptions</td>
</tr>
<tr>
<td><strong>(2)</strong></td>
<td>A strongly embedded entrepreneurial logic was reflected in assumptions about entrepreneurial support structures which enhanced academics’ interpersonal control perceptions</td>
</tr>
</tbody>
</table>
8.3 Collective-Efficacy and Institutional Trust

This final section of chapter eight will discuss the findings from the study which describe the manner in which micro-institutional trust dynamics shaped the perceived feasibility of entrepreneurial behaviour by influencing the collective-efficacy perceptions of academics in the empirical cases.

8.3.1. Key findings of Research Question Four

When a given behaviour is regarded as requiring the assistance of other organisational figures for its performance, collective-efficacy perceptions are likely to be significant (Bandura 1986, Krueger 2000). The discussion in the previous section addressed the finding that academics in the Alpha and Beta cases acknowledged the necessity of non-academic actors in the achievement of successful outcomes in an entrepreneurial venture (Mosey and Wright 2007, Tartari et al. 2012), and perceptions of the availability of support mechanisms for the development and maintenance of necessary relationships with such figures were found to have impacted upon interviewees’ perceptions of interpersonal control. While interpersonal control is represented within the literature as an element of an individual’s control and self-efficacy perceptions (Paulhus 1983), the issue nevertheless brought to light the significance of embedded assumptions about university support structures and the perceived feasibility of entrepreneurial behaviour. As such, attitudes towards university based agents tasked with the support of entrepreneurial behaviour on the part of academics emerged as a significant factor in the formation of collective-efficacy assumptions. Therefore, such attitudes were found to be a significant underpinning factor in the presence of entrepreneurial intent in both the Alpha and Beta cases.

From the earlier discussion of the collective-efficacy antecedent in this thesis, the following research question was arrived at:
“How are control and collective-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional trust dynamics at the micro-level in the university context?”

In answering this question, a number of interesting issues emerged in the relevant findings. The primary factors which were revealed in the data analysis will be addressed in detail in the remainder of this section and are outlined in table 8.3, but initially, this section will provide an overview of the significance of these findings in the context of the relevant literature.

<table>
<thead>
<tr>
<th>Table 8.3: Core Discussion Points for Research Question Four</th>
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<tr>
<td><strong>8.3.1.</strong> The extent of the embeddedness of an entrepreneurial logic at the micro-level influenced the collective-efficacy perceptions of academics with respect to entrepreneurial behaviour.</td>
</tr>
<tr>
<td><strong>8.3.2.</strong> The embeddedness of an entrepreneurial orientation was reflected in the competence based trust expressed by academics in the university’s entrepreneurial support structures, which impacted upon their collective-efficacy perceptions with respect to entrepreneurial behaviour.</td>
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<tr>
<td><strong>8.3.3.</strong> The embeddedness of an entrepreneurial orientation was reflected in the relational trust levels expressed by academics in the university’s entrepreneurial support structures, which impacted upon their collective-efficacy perceptions with respect to entrepreneurial behaviour.</td>
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</tbody>
</table>

Understanding the micro-foundations of institutional persistence and change requires an understanding of the emergence and contestation of new organising principles and institutional logics (Townley 2002). Trust, as it relates to expectations about the behaviours of others in an institutional context, is fundamental to the emergence and contestation of both values and the appropriateness of organisational goals (Sonpar et al. 2009). The findings of this study demonstrated the impact of two different types of trust on the collective-efficacy perceptions of the interviewed academics. The first of these was [competence, or ability, based trust](#) which relates to the characteristics that shape the perceived trustworthiness of an actor to perform well in a given domain.
The second type of trust which had significance was relational, or integrity, based trust which has its source in the ‘social bond’ which ties social actors to each other (Braithwaite 1998, McEvily et al. 2003).

This social bond is fundamental to our understanding of the role of institutional trust dynamics in the context of university based entrepreneurship. As shared institutional logics provide social actors with similarly shared norms, values, and beliefs about social purpose and processes in a given environment, the emergence of new institutional logics creates new social roles or amends existing ones, challenging the prevailing norms, values, and beliefs which underpin the social bond of institutional actors (Friedland and Alford 1991, Thornton and Ocasio 2008, Reay and Hinings 2009). Evolution from the traditional academic behavioural paradigm towards an entrepreneurial interpretation of the academic role therefore requires change in the relational patterns of academia as an institutionalised role (Jain et al. 2009, Lam 2010), and as such creates novel social bonds which give rise to the relational trust necessary for cooperation with novel actors.

These findings make a number of contributions to the university based entrepreneurship literature. Firstly they contribute to and extend current perspectives on the role of trust in diminishing barriers to university-industry interaction (Bruneel et al. 2010) and on the importance of relational trust in underpinning effective knowledge transfer in particular (Mora-Valentin et al. 2004, Plewa et al. 2013). The findings show that collective-efficacy as a critical antecedent of entrepreneurial intent was shaped in the empirical cases by embedded assumptions about entrepreneurial support agents in the prevailing institutional logic. These assumptions impacted upon the perceived trustworthiness of TTO professionals, and therefore shaped academics’ perceptions of risk and associated expectations of control in an entrepreneurial venture. The findings also showed that the perceived social bond and sense of mutual interdependence which tied academic and TTO interests together was significant in shaping expectations that the TTO would adequately represent academic interests in the high-risk, boundary spanning activity which an entrepreneurial venture may involve.
Secondly, the findings build on Santoro and Gopalakrishnan’s (2000) finding that the institutionalisation of knowledge transfer activities is dependent upon the embeddedness of assumptions in the dominant institutional logic about the trustworthiness of key parties to collaborative activities. The findings show that such assumptions are a key moderator of behaviour in a university context due to the impact they exert on collective-efficacy perceptions. This aspect of the study complements findings in previous studies that the age of a TTO is a significant factor in its effectiveness (Siegel et al. 2003, Powers and McDougall 2005) by demonstrating the significance of institutionalised assumptions about TTOs in universities with both an emerging and established entrepreneurial orientation.

In this respect, the findings make a third contribution to the university based entrepreneurship literature by extending understanding of the nature of the underlying tensions which call into question Etzkowitz et al.’s (2000) depiction of a global isomorphic progression towards an entrepreneurial university ideal (Philpott et al. 2011). These findings indicate that a challenge posed by policy driven implementation of instruments of entrepreneurial support is the emergence of relational trust between academics and actors whom they regard as being beholden to other stakeholders, being as they are an instrument of management or government policy. As such the findings make an important contribution to understanding within the literature of the limitations of top-down cultivation of entrepreneurial behaviour by describing the fundamental importance of trust as an organising principle in the emergence of an entrepreneurial logic, and how collective-efficacy perceptions are diminished in its absence (Jacob et al. 2003, Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011).

Fourthly, these findings enrich current understanding of the factors which determine academic willingness to engage with TTOs (Siegel et al. 2003, Jensen et al. 2003, Powers and McDougall 2005), in particular bringing to light a variety of trust-based norms which shape academic perceptions of the risk associated with an entrepreneurial venture. By identifying a variety of both relational and competence based factors which shape academic perceptions of the risk associated with an entrepreneurial venture, the findings add to current understanding of TTO redundancy and the basis of academic
inclination towards the use of personal networks in the pursuance of entrepreneurial ventures (Mosey and Wright 2007, Markman et al. 2009, Aldridge and Audretsch 2010).

Finally, these findings add to antecedent based studies of entrepreneurial behaviour in academia by demonstrating the significance of trust in the formation of collective-efficacy perceptions. As such, they address calls in previous studies for a greater focus on the contextual factors which influence the antecedents of entrepreneurship in the university (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012), and calls within the mainstream entrepreneurship literature for explorations of the relationship between context and intentions formation (Carsrud and Brannback).

Having given an overview of the significance of these findings to the literature in this section, the following sections will discuss the key mechanisms uncovered in the findings in greater detail.

8.3.2 Competence Based Trust and Collective-Efficacy Perceptions

This section will discuss the findings of the study that detail the impact of competence based trust in local actors tasked with supporting academics’ entrepreneurial actions on the collective-efficacy perceptions of interviewees. The findings contribute to understanding of the cognitive underpinnings of the entrepreneurial university by describing an important effect of trust dynamics at the micro-institutional level on the collective-efficacy perceptions of academics in the two empirical cases, and therefore address a specific gap in the literature by enriching current understanding of the nature and emergence of trust as a fundamental element of systemic innovation (Brattstrom et al 2012). These findings also complement a number of previous studies on the challenge posed by trust in this context (Bruneel et al. 2010, Tartari et al. 2012, Commachio et al. 2012, Giaretta 2013) by demonstrating the importance of order and
performance track record on trust in the context of inter-institutional knowledge transfer.

Unlike the majority of previous studies, this study details the role of trust in intra- as opposed to inter-organisational relationships by addressing trust as a significant internal factor in a university’s entrepreneurial orientation, as opposed to a variable that has significance only in the context of collaboration with external partners. In this sense, the study attends to its core aim of examining the manner in which micro-institutional dynamics shape the antecedents of entrepreneurial intent, thereby furthering understanding of how institutional context constrains or enables the proliferation of entrepreneurship (Thornton et al. 2011, Guerrero and Urbano 2012) and addressing the under-explored relationship between institutional structures and entrepreneurial behaviour (Zahra and Wright 2011, Greenman 2013).

