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**Between Logic and Rhetoric:  
Toulmin's Theory of Argumentation**

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*For Connie.*

*Without her encouragement and assistance this work could not have been done.*

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## Abstract

In *The Uses of Argument* (1958), Stephen E. Toulmin produced a model, analogous to procedures in jurisprudence, for the layout of arguments. He was seeking to provide a method of accommodating arguments in a wide range of situations, which he believed could not be encompassed by formal deductive logic.

This study, *Between Logic and Rhetoric: Toulmin's Theory of Argumentation*, claims that, in spite of the initial hostile reaction from logicians, the model gained acceptance, especially in North America, as a valuable contribution to informal logic and argumentation theory. The study claims, further, that the Toulmin model remains centrally important to that discipline, not just as an historical landmark, but as a useful template for the construction, analysis and evaluation of arguments concerning matters of fact in areas such as ethics, aesthetics, communication studies, cognitive science and artificial intelligence, as well as those leading to decisions in matters of policy.

The study proceeds by showing the rationale for Toulmin's rejection of the then current hegemony of formal deductive logic and providing a justification for the six-element argument structure he introduces. It responds to the criticisms of those who rejected it, and identifies the aspects which commended the model to those who adopted it.

The origins of the Toulmin model are related to the tradition of rhetoric extending from Aristotle, and Toulmin's debts to his predecessors and contemporaries are acknowledged. In response to Toulmin's suggestion that the layout of argument in *The Uses of Argument* (1958) might be capable of further development, the study examines some possible modifications which could render the model more efficacious without doing violence to the original inspiration. In addition, it deals with the suggestion that the Toulmin model is limited to matters of fact, by illustrating its *use* in decision-making, and it shows that the system can accommodate a wide range of argument modes, e.g. dialectical or persuasive. The study maintains that the versatility of the Toulmin model is related to the fact that the organisation of the six elements of a fully-fledged argument represent an organic

development and reflect the natural progress of human verbal interaction in the justification of a claim, or, subsequently, from adequate and relevant support to a conclusion with the appropriate modal qualification.

Finally, since democratic societies depend on genuine debate on contingent affairs, or “things which may be otherwise” (Aristotle), which are not amenable to demonstration by formal proofs, the Toulmin model of argumentation is particularly suited for democratic education in communicative action.

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## **Introduction**

Stephen Toulmin identifies modernity with the events taking place in Europe during the period from c.1650 to the middle of the twentieth century. In retrospect, this period has been characterised by a confidence in the power of both science and philosophy to yield increasing degrees of certainty about all reality: in the fullness of time the world would succumb to rational explanation and control. The putative methods of science, i.e. hypothesis, experiment and verification/falsification, would be applied to all aspects of life and, for the logical positivist, those aspects of experience which did not fit within the pattern would be consigned to the realm of “non-sense”. Toulmin cites John Dewey’s *Quest for Certainty* (1929) as a wake-up call from this dream, and much of Toulmin’s own work is predicated on the conviction that the early confidence in what might at a later time be referred to as a “brave new world” was illusory.

During the twentieth century, the metaphorical use of “seismic” to describe major social and/or political upheavals, gained currency as arrangements that seemed stable collapsed, and new arrangements, more or less stable, came into being. The virtual end of colonialism and the shifting of power blocs have meant that a global view must encompass not merely a reasonably homogenous, developed, liberal and democratic Western society, but also new alliances and power centres demanding and insisting on fair shares and opportunities for development in accordance with their own vision. In spite of the military conflicts, of which there has been no cessation during the course of the twentieth century, there have been continuous parallel efforts to achieve co-existence, but with an increasing recognition that contingency, rather than certainty, is the dominant feature of the political, as well as the natural, landscape.

In the twenty-first century, an even more widespread appreciation of “seismic” change has been afforded by increased understanding of the movement of tectonic plates and the consequent movement of earth, water and potentially lethal radiation, as well as the degradation caused by global warming. Such matters, once the exclusive domain of experts and, sometimes, dogmatists, are now subjects of

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common conversations among concerned citizens. Instability, rather than stability, is more and more becoming accepted as the default human condition. The earlier image of a society reflecting an orderly cosmos is no longer tenable; the inherent proneness of the cosmos itself to change is an everyday familiarity. The enhanced means of communication which have informed worldwide audiences of these trends have also served to render these same audiences more sceptical in their attitudes towards the previously dominant groups: governments, multinational corporations, religious dogmatists, and even accredited experts in the fields of finance or science, are subject to demands for explanation and *justification*, rather than mere pronouncement.