As an institutional order undergoes change, the extent to which a change agent demonstrates competence influences the extent to which trust will ensue and resources will be mobilised in support of that change (Sonpar et al. 2009). In the context of university based entrepreneurship, such mobilisation is manifested as the commitment of effort at the level of the individual academic to behaviours which complement the aims of the third mission. In the empirical cases, the entrepreneurial intent which underpins this behaviour was shaped by the extent to which the Alpha and Beta case academics trusted the competence of university based commercialisation agents, and consequently formed perspectives on the feasibility of entrepreneurial ventures on the basis of perceived collective-efficacy. As we have seen in the discussion of self-efficacy and the institutional context, academics in the empirical cases acknowledged the necessity of non-academic actors in the development of a successful entrepreneurial venture which brought to light the significance of interpersonal control perceptions.

Further exploration of individual attitudes towards agents of entrepreneurial support revealed the significance of more explicit assumptions held by the interviewed academics. Whereas interpersonal control perceptions revealed attitudes prompted by
embedded assumptions about locally available supports for entrepreneurship, competence trust based perspectives spanned from explicit beliefs about the efficacy of other actors in the university. While interpersonal control perceptions relate to individual’s beliefs about their own capabilities, perspectives on trust are concerned with the characteristics of other actors. In this context, the feasibility perceptions of academics with respect to entrepreneurship were influenced by their trust in the competence of actors who were tasked with supporting the entrepreneurial efforts of academics. The manner in which competence based trust operated in the empirical cases demonstrated the significance of two key elements of the role of systemic trust (Bratstromm et al. 2012) in the context of entrepreneurial behaviour in the university. Firstly, trust emerged beyond the scope of individual interactions and was a product of more complex social dynamics. And secondly, trust appeared to be a product of embedded social structures and processes, existing between individuals and other organisational elements as well as existing between individual actors.

These findings make a number of further contributions to understanding of the significance of competence based trust in the context of university based entrepreneurship, and its role in the wider emergence of entrepreneurial intent in this context. These will be described in the following sections.

8.3.2.1 Exchange Trust Norms and Competence Based Trust

The first key contribution offered by these findings is that interviewee perspectives on the leadership and performance track record of agents of entrepreneurial support impacted upon the collective-efficacy perceptions of academics by shaping shared competence based assumptions about the trustworthiness of such agents. These issues aligned with Braithwaite’s (1998) exchange trust norms of order and performance track record, and as such pointed to the special significance of these norms in the context of university based entrepreneurship. The level of uncertainty and risk entailed on the one hand, and the boundary spanning nature of entrepreneurial behaviour on the other gave these security based values salience for the interviewed academics (Lam 2010, Bruneel
et al. 2010). These values are typically framed by social actors as the security offered by the target actor against the opportunistic behaviour of others (Braithwaite 1998). The ‘boundary work’ involved in entrepreneurial behaviour for academics is by its nature sociologically ambivalent (Lam 2010), throwing into doubt the logics of action which underpin behaviour in the academic domain and creating greater scope for opportunistic action (Bruneel et al. 2010).

In engaging in high-risk ventures with non-academic actors, such opportunism offers a significant source of concern for entrepreneurial academics. TTOs, as boundary spanning or ‘guarantor’ institutions, are expected to act in a fashion that secures against this risk (Giaretta 2013), and as such their congruence with these security or exchange trust values were significant in the competence based trust placed in them by the interviewed academics. Order and performance track record both emerged in the interviews as diminishing or enhancing academics’ perceptions of the competence based trustworthiness of TTO professionals. In the Alpha case, perceptions of disorder, or poor performance track records undermined perceptions of competence in the TTO, ultimately diminishing the collective-efficacy perceptions of Alpha case academics. In the Beta case, the TTO was positively perceived in relative terms with respect to these essential values, with Beta case academics consequently expressing relatively higher levels of collective-efficacy as a consequence.

8.3.2.2 Competence Based Trust and Entrepreneurial Orientation

A second key contribution offered by these findings is that competence based trust served as an important mechanism through which entrepreneurial orientation was moderated by the university context in the empirical cases. By influencing the control and collective-efficacy perceptions of locally situated academics, embedded assumptions about the competence of entrepreneurial support agents shaped the orientation of individual academics towards the entrepreneurial or traditional behavioural paradigms. Perceptions of orderliness and performance track record were as much a product of the social embeddedness of entrepreneurial agents as they were of
objective reality, with these assumptions often being held in the absence of personal experience that would support them. This supports McEvily and Marcus’ (2005) finding that social embeddedness is a crucial factor in both the emergence of trust and accumulation of information about the capabilities of other social actors which facilitates it. Within the university based entrepreneurship literature this furthers findings from Power and McDougall (2005) by showing how accumulation of shared experiences is a key element of entrepreneurial culture in this context.

Demonstration of congruence with valued norms occurs over time (Sonpar et al. 2009), and trust emerges only as the target actor has opportunities to meet the expectations of observing actors. In the Beta case for example, the positive track record of the TTO had been achieved over a significantly longer period of time than the Alpha case TTO had been in existence. An important implication for the emergence of an entrepreneurial orientation in the university may be that the absence of competence based trust between entrepreneurial support agents and academics serves as a stubborn means of persistence of traditional institutional orthodoxy, as the insecurity and perceptions of risk which result diminish the collective-efficacy perceptions of locally embedded academics. This study therefore contributes to understanding of why the age of a TTO may be a significant factor in its effectiveness (Siegel et al. 2003, Chukumba and Jensen 2005, Powers and McDougall 2005) as demonstrations of adherence to exchange trust norms is on the one hand a gradual process, and is on the other hand an important factor in the formation of collective-efficacy perceptions and as such in the proliferation of entrepreneurial intent.

8.3.3 Relational Trust and Collective-Efficacy Perceptions

This section will discuss the findings of this study which described the significance of relational based trust issues for academics’ collective-efficacy perceptions in the Alpha and Beta cases. These findings contribute to understanding of the cognitive underpinnings of the entrepreneurial university by detailing the effect of the institutional trust dynamics at the micro-level on the collective-efficacy perceptions of
academics in the context of their university, and contribute in a specific sense to prevailing understanding within the literature of the relational based trust issues which impact upon the orientation of academics towards university-industry interaction.

Knowledge based trust perspectives as they pertain to the competences of another actor are significant but not sufficient in explaining the role of trust in social interaction, particularly the willingness of individuals to engage in risk-taking behaviour that requires a state of personal vulnerability to the behaviour of the target actor. As Braithwaite (1998) states:

“Such an informational base contributes to trust but is not sufficient; trust comes with a shared understanding that one is relying on the other. Trust in (this) sense transcends information and has its source in the social bond.”

This ‘social bond’ is integral our understanding of the dynamics of institutional trust in this context. It is an especially important consideration for the occupants of specialised roles concerned with the commercialisation of university based research, given their boundary spanning activities which serve as a bridge between otherwise disconnected organisations and individuals (McEvily et al. 2003, Perrone et al. 2003, Powers and McDougall 2005). The role of the university’s TTO, for example, can be understood as being in part a matter of representing individual academic’s interests in interactions with other parties (Jensen and Thursby 2001, Markman et al. 2005, Powers and McDougall 2005, Clarysse et al. 2007).

Consequently, the extent to which academics are willing to engage in trust dependent activities such as disclosing of information, committing to partnerships, and suspending judgement (McEvily 2003) may be shaped in part by their identification of the TTO professionals, both collectively and individually, as sharing their preferences and priorities. Indeed, relational trust in particular appears to be a crucial element of what Rooney et al. (2005, p.2) “deeper and more fundamental social, cultural, and communication processes that condition knowledge creation and use”, and
consequently form the cultural-cognitive infrastructure of the knowledge economy itself.

This issue was revealed as significant in the analysis of findings of this study, and these findings offer several contributions to understanding of the impact of micro-institutional dynamics on the cognitive antecedents of entrepreneurial intent in the university context.

8.3.3.1 Relational Trust and Shared Values

The **first key contribution** offered by these findings is that levels of relational trust were dependent upon expectations that TTO actors would share the preferences and priorities of the interviewed academics themselves. This complements a range of studies in the literature by advancing current understanding of academic propensity to engage with their university’s TTO, as well as providing insight into the qualitative nature the relationship between academics and TTO professionals (Jensen et al. 2003, Levin and Cross 2004, O'Shea et al. 2005). In the Alpha case, a general sense that TTO officers had not invested significant effort in developing relationships with faculty created a widespread assumption that the TTO did not understand the challenges faced by academics, and that they did not identify with their preferences and priorities. As Lewicki and Bunker (1996) suggest, regular interpersonal interaction cultivates stronger levels of identification with another’s needs, preferences and priorities over time which accelerates the emergence of shared belief and value systems. This clearly serves as an obstacle for TTOs in early stage entrepreneurial universities, as the shared experiences which engender such cultural integration take time to accumulate. As such, this obstacle seems an important manifestation of the liability of newness which affects institutionally novel organisations such as immature TTOs in the context of the universities in which they are established (Stinchcombe 1965, Singh et al. 1986).
In the Beta case, academics were more likely to describe the TTO as an actor which would value their preferences and priorities, which demonstrated the value of a shared history of social interaction between academics and TTO professionals as a factor in the emergence of relational trust. It additionally suggests that the gradual institutionalisation of assumptions about other necessary groups in the entrepreneurial process, in this instance TTO professionals, is itself an important process in the institutionalisation of an entrepreneurial orientation. In this respect the study makes a further contribution to the debate on the significance of TTO age and experience (Siegel et al. 2003, Chukumba and Jensen 2005, Powers and McDougall 2005), as the required social bond may only emerge as demonstrations of trustworthiness accumulate.

8.3.3.2 Relational Trust and Mutual Interdependence

An important and related second contribution made by these findings is that the embeddedness of the TTO in the local context was reflected in assumptions about the TTO’s own interests, and the extent to which they were beholden to and acting in the interests of parties other than the academics themselves. This provides an interesting insight into the difficulties faced by policymakers with respect to the top-down implementation of policies intended to support entrepreneurial behaviour in the academy. It also supports Philpott et al.’s (2011) contention that underlying tensions may serve to frustrate such initiatives. In the Beta case, the TTO was generally regarded as an autonomous actor which possessed the discretion to engage with academics in a manner in which their priorities and preferences were more likely to be valued. The aforementioned ‘social bond’ arose out of a sense of a shared dependence between the academic and the TTO, reflecting what Braithwaite (1998, p.46) described as the need for a “shared understanding that one is relying on the other” as a basis of trust between social actors. By contrast, Alpha case academics regarded the TTO as beholden to other actors, both internal (university management) and external (government agencies), with divergent interests to the academics themselves. This assumption was underpinned by a range of issues, perhaps most prominent among them the TTO’s perceived short term focus, but also the perceived lack of effort in building
relationships with faculty and the perceived prevalence of industrial or corporate logic in TTO modes of operation.

These issues were reflected in a widespread assumption that the TTO was an implement of management, or externally originated policy, and as such had to some degree been shaped in its approach to entrepreneurship by exogenous experience and interests. As such, TTO actors in the Alpha case were seen as being ‘bonded’ to those parties and not to the academics themselves. Consequently the sense of mutual interdependence and shared interest between academics and TTO professionals was undermined, diminishing the willingness of academics to accept the vulnerability associated with entrepreneurial action to the extent that this vulnerability was related to the actions of the TTO itself. This finding complements Peronne et al.’s (2003) study into the emergence of trust in boundary spanning actors, finding that the perceived independence of TTOs is crucial to the institutionalisation of assumptions of mutual interest which in turn underpin relational trustworthiness. In addition, by describing how this factor was significant in the persistence of a traditional orientation in the Alpha case, this finding furthers understanding of the influence of the micro-social dynamics through which institutions condition entrepreneurial intentionality (Thornton et al. 2011, Guerrero and Urbano 2012).

8.3.3.3 Relational Trust and TTO Redundancy

A third contribution offered by these findings is that low levels of relational trust gave rise to TTO redundancy, and an expressed preference for personal networks in the Alpha case. Academics employing their personal networks and utilising their own social capital in the pursuit of entrepreneurial ventures is well documented in previous empirical studies in the literature (Mosey and Wright 2007, Siegel et al. 2007, Markman et al. 2009, Aldridge and Audretsch 2010). These findings provide insight into the cognitive underpinnings of this inclination and the tendency for technology and knowledge transfer to take place ‘through the back door’, or through informal channels as opposed to through formal university mechanisms. The perception of the TTO as an
instrument of policy and its status as an institutionally novel actor prompted academics in the Alpha case to regard it as operating on the basis of an incongruent set of preferences and priorities, and ultimately dependent not upon the academics themselves but on management and external political support for its existence.

This suggests that redundancy of TTOs is to some extent a product of the cultural embeddedness of both the TTO, and the sense of mutual interdependence or social bond it has established with the local academic community. These findings therefore indicate that the cognitive infrastructure which underpins entrepreneurial orientation in the university is partially constituted by a social bond between academics and agents of entrepreneurial support, wherein a strong sense of interdependence and mutual interest prevails. As the institutional logics in a given context change, perceptions of control in non-isomorphic or entrepreneurial scenarios are moderated by levels of relational trust between the actors in the new relational configurations which must emerge. This supports analysis by Clarysse et al. (2011) that the TTO’s effectiveness in cultivating a vibrant entrepreneurial culture depends not just upon technical competence, but also upon the establishment of a social environment for entrepreneurship. These findings indicate that collective-efficacy perceptions, a critical antecedent of entrepreneurial behaviour, are sensitive to the TTO’s performance in this respect, as relational trust levels appear to play an important role.

Furthermore, these findings extend Owen-Smith and Powell’s (2001) conclusion that the exertion of pressure on TTOs to justify their funding may lead them to ignore ‘bread and butter’ disclosures and as such alienate elements of the local academic community. The lens of analysis adopted in this study suggests that in adopting this posture the development of principles of organisation that foster cooperation between academics and TTOs, in the sense understood within institutional logics perspectives, is significantly stunted. To the extent that such organising principles are a constitutive dimension of the underlying logic of entrepreneurial universities, this study suggests that external pressure on TTOs to ‘hit the jackpot’ may paradoxically and quite fundamentally impede the emergence of an entrepreneurial orientation in the university.
A **final contribution** offered by the findings of the study relates to the importance of the university’s administrative structures in shaping interviewees collective-efficacy perceptions. Relational and integrity based trust are closely aligned as constructs, with both primarily being concerned with the risk of opportunistic behaviour arising out of divergent priorities and interests (Mayer et al. 1995, McEvily et al. 2003, Das and Teng 2004). In this respect, interpretations of either symbolic or substantive commitment to the support of entrepreneurial behaviour on the part of the university were an important factor in the formation of assumptions about the integrity and attendant institutional value of entrepreneurial activities. The significance of this can be understood within McEvily et al.’s (2003) analysis of the role of trust in organisational functionality, as they state that “from a mobilising perspective trust motivates actors to contribute, combine, and coordinate resources toward collective endeavours.” Similarly, Sonpar et al. (2009) argue that the significance of a collective and institutionalised trust in the value of certain principles is the mobilisation of effort in attendance to that principle.

The findings of this study showed that the perceived integrity of the third mission in a given university context, and consequently the embeddedness of entrepreneurship as a valued principle in the local logics of action, matters because of the implications for the emergence of trust on the part of individual academics in organisation-wide commitment to supporting entrepreneurial behaviour. In the context of the university based entrepreneurship literature, these findings shed light on the role of the university bureaucracy both in the formation of collective-efficacy perceptions and the institutionalisation of an entrepreneurial orientation at the micro-level. Siegel et al. (2003) point to the significance of the flexibility displayed by the administrative bureaucracy in the formation of feasibility assessments on the part of individual academics. Similarly, Guerrero et al. (2012) point to the potential for administrative structures to frustrate entrepreneurial initiative. The findings of this study suggest that these structures are significant in more than just the operational sense, with expectations about their likely cooperation in the pursuit of entrepreneurial ventures.
reflecting embedded assumptions about the institutional value of entrepreneurial
behaviour, with significant consequences for the mobilisation of effort to that end.

The symbolic-substantive commitment dichotomy also supports Krucken’s (2003)
analysis of entrepreneurial structures as a symbolic adaptation of the university to
external pressures as opposed to a substantive one. While this does not suggest that
TTOs cannot ultimately play a significant role as institutional entrepreneurs, it perhaps
suggests that while a university may adapt to an entrepreneurial mandate in a highly
visible manner through the establishment of such structures, the adaptation remains
largely symbolic in the absence of the social embeddedness of an attendant
entrepreneurial logic.

8.3.4 Concluding Comments for Research Question Four

This section has discussed the relevance of the findings of this study outlined in section
7.3 to the literature, addressing the significance of the micro-institutional context on the
collective-efficacy perceptions of the academics in the empirical cases. Collective-
efficacy perceptions were shaped by embedded assumptions in the local logics of action
which formed the basis of the perceived competence based and relational
trustworthiness of agents and structures of entrepreneurial support. These factors
therefore served as important mechanisms through which entrepreneurial orientation
was moderated by the micro-institutional context, and offer a range of insights into the
micro-foundations of the process of institutional transformation entailed within triple-
helix perspectives of the entrepreneurial university (Etzkowitz 2003, Bercovitz and
Feldman 2008).

An actor’s propensity to engage in an entrepreneurial behaviour is depicted within both
the entrepreneurship and institutional literatures as being shaped by their feasibility and
control perceptions (Krueger 2000, George et al. 2006). These findings suggest that
collective-efficacy perceptions in the context of entrepreneurial ventures are influenced
by trust based assumptions about necessary non-academic actors, and these assumptions are in turn embedded in the local institutional logic. Trust, therefore, emerged as a key mechanism through which an institutionalised social order was maintained in the empirical cases, with propensity to engage in entrepreneurial behaviour being dependent upon it. Consequently, these findings indicate that competence and relational trust are critical elements of the cognitive infrastructure which underpins the entrepreneurial university. A summary of the contributions these findings make to the literature is provided in table 8.4.
### Table 8.4: Summary of Key Contributions of Findings for RQ 4

<table>
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<th>Finding</th>
<th>Key Contributions</th>
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| **8.3.1.** The extent of *the embeddedness of an entrepreneurial logic at the micro-level influenced the collective-efficacy perceptions* of academics with respect to entrepreneurial behaviour. | (1) The perceived social bond and sense of mutual interdependence which tied academic and TTO interests together was significant in shaping expectations that the TTO would adequately represent academic interests in the boundary spanning activities.  

(2) The institutionalisation of knowledge transfer activities in the university context is partially dependent upon the embeddedness of assumptions in the dominant institutional logic about the trustworthiness of key parties such as TTOs.  