In this context, it is not surprising that interest in, and efforts to develop, techniques of critical discussion, should have shown significant growth. One such technique is Stephen Toulmin's theory of argumentation. The assumption that rational solutions to practical, social or political problems could be reached on the basis of traditional formal deductive instrumentation has effectively been sidelined. Since the middle of the twentieth century, in areas of disagreement, hope has increasingly been placed in the possibility of finding consensus, whatever the forum or issue, by the exchange of substantial arguments based on acceptable grounds that commend themselves to participants in dispute.

The objective of this study, *Between Logic and Rhetoric: Toulmin's Theory of Argumentation*, is to promote and support the case that the Toulmin style of argumentation, incarnated in the "Toulmin Model" and his analysis of the nature, function and efficient conduct of argumentation, contributed significantly to the evolving informal logic movement and remains relevant and serviceable in many areas where argumentation is of crucial importance to the present day. The re-issue of Stephen Toulmin's *The Uses of Argument* (1958) in 2003 was received by Frans van Eemeren, pre-eminent in the field of argumentation theory, in laudatory terms: "In spite of initial criticisms from logicians and fellow-philosophers *The Uses of Argument* has been an enduring source of inspiration and discussion to students of argumentation from all kinds of disciplinary background for more than fifty years."<sup>1</sup> This opinion would be supported by the publication of *Arguing on the Toulmin*

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*Model* (2006), a collection of the contributions from the 2005 conference in Ontario which celebrated the variety of uses to which Toulmin's model of argumentation, or modifications of it, might be put.<sup>2</sup>

The purpose of this study is to establish the extent to which van Eemeren's remarks are justified, both in respect of initial hostility to Toulmin's "new logic" and to illustrate how Toulmin's model of argumentation remains useful for the construction, analysis and evaluation of arguments at the present time. This will be done by identifying Toulmin's motivation for developing an alternative model of argumentation and considering initial objections to it, tracing his relative contribution to the growing movement in informal logic from the middle of the twentieth century, and providing examples of the Toulmin model at work in a variety of fora. There will also be some suggestions for modifying the model without doing it any violence, in response to Toulmin's recognition that the model might not be the finished article.

This analysis and evaluation of the Toulmin model of argumentation will be set against the background of Toulmin's attitude to Cartesian foundationalism regarding knowledge; a full appreciation of Toulmin's motivation emerges only from acquaintance with the range of his writings, from *The Place of Reason in Ethics* (1950) through *Introduction to Science* (1953) the iconic *The Uses of Reason* (1958), *The Abuse of Casuistry* (1988), *Cosmopolis* (1990), to *Return to Reason* (2001). Insights can also be gleaned from the many articles he authored, into his preference for "practical wisdom", arrived at through rationality and reasonableness, above the "quest for certainty" which he had come to consider futile in many areas of human argumentation. As he put it in *Return to Reason* (2001), there was a need to restore the balance to *reason* by recognising that "Pragmatism and skepticism are the beginning of a wisdom that is better than the dreams of the Rationalists."<sup>3</sup> The rationalists were those who, at different times, sought a unitary method of achieving truth and the development of a universal language that would obviate misunderstanding, and who aimed at certainty of knowledge that would enjoy that quality regardless of time or place. In *Introduction to Reasoning* (1979), a presentation for pedagogical purposes, by Toulmin et al., of the theory of

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argumentation introduced in *The Uses of Argument* (1958), Toulmin's attitude to reasoning and argumentation is expressed very clearly. By "reasoning" is understood the process of giving reasons in support of a claim so that the claim will be accepted and "[r]ather than aiming at some unattainable ideal of mathematical perfection we shall describe practical reasoning as it occurs in daily use, in the hope of understanding better its actual assumptions and potentialities."<sup>4</sup>

The principal motivation behind Toulmin's initiative in the matter of argumentation was his dissatisfaction with formal deductive logic as the paradigm of inference. Toulmin concentrated his criticism on the traditional syllogism; the development of mathematical/symbolic logics in the late nineteenth and early twentieth centuries succeeded, as far as he was concerned, in rendering formal deductive logic even more irrelevant to a wide range of human experiences. Formal deductive logic was inapplicable to the critical discussions that take place with regard to matters legal, political, aesthetic or, indeed, to the majority of every-day arguments that might not easily fit into a preconceived category. His response was a practical one, but it arose from a profound conviction that a mistaken understanding concerning reasoning had emerged during what we now regard as the post-Renaissance period. In *Return to Reason* (2001), Toulmin tells us that seventeenth-century natural scientists, by striving to unite the ideas of "rationality, necessity and certainty into a single mathematical package", had inflicted damage on "Human Reason" that has lasted during the succeeding centuries and "[t]he chief task of this book (i.e. *Return to Reason*) is to show what is needed if we are to treat that injury and re-establish the proper balance between Theory and Practice, Logic and Rhetoric, Rationality and Reasonableness."<sup>5</sup> This has been Toulmin's manifesto during the course of his professional career. The demand for rational certainty from the seventeenth century had sidelined the tolerant humanism, exemplified for Toulmin by the reflections of Montaigne, that preceded it. This approach encompassed the ability to live with ambiguity and to avoid dogma. The enthronement of deductive logic and the relegation of rhetoric resulted in the fact that *reasonableness* was subordinated to *rationality* and the detachment of theory from practice which would lead, eventually, to impersonal, de-contextualised,