(3) Relational trust issues challenge top-down implementation of instruments of entrepreneurial support due to the consequences for collective-efficacy perceptions. |
| 8.3.2. The embeddedness of an entrepreneurial orientation was reflected in the competence based trust expressed by academics in the university’s entrepreneurial support structures, which impacted upon their collective-efficacy perceptions with respect to entrepreneurial behaviour. | (4) Adherence to a number of competence and relational trust norms is significant in shaping academic willingness to engage with TTOs, and is consequently significant to the problem of TTO redundancy

(5) Institutional trust dynamics are a significant contextual factor in the formation of the antecedents of entrepreneurial intent |

(1) Perceived adherence to exchange based trust norms such as orderliness and performance track record on the part of the TTO influenced the collective-efficacy perceptions of academics

(2) Trust emerged beyond the scope of individual interactions and was a product of more complex social dynamics and embedded social structures and processes |
8.3.3. The embeddedness of an entrepreneurial orientation was reflected in the relational trust levels expressed by academics in the university’s entrepreneurial support structures, which impacted upon their collective-efficacy perceptions with respect to entrepreneurial behaviour.

(1) Levels of relational trust were dependent upon expectations that TTO actors would share the preferences and priorities of the academics themselves.

(2) Perceptions of mutual interdependence were significant in shaping relational trust levels.

(3) Low levels of relational trust contribute to TTO redundancy, and reinforce academic preference for use of personal networks in knowledge transfer.

(4) The perceived integrity of the university’s commitment to the support of entrepreneurship shaped perceptions of the relational trustworthiness of administrative structures.
8.4 Conclusion

This chapter has discussed the findings of the study as they relate to the underpinning elements of academics’ feasibility perceptions in the empirical cases, namely perceived self-efficacy and perceived collective-efficacy. In so doing, this chapter has discussed the mechanisms through which the feasibility perceptions of academics with respect to entrepreneurial behaviour were shaped by the micro-institutional context in the study as they inform the extant literature. The contributions of these findings to current understanding of the relationship between the university as a context for action, and the cognitive processes which underpin entrepreneurial intent on the part of academics, were also described in detail. This discussion has therefore provided a number of contributions to important debates within the university based entrepreneurship literature, including the socialisation of assumptions relating to the feasibility of entrepreneurial behaviour, the nature of opportunity recognition, evaluation, and exploitation, the nature of entrepreneurial motivation, and manner in which perceptions of entrepreneurial support structures are formed.

Having discussed the relevance of the study’s findings to the extant literature in chapters seven and eight, the study will now be concluded in chapter nine.
CHAPTER NINE: CONCLUSION

9.1 Introduction

This chapter will conclude the study. An overview of the structure and objectives of the thesis will be presented, outlining both the underlying rationale for the research agenda and the guiding research questions which emerged from a review of the literature. The gaps in contemporary understanding of the cognitive underpinnings of entrepreneurial intent in the university will be briefly outlined, before the principal findings arising from this research are presented. The contribution to knowledge made by this study will then be summarised, and a statement of its empirical contribution provided. Furthermore, the implications for practice, policy, and theory arising from the findings of this study will be discussed, before directions for future research are suggested to conclude the study.

9.2 Research Objectives

This study explored the manner in which micro-institutional dynamics shaped the antecedents of entrepreneurial intent and conditioned entrepreneurial propensity in the university context. To this end, the study employed a neo-institutional lens of analysis, focusing on the relationship between institutional logic embedded in organising principles, role identities, and means-ends assumptions and the cognitive underpinnings of entrepreneurial intent. The study was motivated by a number of theoretical and empirical gaps identified in a review of the university based entrepreneurship literature.

9.2.1 Overarching Perspective

The primary aim of this study was to explore how micro-institutional dynamics shape the entrepreneurial propensity of academics in the university context. In pursuing this research objective, the study sought to expand understanding of the micro-foundations
of the entrepreneurial university. The study proposed that this would provide a theoretical framework which better explains how the proliferation of entrepreneurial behaviour is enabled and constrained by cultural-cognitive factors in the university context. Such a framework would address the limited understanding of how an entrepreneurial orientation is institutionalised in the university context, and how entrepreneurial activity comes to be viewed as more legitimate and desirable for academic actors. As well as seeking to contribute to a number of key debates within the university based entrepreneurship literature, the study also sought to address calls within both the neo-institutional and entrepreneurship literatures for studies which synthesise key issues from both fields. In particular, the study sought to provide answers to the key question of how institutional structures constrain or enable entrepreneurial cognition and action.

9.2.2 Personal Attitude and Institutionally Embedded Role Frames

Having argued the suitability and promise of the study’s overarching framework, conceptual overlaps within the neo-institutional, entrepreneurial intentions, and university based entrepreneurship literatures were then presented. Role identities were recognised as particularly significant. Roles are a primary mechanism through which the cultural-cognitive effect of institutions is manifested, as they shape behavioural boundaries for individuals and frame the meaning and legitimacy of that behaviour. As such, locally embedded role frames have consequences for the values, interactions, and practices of individual actors (Thornton and Ocasio 2008). A review of the literature revealed that very little is currently understood about the cognitive underpinnings of the role modification which takes place when academics engage in entrepreneurial behaviour. The development of a richer and more grounded understanding of the micro-cognitive processes which underpin the phenomenon of entrepreneurial behaviour in the academy is therefore an important objective within the field (Jain et al. 2009). By exploring the manner in which role frame dynamics shape personal attitudes towards the entrepreneurial act, therefore, the study sought to address this gap in the literature and inform a number of key debates within the field.
9.2.3 Social Norms and the Local Dynamics of Legitimation

The second antecedent of perceived desirability is social norms. The review of the literature revealed this to be another significant point of conceptual overlap between the neo-institutional and university based entrepreneurship literatures, as both fields identified social sanctions and rewards as significant to the proliferation of entrepreneurial behaviours. A significant gap in the university based entrepreneurship literature is an empirically grounded understanding of how micro-social processes shape individual attitudes towards novel behavioural modes such as commercially entrepreneurial acts in an academic context (Bercovitz and Feldman 2008). This is a significant shortcoming, as it is through these micro-processes that the legitimacy of both behaviour and social function is first established, then internalised and reinforced by social actors (Greenwood et al. 2008). A key research objective of this study, therefore, was to contribute to understanding of the micro-processes through which the local dynamics of legitimation shape attitudes towards entrepreneurship in an academic context. By exploring the manner in which salient others at the micro-level in the university frame the perceived desirability of entrepreneurship, as either a means or an end, the study sought to enhance understanding of the micro-dynamics which underpin the emergence of an entrepreneurial orientation in the university context.

9.2.4 Self-Efficacy and Perceived Control

Perceived desirability is just one aspect of behavioural intentionality. Engagement with a given mode of behaviour is also subject to its perceived feasibility. For this reason, perceived behavioural control and self-efficacy is a critical antecedent of the entrepreneurial act. Expectations of mastery and control are similarly recognised as critical within neo-institutional perspectives of the micro-cognitive processes of change. The extent to which individuals come to regard given scenarios as opportunities within which they can advance self-interest with a strong degree of control in large part dictates the degree to which individuals will engage in non-isomorphic (entrepreneurial) or isomorphic (non-entrepreneurial) behaviours. As Goethner et al. (2012) argue, advancing understanding of how this antecedent is shaped
is key to understanding how academics come to interpret the many challenges of commercial entrepreneurship, and as Glassman et al. (2003) suggest, merely describing the characteristics of entrepreneurial academics is not sufficient to this end. Rather it is necessary to explain how self-efficacy perceptions are formed. This study proposed that by exploring the manner in which embedded assumptions in the local institutional logic were significant to this end, a significant contribution could be made to understanding of how such attitudes are socially reinforced.

9.2.5 Collective-Efficacy and Institutional Trust

The final research objective of this study was to explore how institutional trust dynamics influence collective-efficacy perceptions. Trust, as an essential element of human cooperation, itself proliferates in an institutional context in accordance with shared organising principles that provide individuals with goals, values, and beliefs upon which cooperation may be based. These principles are one of the primary dimensions of the logic that organises institutional life in a given domain. This is problematic in the context of the inter-institutional interaction anticipated in the triple-helix framework, however, as the implied overlap between the helices (or domains) requires the emergence of novel principles of organisation upon which trust may be predicated. A review of the literature revealed that understanding of how the university’s ‘social fabric’ enabled or constrained the emergence of this trust was limited (Levin and Cross 2004). This study proposed that micro-level trust dynamics may be significant to our understanding of entrepreneurial intentionality in the university context, as collective-efficacy perceptions might be sensitive to embedded assumptions and expectations about actors whose support was required for entrepreneurial engagement.

In answering these issues, the study sought to address its overarching research objective, and further proposed to contribute to a number of key debates within the university based entrepreneurship literature. Having identified these gaps, an overarching research question was devised, with four supplementary questions being
formulated in order to guide the research agenda. These questions are presented in table 9.1.

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<th>Table 9.1: Recap of Research Questions</th>
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<td><strong>Primary Research Question</strong></td>
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<td><strong>Research Question 1</strong></td>
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<td><strong>Research Question 3</strong></td>
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<td><strong>Research Question 4</strong></td>
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Having summarised the research objectives of the study and the attendant research questions, the next section will provide a brief description of the study’s key findings.

**9.3 Key Findings of the Research**

Having identified significant gaps in the extant literature, and having constructed a research framework for the exploration of micro-institutional dynamics as they shape entrepreneurial intent in the university, an empirical study was conducted which was guided by the outlined research questions. This section will present a summary of the key findings which emerged from the analysis of the data.
9.3.1 Primary Research Question - Micro-Institutional Dynamics and the Antecedents of Entrepreneurial Intent

In pursuing its overarching objective, this study identified, analysed, and situated a number of mechanisms which shape the perceived desirability and feasibility of entrepreneurial behaviour at the micro-level in the university context. The study has therefore provided a framework of findings that shows the emergence and proliferation of an entrepreneurial orientation in the university to be underpinned by micro-cognitive processes of institutional persistence and change, through which the antecedents of entrepreneurial intent are conditioned. In this respect the study has also advanced a neo-institutional theory of action in the university based entrepreneurship literature, a perspective which affords appropriate emphasis to both individual agency and the idiosyncratic dynamics of local institutional arrangements in its conceptualisation of entrepreneurial behaviour in this context.

Analysis of the findings illustrated the manner in which locally embedded institutional logic provided role identities, means-ends assumptions, and guiding principles for academic behaviour through which the perceived desirability and feasibility of entrepreneurial behaviour was shaped. They suggest that micro-institutional dynamics are of great significance in the emergence, or non-emergence, of an entrepreneurial university, as the transformation of the “inner logic” (Etzkowitz 2003, p.109) of the institution is subject to the “gritty, messy details of each university’s complex reality” (Clark 2001, p.12).

9.3.2 Research Question 1 - Role Frames and Personal Attitude

Research question one asked “How does the locally embedded institutional role frame in the university context shape the personal attitude of academics towards the desirability of entrepreneurial behaviour?” The study produced a number of interesting conclusions in response to this question. Firstly, the findings demonstrated that role identities as they are embedded in the local institutional logic interact with personal
attitudes towards entrepreneurship in a number of ways, revealing the significance of role frame considerations in the proliferation of entrepreneurial intent in the academic context. The findings showed that the embeddedness of an entrepreneurial orientation in the micro-level of action was reflected in perceived functional and representational tensions or contradictions on the part of individual academics. However, they also revealed that congruence between the prevailing and entrepreneurial role frames emerged as entrepreneurship was framed as a means of resolving prevailing role anxieties, and consequently reconciling contradictions in the prevailing institutional logic.

The study therefore showed that role tensions, anxieties, and contradictions represent overlaps in institutional logic in the academic domain, and in so doing they provide individual academics with material for the legitimisation of new practices in their social context. This suggests that the micro-foundations of the institutional transformation envisioned within triple-helix perspectives are partially constituted by academics’ interpretation of the logic of entrepreneurial behaviour as a plausible means of addressing prevailing functional and representational role concerns. Congruence between traditional and entrepreneurial orientation emerge as the logic of one point seems to address the role concerns of another. The appropriateness of entrepreneurship for academic actors emerged from the extent to which the role was conceived of in such a way that allowed actors “to link the frame with other things they know, experience, or believe” (Coburn 2006, p.347), highlighting the significance of frame alignment and mobilising resonance in the context of an emerging entrepreneurial university if congruence between the dominant and entrepreneurial role frames is to emerge. By demonstrating the significance of these situated role frames as a moderator of perceived desirability, the study enhances understanding of the socio-cultural contextual factors which constrain and facilitate framing processes, and as such provides insight into the generation, elaboration, and diffusion of role frames which lies at the very core of entrepreneurship in the academy.
9.3.3 Research Question 2 - Social Norms and the Local Dynamics of Legitimation

Research question two asked “How do local legitimacy dynamics influence social norms as they relate to the perceived desirability of entrepreneurial behaviour in the university context?” In response to this question, the study illustrated the manner in which the behavioural and attitudinal orientation of salient others was significant in framing the functional and representational legitimacy of entrepreneurial behaviour. The locally embedded institutional logic therefore shaped the desirability of entrepreneurship not only through role frames, but also through the social influence of salient others such as role models, peers, and figures possessed with formal authority. Role models were shown to be significant to the framing of means-ends assumptions with respect to entrepreneurship and reconciling representational concerns, peer attitudes were influential in signalling the degree to which entrepreneurship was a prestige bearing activity, and formal authority figures played an important role in the formation of perceived role expectations, as well as both formal and informal evaluative role pressures as academics interpreted them.

With respect to the impact of role models, the study highlights the reciprocal relationship between individual agency and cultural-cognitive structures at the micro-level by describing the influence of high status figures on the perceived functional and representational legitimacy of the academic role in the university context. Assumptions of representational propriety in the context of the academic role were expressed in terms of demonstrable functional utility, which in turn facilitated greater cognitive embeddedness and taken-for-grantedness of entrepreneurship in the prevailing institutional logic. Moral legitimacy is evaluative in nature (Suchman 1995), and as evidence mounts of the pragmatic legitimacy of entrepreneurship as a means to morally legitimate ends, moral objections appear less significant and representational role concerns less relevant. In addition, these findings suggest that individuals in possession of significant academic field capital, “comprising symbolic value and distinction through peer recognition in the field of university research” (Bjerregaard 2010, p.102), play a significant role in the local dynamics of legitimation and represent an important dimension of the socialisation of entrepreneurial desirability.
Analysis of the findings from research question two also indicate that the underlying motivational factors which drive entrepreneurship in an academic environment are themselves shaped by the local dynamics of legitimation. The expected viability and legitimacy of entrepreneurship as a means of accumulating academic capital and thus satisfying underlying esteem needs was shaped by the behavioural and attitudinal orientation of salient others. The study therefore suggests that the motivational force of entrepreneurship is to some extent dependent upon the degree to which it has been framed as a legitimate means of achieving pro-social ends within the embedded institutional logic, which itself describes the manner in which academic capital may be attained.

Finally, the study demonstrated the importance of formal authority figures in the socialisation of entrepreneurial norms (Bercovitz and Feldman 2008). Occupation of higher positions in the organisational hierarchy invests significant power in actors with respect to their capacity for the cultivation of divergent institutional behaviours (Battilana 2006). The findings therefore suggest that the institutional transformation envisioned within triple-helix perspectives of the entrepreneurial university (Etzkowitz et al. 2000) is significantly affected by the attendance of authority figures to entrepreneurially congruent values. This was manifested in the findings in the form of role expectations and evaluative role pressures as they were interpreted by academics, reflecting Kraatz and Moore’s (2002) contention that it is perhaps essential to attend to the such individuals in attempting to understand institutional change.

9.3.4 Research Question 3 - Self-Efficacy and Perceived Control

Research question three asked “How are control and self-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional logic at the micro-level in the university context?” Analysis of the empirical data as it pertained to this question revealed that the self-efficacy perceptions of individual academics were influenced by a number of mechanisms which operated in conjunction with a dominant institutional logic in the micro-level context, reinforcing individual level attitudes towards the
performance of given behaviours. The study highlighted three key mechanisms through which this effect was manifested; these were vicarious experience, verbal persuasion, and perceptions of interpersonal control.

The study demonstrated that vicarious experience is a significant factor in the socialisation of means-ends assumptions with respect to the feasibility of entrepreneurial initiatives in an academic context, with the social proximity of the individual academic to successes in entrepreneurial scenarios experienced by socially comparable individuals being an important factor. The findings showed vicarious experience to be significant to the internalisation of efficacy enhancing or diminishing assumptions, to the framing of the feasibility of balancing the entrepreneurial and academic roles, and to the extent to which entrepreneurial individuals were stereotyped or rendered more identifiable. Similarly, verbal cues from socially proximate actors were also a significant factor in reinforcing academic attitudes towards the feasibility of entrepreneurship in both cases. This illustrated in the domain of university based entrepreneurship Levine et al.’s (1993) contention that verbal interactions are a key element of the interface between cognition and motivation to pursue a given mode of behaviour, shaping the perceived feasibility of a behaviour though the shared assumptions of peers or otherwise influential others. The study also concluded that the perceived availability of entrepreneurial support structures shaped interpersonal control perceptions, given the ambiguity and uncertainty of engagement with non-academic actors. Embedded assumptions with respect to the perceived availability of access to entrepreneurial support mechanisms were therefore significant in shaping self-efficacy perceptions with respect to entrepreneurial scenarios.

9.3.5 Research Question 4 - Collective-Efficacy and Institutional Trust

Research question four asked “How are control and collective-efficacy perceptions as they relate to entrepreneurial behaviour shaped by institutional trust dynamics at the micro-level in the university context?” The findings generated in pursuing this question build on Townley’s (2002) contention that understanding of the micro-foundations of
institutional persistence and change requires an understanding of the emergence and contestation of new organising principles and institutional logics. The study revealed institutional trust to be an instrumental factor in the shaping of academic’s collective-efficacy perceptions, and as such suggests that the institutionalisation of competence based and relational trust is fundamental to the emergence of entrepreneurial universities. The study showed that trust emerged beyond the scope of individual interactions and was the product of more complex social dynamics, and that it also appeared to be a product of embedded social structures and processes, existing between individuals and other organisational elements as well as existing between individual actors.

With respect to the competence based dimension of trustworthiness, the perceived adherence of entrepreneurial support agents such as TTO professionals to exchange trust norms was of much importance, with the norms of order and performance track record being particularly significant. The findings demonstrate the significance of institutionally embedded assumptions in this respect, as perceptions of orderliness and performance track record were as much a product of the social embeddedness of entrepreneurial agents as they were of objective reality, with these assumptions often being held in the absence of personal experience that would support them.

With respect to relational trust, the study demonstrated that the social embeddedness of the TTO in the local context was reflected in assumptions about the TTO’s own interests, and the extent to which they were beholden to and acting in the interests of parties other than the academics themselves. Relational trust was also shown to be affected by expectations that TTO actors would share the preferences and priorities of the interviewed academics themselves. These findings suggest that that redundancy of TTOs and the local level informal knowledge transfer is to some extent a product of the institutional embeddedness of the TTO and the sense of mutual interdependence or social bond it has established with the local academic community. The findings of this study therefore indicate that the cognitive infrastructure which underpins entrepreneurial orientation in the university is partially constituted by a social bond between academics and agents of entrepreneurial support, wherein a strong sense of
interdependence and mutual interest prevails. This issue was similarly manifested in academic perceptions of the substantiveness of the university’s commitment to the entrepreneurial mission, as this reflected embedded assumptions about the institutional value and significance of entrepreneurial behaviour, with significant consequences for the mobilisation of effort to that end.

9.4 Research Contributions

Having described the key conclusions of the study as they relate to each of the research questions in the previous section, the contributions made by this study to the extant literature will now be described.

9.4.1 Contribution to Theory

The primary contribution of this study is a theoretical framework which explains how micro-institutional dynamics shape entrepreneurial intent in the university context. An overview of this framework is provided in figure 9.1. The study therefore contributes a conceptual and empirically grounded model of the qualitative relationship between the university as a cultural-cognitive context for action and the cognitive antecedents which underpin the entrepreneurial intent of academics. In this sense the study has explored and identified a range of mechanisms which shape the perceived desirability and feasibility of entrepreneurship as a behavioural mode. As such, this study provides a framework which addresses the limited understanding within the literature of the cultural-cognitive foundations of the entrepreneurial university itself. Advancing understanding of how entrepreneurial and academic logic converge in this context, and the nature and the various sources of emergent tensions between the two, is a key objective within the university based entrepreneurship literature (Bjerregaard 2010, Philpott et al. 2011). This study addresses that shortcoming and provides a framework for better understanding the divergent rates of engagement with entrepreneurship observed across the university population, the underlying sources of tension between the entrepreneurial and academic mandates, and the micro-processes through which

**Figure 9.1: Micro-Institutional Dynamics and Entrepreneurial Intentions**

With respect to the latter, the study contributes to the ongoing debate on the nature of the re-conceptualisation of the academic role on the part of the individual actors in the university (Jain et al. 2009, Lam 2010, Lam 2011). The study found this re-conceptualisation to be facilitated and legitimated by the framing of entrepreneurial behaviour as a means of addressing prevailing functional and representational role concerns as they are recognised by academic role incumbents. The study therefore demonstrates that the alignment of the entrepreneurial role with resonant local anxieties may be an important element of the proliferation of its wider legitimacy. In this respect the study extends understanding of the perceptual underpinnings of assessments of the costs and benefits of entrepreneurship on the part of academics, and as such contributes to “a broader and psychologically richer” theorisation of this issue (Lam 2011, p.1355).
By employing a neo-institutional analysis to this end, and illustrating the qualitative relationship between cultural-cognitive mechanisms and the cognitive antecedents of intentions, the study advances recent efforts to bridge the structural and individual levels of analysis in this area, as such addressing a key shortcoming in previous studies (Glenna et al. 2011).

The study also contributes to theoretical perspectives on the challenges of top-down or planned approaches to cultivating entrepreneurship in the university. This issue has been the focus of a number of previous studies within the literature which have highlighted the contrast between ‘bottom-up’ patterns of entrepreneurial university emergence and the relatively problematic experiences of the planned approach which is typical in the European context (Goldfarb and Henrekson 2003, Braunerhjelm 2007, Philpott et al. 2011). The study provides a number of contributions to current understanding of this problem. It highlights the significance of the perceived impetus and underlying rationale for such policy and the attitudinal contrast when this rationale is interpreted as either reconstructive or elaborative with respect to the academic role. This brought to light the importance of the perceived functional and representational alignment of entrepreneurial behaviour with prevailing interpretations of academic role content and the consequences this has for the desirability of entrepreneurship. In this respect the findings of the study extend Sanders and Miller’s (2010) finding that the reframing of entrepreneurship as a means to traditional academic ends is a point of central concern within the broader literature on academic entrepreneurship as a phenomenon, by demonstrating the impact that such alignment has on the antecedents of entrepreneurial intent.

A further contribution to this area of the literature is the study’s response to Krucken’s (2003) suggestion that university’s normative and structural adaptation to the entrepreneurial mission may reflect a largely superficial adaptation to the third mission in a university context, and similarly Lam’s (2010, p.310) assertion that it is “possible for an institution seeming to change at the formal policy level without concomitant changes in cultural norms at the organisational or individual levels.” The findings of the study resonate strongly with these propositions, and go further in identifying causal
mechanisms that reveal the manifestation of this effect in entrepreneurial intentionality. By highlighting the manner in which academics consciously engage in false representations of congruence (or facades of conformity, Hewlin 2003) with the entrepreneurial value as a means of managing the dissonance of apparent contradictions, the study extends findings from Brint (2005) and Mosey et al. (2012) that minimal engagement with entrepreneurship is a consequence of insubstantial shifts in the underlying value structures which govern the behavioural norms of academic actors. This study showed that evaluative role pressures as they are construed from the behavioural and attitudinal orientation of local leaders are an important mechanism in the signalling of the substantiveness of the university’s commitment to the third mission, and as such were an important effect of localised social norms on the perceived desirability of entrepreneurship.

Furthermore, the study contributes to understanding of the effects of this superficiality by highlighting a number of mechanisms through which trust complicates the emergence of entrepreneurial intentionality. The perceived superficiality of commitment to the entrepreneurial mission had consequences for academic attitudes towards the feasibility of entrepreneurship due to the implications for integrity or relational based trust perceptions. Firstly, collective-efficacy perceptions were impacted by the extent to which the university’s formal administrative structures exhibited a substantive commitment to entrepreneurial behaviour. This supports McEvily et al.’s (2003, p.93) analysis that “from a mobilising perspective trust motivates actors to contribute, combine, and coordinate resources toward collective endeavours.” This collective dimension, they suggest, is partially dependent upon the relational trust established between concerned actors with respect to the endeavour at hand. This study revealed why this effort may or may not be mobilised in pursuit of the aims of the entrepreneurial mission by demonstrating how the peripheral or low value status of entrepreneurship within the value structures referred to by Brint (2005) and Mosey et al. (2012), diminishes entrepreneurial intentionality.

Additionally, the findings indicate that the effectiveness of the TTO as a structural adaptation to the third mission may be limited by the manner in which their weak
embeddedness in the local environment diminishes relational trust, and consequently suggests the proliferation of entrepreneurial orientation in a university context is somewhat dependent upon the development of the social bond between the academic community and entrepreneurial support structures like the TTO, as a sense of both shared purpose and mutual interdependence is required. The challenge this poses for top-down policy is that trust dependent activities such as disclosing of information, committing to partnerships, and suspending judgement may be shaped in part by academics’ identification of the TTO professionals, both collectively and individually, as sharing their preferences and priorities (McEvily 2003).

This suggests that the TTO strategy of presenting entrepreneurial activity in terms of its academic value as Sanders and Miller (2010) identify is an important aspect of developing this social bond and sense of mutual purpose. The findings indicate that the development of new organising principles upon which cooperation may be based demands such action on the TTOs part. This also extends previous findings which suggest that time since foundation may be an important factor in TTO effectiveness (Siegel et al. 2003, Chukumba and Jensen 2005, Powers and McDougall 2005) as the aforementioned social bond may only emerge as demonstrations of trustworthiness accumulate. Immature TTOs may suffer in this respect from their characterisation as an instrument of policy and as such as an actor bonded to political or managerial interests as opposed to academic ones.

The study makes a further contribution to the literature in this sense by furthering understanding of the qualitative nature the relationship between academics and TTO professionals (Jensen et al. 2003, Levin and Cross 2004, O’Shea et al. 2005), and in this manner shedding light on the underlying factors which shape the willingness of academics to engage with TTO professionals. By bringing to light a variety of both competence and trust-based factors which shape academic perceptions of the risk associated with an entrepreneurial venture, the findings add to current understanding of TTO redundancy and the basis of academic inclination towards the use of personal networks in pursuing entrepreneurial ventures (Mosey and Wright 2007, Markman et al. 2009, Aldridge and Audretsch 2010).
By demonstrating how competence-based and relational trust dynamics affect the collective-efficacy antecedent of entrepreneurial intent, this research contributes to a number of previous studies which call for a greater focus on the contextual factors which influence the antecedents of entrepreneurship in the university (Azoulay et al. 2007, Goethner et al. 2012, Obshonka et al. 2012). In particular, by attending to efficacy perceptions (both personal and collective) the study contributes to understanding of how “entrepreneurial attitudes and control beliefs…may actually affect intentions to engage in academic entrepreneurship” (Goethner et al. 2012, p.638). In this respect the study contributes to the literature by demonstrating a number of mechanisms through which the “social contagion” effect identified by Azoulay et al. (2007) is manifested. By illustrating the manner in which vicarious experiences, verbal cues, and perceptions of interpersonal control socialise and reinforce embedded means-ends assumptions with respect to the feasibility of entrepreneurial initiatives in an academic context, the study furthers understanding of the psychological antecedents of academics’ transition to entrepreneurship (Goethner et al. 2012).

In so doing this aspect of the study also adds to discussions offered by O’Shea et al. (2007), Morales-Gualdron et al. (2009), D’Este and Perkmann (2011), and Hayter (2011) on the motivations of academics when engaging in entrepreneurial behaviour by illustrating the role of micro-institutional mechanisms in the framing of the feasibility of such behaviour. This also adds further conceptual depth to understanding of opportunity recognition and evaluation in the academic context, and anchors this process within a neo-institutional theory of action wherein ‘bottom-up’ institutional change can be understood as being influenced by such control perceptions (Shane and Eckhardt 2003, Shane 2004, George et al. 2006, Glenna et al. 2011)

Another contribution to the theory made by the study therefore is its identification of the various mechanisms through which academic motivation to engage in entrepreneurship is shaped by the context for action. In addition to the above, the study contributes an analysis of motivation as factor which is subject to the alignment of the entrepreneurial role frame with prevailing interpretations of legitimate academic behaviour and values, as the extent of this alignment has consequences for the
mobilising resonance and thus the motivational force of the entrepreneurial mission. Secondly, the study shows egoistic motivation for engagement in entrepreneurial behaviour, a dimension of motivation identified as significant in previous studies (Lam 2011, Hayter 2011) to be somewhat dependent upon the degree to which it was framed as a legitimate means of achieving pro-social and prestige bearing ends within the embedded institutional logic.

To this end, the study showed high status figures such as role models to be influential in the framing of entrepreneurship as a legitimate means of attaining symbolic value and distinction. This extends findings from Owen-Smith and Powell (2001) and Stuart and Ding (2006) on the importance of role models by illustrating how functional legitimacy demonstrations by high status figures reconcile representational concerns, and as such facilitate the development of first pragmatic, then moral, and cognitive legitimacy for entrepreneurship in the academic context. As a consequence of their actions, entrepreneurship may come to be seen as viable means of achieving desirable ends. In this respect then, actors who possess significant prestige in the academic domain shape the perceived rules for the accumulation of academic capital in that context. In other words, they shape the underlying logic of the field’s organisation and act as not only academic, but also institutional, entrepreneurs.

Finally the study contributes to theory by providing a novel synthesis of neo-institutional and entrepreneurship perspectives in the context of the university based entrepreneurship literature. It provides a response to the neglected intersection of these two frameworks and in so doing it addresses gaps in understanding of how it is “that institutions shape both the identification of opportunities” and how individuals may try to exploit them (Tolbert et al. 2011, p.1340). By developing a framework which captures the dynamics of this relationship between institutions and entrepreneurship, the study addresses some of the most significant gaps in both the neo-institutional and entrepreneurship literatures. It demonstrates how institutional logics can better explain how context shapes the perception of opportunities (Thornton et al. 2012, Greenman 2013), it shows how locally embedded interpretive frames shape the meaning of entrepreneurial behaviour (Tracey 2012), it provides answers to how entrepreneurial
motivation is shaped by context (Carsrud and Brannback 2011), and it contextualises entrepreneurial intentionality by revealing how micro-level dynamics are related to their formation (Zahra and Wright 2011, Thornton et al. 2012). In so doing, the study asserts that the classical individualist interpretation of entrepreneurship is fundamentally inadequate, and strengthens the claim of Thornton et al. (2011) that neo-institutionalism offers an invaluable analytical perspective in the exploration of how context shapes entrepreneurship.

Such theoretical synthesis, Battilana et al. (2009) argue, provides a platform for scholarship which provides fresh insight into the emergence of entrepreneurial behaviour in unique contexts. The study bears out that claim in addressing calls from leading scholars in the field for research which contributes to the development of theory (Markman et al. 2008), and as such represents progress in the alignment of university based entrepreneurship with more mainstream theoretical perspectives (Clarysse et al. 2011, Guerrero and Urbano 2012). In answering such calls, this research has advanced its overarching objective of exploring the cultural and cognitive underpinnings of the institutional transformation entailed within triple-helix perspectives of the university in general, and the socio-cultural underpinnings of entrepreneurial activity in the university in particular.

9.4.2 Empirical Contribution

In its approach to empirical investigation of the research topic, this study has made a number of contributions. Firstly, the study responds to calls the university based entrepreneurship literature for greater numbers of comparative studies. Despite the significant potential for local factors to shape the entrepreneurial orientation of academic faculty, the field suffers from a paucity of comparative research which could deepen understanding of the relevant mechanisms (Kenney and Goe 2004). Jain et al. (2009) call for comparative research across differing contextual conditions and university settings which address the underlying factors in the process of role modification engaged in by academics as they undertake entrepreneurial initiatives.
Such research, they suggest, has the potential to significantly enrich understanding of the micro-foundations of the entrepreneurial university as a whole. This study addresses these calls by undertaking a comparative case study approach between two universities which serve as contrasting environments for entrepreneurial action.

**Secondly,** the study provides an original and in-depth comparison of both an archetypal entrepreneurial university and a university which is more representative of policy driven adaptation to the entrepreneurial mission, representing in this respect a broader class of European HEIs which have experienced a similar shift in institutional focus over the past 10-15 years. Capturing the nature of this difference is of much importance, as it highlights the underlying characteristics and dynamics of the differential adaptation of universities to the entrepreneurial paradigm. The study furthered understanding of how underlying divergence in cultural-cognitive attributes reflect the contrast in top-down and emergent approaches, and as such contributed an analysis of the key features of the cognitive infrastructure of entrepreneurial orientation in both cases.

**Thirdly,** and with respect to the understanding of entrepreneurship in institutional contexts, the study contributes what Battilana et al. (2009) describe as much needed “research in the field which explores the nature of entrepreneurship in specific social contexts within which actors are embedded.” In addition, the study responds to Suddaby’s (2010, p.17) contention that “if we take seriously the notion that institutions are powerful instruments of cognition, there must be some opportunity in conducting research on how institutional logics are understood and influence at the individual level of analysis.” In so doing the study provided an empirical investigation of the links between institutional change and the micro-cognitive processes which set this action in motion. The research design chosen generated qualitative and comparative research which offered a fine-grained analysis of the dynamics of institutional change, and as such provided a rare example of a multi-case empirical study in this theoretical context. In this respect, the study also responded to calls within the literature for “entrepreneurship generally and entrepreneurial cognition particularly (to) begin to
embrace higher volumes of higher calibre qualitative research”, providing some redress to paucity of qualitative studies in that theoretical domain (Hindle 2004, p.577).

Finally, and fourthly, the study provides a comparison of universities in two different national contexts, and accordingly a comparison of two universities within distinct national cultures. While the focus of the study was centred on the local cultural-cognitive context and the dynamic relationship between entrepreneurial intentionality and contextual structures, the study nevertheless describes experiences with the third mission in two distinct national settings. As such, differences along key cultural dimensions, in particular uncertainty avoidance, must be considered in any reading of the study’s findings. However, and given the nature of entrepreneurial attitudes in the two universities studied, the research findings provide some evidence that local configurations of institutional logic and the attendant meaning afforded to entrepreneurial action may play an important role in moderating the constraints of national culture.

9.4.3 Contribution to Policy and Practice in the Domain of University Based Entrepreneurship

In developing a framework for understanding how micro-institutional dynamics shape the cognitive underpinnings of entrepreneurial orientation in a university context, this study has provided a number of insights to practitioners and policy makers in this domain. In particular the study highlights a range of significant challenges to top-down initiatives which aim to cultivate a supportive environment for entrepreneurial engagement. The study therefore strongly supports findings from Martinelli et al. (2008) and Philpott et al. (2011) that assumptions of an isomorphic institutionalisation of economic development as the university’s third mission as expressed by Etzkowitz et al. (2000) must be viewed with a degree of caution. The study extends these findings by highlighting a number of micro-level mechanisms which may easily be ignored to the detriment of policy efforts in this area. Four key considerations for policymakers are outlined below.
Firstly the study shows that academics in the Alpha case, which was representative of a top-down and interventionist approach to encouraging entrepreneurial engagement, framed entrepreneurial policy and the entrepreneurial mission in general as a further manifestation of external challenges to the social legitimacy of the academic role, particularly those posed by state and market forces. In this sense the entrepreneurial mission was seen as a further attempt at reconstruction of the underlying logic of the academic profession, and a contestation of its function and values. This highlights the importance of sensitive and locally grounded rhetorical strategies in the articulation of the university’s entrepreneurial mission, and strongly suggests that policy imitation is poor practice given the need for what Coburn (2006, p.359) describes as the “empirical credibility” of policy.

Secondly, this study suggests that for the entrepreneurial mission to resonate with the academic community, policymakers and knowledge transfer professionals would do well to think in terms of the logical congruence between the academic and entrepreneurial role frames, and appreciate that this congruence emerges as the logic of one point on the traditional and entrepreneurial paradigm seems to address the concerns of another. While Sanders and Miller (2010) argue that this practice will necessarily limit the extent to which academics accommodate the demands of commercialisation given the emphasis on academic ends, this study suggests that the legitimising effect of demonstrating the functional benefits of entrepreneurship is an essential element of its proliferation in an academic context and the resolution of significant costs to its perceived desirability. While Sanders and Miller’s (2010) contention should not be ignored, the findings from this research indicate that attention to such framing processes may be of much use to those tasked with the implementation of knowledge transfer policy, as skilful framing is an “important mechanism for generating individual motivation and channelling it” in desired directions” (Coburn 2006, p.375). These frames must and will evolve over time, but their starting point must always resonate with the beliefs and values of their target population if they are to be effective.

Furthermore, and thirdly, the study suggests that the accumulation of evidence of the functionally beneficial nature of entrepreneurship is an important step in reconciling
representationally oriented or morally based legitimacy concerns, and that entrepreneurial role models are critical in this respect. This research therefore supports Clarysse et al.’s (2011) proposition that university level policy which aims to engineer a supportive social context for entrepreneurship should give greater attention to attracting individuals with a strong entrepreneurial orientation, than it does to economic incentives. The findings of this study suggest that the process of self-comparison through which individual academic actors regulate their behaviour denotes local role models as influential figures in the formation of attitudes towards entrepreneurship. As academic actors seek to acquire prestige and distinction within their careers, psychological matching of cognitive and behavioural processes is engaged as the actors model themselves on figures who are themselves distinguished in this respect (Merton 1968, Bandura 1986). The perceived desirability of an entrepreneurial behavioural orientation in a given environment is therefore subject to the behavioural and attitudinal orientation of high status figures against whom other academics are likely to compare themselves. Consequently, exposing academics to entrepreneurial role models seems fundamental to the framing of entrepreneurship as a legitimate means of attaining prestige and distinction.

Finally, and fourthly, the study draws attention to a range of trust based issues which may frustrate TTO efforts to engage with the academic community. The research findings indicate that the boundary spanning nature of entrepreneurial behaviour gives salience to exchange trust factors such as the TTO’s demonstration of order and leadership as well as its performance track record. The study shows that academic perceptions of these factors have a significant influence on their willingness to engage with TTOs, complementing a number of similar findings in this respect which highlight the sensitivity of knowledge transfer to such concerns (Santoro and Gopalakrishnan 2000, Mora-Valentin et al. 2004, Bruneel et al. 2010, Garret-Jones et al. 2010, Plewa et al. 2013). The relational trustworthiness of the TTO was also a significant factor in this respect, which further emphasises the need for sustained and intense interaction between TTO professionals and the academic community if important barriers to entrepreneurial engagement are to be overcome. In particular the findings indicate that a short-term orientation to the satisfaction of metrics may be especially detrimental, as
this has important signalling effects as to where the TTO’s interests lay, and the extent to which these interests overlap with those of the academic community.

9.5 Directions for Future Research

The findings of this study may serve as a basis for future research and exploration of a number of issues. Although considerable progress has been made in the relatively brief history of research in the domain of university based entrepreneurship, many aspects of the phenomenon remain underexplored. This research points to a number of avenues which have much promise for theoretical development within the field.

Firstly, future research may look more closely at how the rhetorical strategies engaged in by pioneering academic entrepreneurs for the purposes of legitimacy management differ in accordance with more objectively identifiable indicators of the host university’s adaptation to the entrepreneurial mission such as time elapsed since TTO foundation, patenting activity, or quantity and performance of spin-offs. Suddaby and Greenwood (2005) identify a number of different rhetorical strategies through which language is used to shift logic in institutional contexts, and through which different frames are presented in the attempt to exploit prevailing institutional contradictions. These strategies include ontological theorisations which are based on premises of what may or may not co-exist, historical theorisations which appeals to history and tradition, teleological theorisations which appeal to grand visions or purpose, cosmological arguments which assert the inevitability of change, and value-based explanations which appeal to wider belief systems. By exploring the strategies which are most commonly employed and experienced in contexts which differ along dimensions of theoretical interest, such an exploration would add further insight into the transformation of the inner logic of the university and academia as it pertains to entrepreneurship, and the peculiar logical challenges that entrepreneurs must overcome in managing their legitimacy in various environments.
Such studies could also look at both senior and mid-level university management and how they use such strategies in framing the rationale and content of their behavioural and attitudinal orientation to the third mission. Mid-level leadership figures may be of particular interest, as the findings of this study suggest they are instrumental in the contextualisation of entrepreneurship as an institutional priority into the interdependent daily realities of academic work. As these figures are required to ‘knit together’ the competing demands of various stakeholders and in the process provide cues as to the role expectations and pressures to which academics should attend, their rhetorical approaches to either contesting or advancing the functional and representational complementarity of entrepreneurial action would be of much interest to the literature.

Another promising line of investigation is quantitative analysis of the relationship between TTO characteristics such as size, age, skills profile, and incentives structures correlate with both their perceived trustworthiness in both a relational and competence-based sense from the academic community’s perspective, and how this trustworthiness corresponds to the perceived feasibility of entrepreneurship in the same community. This would provide a useful opportunity to test and further refine some of the causal relationships identified in this study while contributing to current understanding of academic willingness to engage TTOs.

Finally, this study has identified a number of efficacy shaping mechanisms through which embedded assumptions with respect to the perceived feasibility of entrepreneurship were both socialised and reinforced. Future research could examine the socialisation of postgraduate students to these norms, tracking change over time, and in particular looking at the impact of factors such as entrepreneurial education programmes on moderating other contextual features. Research in this area could draw on mature theory in the professional development field and earlier work on this issue within the university based entrepreneurship literature (Stuart and Ding 2006) to develop understanding of these effects. Specifically, the implications of entrepreneurship education programmes for interpersonal control perceptions may be significant given both the findings of this study and Goethner et al.’s (2012) assertion that the extent of awareness of entrepreneurial supports has consequences for efficacy.
perceptions. This is just one example of how attention to the antecedents of entrepreneurial intentionality may prompt the development of more effective tools for cultivating an entrepreneurial orientation, and of how university administrators and policymakers may utilise insights from frameworks like that developed in this study to more effectively engineer a supportive environment for entrepreneurship.
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Appendix A: Correspondence to Interviewee Requesting Participation

Dear,

I am currently undertaking doctoral research on entrepreneurship in the university at the Centre for Innovation and Structural Change, in NUI Galway, which is funded under the Programme in Third Level Institutions Cycle 4.

My research looks specifically at academic entrepreneurship and engagement with industry from the perspective of academics and seeks to build on the work of doctoral supervisor’s research on entrepreneurship and knowledge transfer in the university, Dr. James Cunningham, Director, Centre for Innovation and Structural Change. My research looks to explore academic perspectives on these issues, and to acquire an understanding of how they and policies which relate to them are viewed by academic researchers so that policy, theory, and practice in this area may be improved by their insights.

I would like to speak with people in your field as I feel there is an interesting perspective to be found on these important issues. I would welcome the opportunity to speak with you as part of this research project and to hear your views on some of the key issues in this area. Your contribution will be treated in the strictest confidence and no personally identifiable information will be made available to any third party. The findings from the study will also be made available to all participants.

Should you have any further questions on this project, please do not hesitate to contact me directly on 086-3686XXX or by email at d.organ1@nuigalway.ie. Alternatively, you can contact Dr. James Cunningham.

At your convenience, can you let me know if you are interested in participating in my research project and we can arrange a meeting. Looking forward to hearing from you and many thanks in advance.

Your Sincerely,

Damien Organ
Appendix B: Semi-Structured Interview Schedule

1st Theme - Role Frame and Personal Attitude
Can you tell me about your path to academia?
How and why did you come to work in this role?
What do you think is the purpose of the academic role?
What is the purpose of the university in your opinion?
What is your understanding of entrepreneurship? How does it fit with that role?
What do you think of academics engaging in entrepreneurship?
Why do you think it is happening?
What are the positives of this happening?
What are the negatives?

2nd Theme - Social Norms and Salient Others
Can you tell me about entrepreneurial activity here? Is it something you’re aware of?
Can you tell me about any notable entrepreneurial people that are here?
Are there senior people here who have a history of entrepreneurship?
Do you think you can be entrepreneurial and still have academic success? Why, or Why Not?
What do your colleagues think of entrepreneurship?
In your opinion, is entrepreneurship a priority for management here?
How does entrepreneurship fit with the pressures of your work here?
How does entrepreneurship fit with more formal assessment of performance?

3rd Theme - Self-Efficacy Perceptions and Micro-Level Mechanisms
What do you think are the challenges of entrepreneurship as an academic? How do you think you would handle those challenges?
How possible is to overcome those challenges in your opinion? What makes you feel that way about it?

Have you talked to people here about ideas of your own?

Have you talked to colleagues about this? What are their attitudes towards it?

4th Theme - Collective-Efficacy Perceptions and Institutional Trust

Are you aware of the support structures that the university has for entrepreneurship?

What are your thoughts on them? How useful are they in your experience?

Have you had any experiences with the TTO?

What sort of reputation do they have?

Do you think you could get the support you would need here?

Do you think the university would support you?
## Appendix C: Research Question One - Coding Framework

<table>
<thead>
<tr>
<th>Role Frame And Personal Attitude</th>
<th>2nd Coding - Emerg. Cat.</th>
<th>3rd Coding - Sub Cat.</th>
<th>4th Coding - Sub Cat.</th>
<th>5th Coding - Sub Cat.</th>
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<td>Master Themes - 1st Coding</td>
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## Appendix D: Research Question Two - Coding Framework

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<th>4th Coding - Sub Categories</th>
<th>5th Coding - Sub Cat.</th>
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<td>Entrepreneur. Role Models/High Status Entrepreneurs</td>
<td>Identifiability of Entrepreneurial Success</td>
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## Appendix E: Research Question Three - Coding Framework

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## Appendix F: Research Question Four - Coding Framework

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