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autonomous *logics* which would maximise internal cohesion but minimise usefulness in the conduct of human affairs.

Aristotle, already aware of the demands placed on inference/reasoning in different fora, had specifically distinguished forms of inference suited to different contexts; demanding mathematical certainty in cases made in public by an effective orator was unreasonable and futile. The *Prior Analytics* set out a formal system of logic, primarily intended for the analysis and organisation of scientific knowledge, which can be put into sentence forms such as “all A are (not) B” or “some A are (not) B”. This specialized, formal system would not be adequate for everyday communication where claims are made on the basis of well-established opinions (*endoxa*). Such situations include those which pertain to the essential transactions of personal, social and professional life. They typically refer to matters that are contingent, and in such circumstances conclusions are not, for the most part, logical entailments, i.e. not characterised by logical necessity. Further, in the *Topica*, Aristotle had laid down guidelines and rules for the proper conduct of academic debate. This was a formalised intellectual contest in which opponents, in the presence of an audience, under the direction of a supervisor, debated overarching, theoretical problems concerning, for example, the best form of government, the concepts of the eternity of the world, or the immortality of the soul.

This diversity of context, method, and of quality of inference and outcome, would eventually come to be dominated by the strictly logical, which would become the paradigm of rationality by comparison with which reasonableness would be denigrated. The re-humanisation of critical discourse would demand that forms of argument derived from the rhetorical, depending for their cogency on experience, trustworthiness and conviction, be reinstated. For Toulmin, the degradation of an essential method of advancing a case or point of view by reasonable means needed to be reversed. This he sought to achieve through the “Lay-out of Arguments” in *The Uses of Argument* (1958). Toulmin, of course, was not alone in expressing such dissatisfaction. M. Beardsley, in *Practical Logic* (1950), dealing with “Meaning and Context” (pp.31-38), shows that he is trying to accommodate the kind of reasoning and argument that is more typical of real-life exchanges than the formal arrangement

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represented by the syllogism.<sup>6</sup>

In “Act and Person in Argument” (1951), C. Perelman and L. Olbrechts-Tyteca claimed that

[i]n those cases in which the means of proof consist in rigorous demonstration they are studied by a well-known science: logic. But to the extent that it has developed into a purely formal science which determines the conditions of correct deduction, it appears that a great many of the proofs utilized in law, ethics, philosophy, political debate and daily life cannot be considered relevant to logic in the strict sense.<sup>7</sup>

Perelman maintains, in *The Realm of Rhetoric* (1977) – a summary version of *The New Rhetoric* – that, by failing to see the importance of Aristotle’s *Topics*, *The Rhetoric* and *Sophistical Refutations*, modern logicians have overlooked the fact that Aristotle is not only the father of formal logic, “but also the father of the theory of argumentation.”<sup>8</sup> According to Perelman, reasoning which has a “probable outcome” is not to be “evaluated by probability calculus.”<sup>9</sup> This “probable”, he says, frequently translated as “acceptable”, “has a qualitative aspect which brings it closer to the term *reasonable* than to the term *probable*” (emphasis added).<sup>10</sup> This focus on “reasonable” aligns Perelman and Toulmin in their quest for the revival of an argumentation that will do justice to issues that are not amenable to demonstrative presentation.

Perelman proceeds to highlight the “audience” as an essential feature of that argumentation. Aristotle distinguished between dialectic, which is concerned with arguments used in a controversy or discussion with an individual, and rhetoric, which is concerned with the orator’s technique in persuading a crowd. For Perelman, however, “[i]n contrast to ancient rhetoric the new rhetoric is concerned with discourse addressed to any sort of audience, a crowd in a public square or a gathering of specialists, a single being or all humanity.”<sup>11</sup> It even examines arguments addressed to oneself.<sup>12</sup> Effectively, therefore, Perelman dispenses with the distinction between dialectic and rhetoric. Both are instrumental in persuading

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somebody, or some group, of something, based on good opinion. In summary, according to Carroll C. Arnold (introducing *The Realm of Rhetoric*), Perelman “seeks to discover the basic methods that are used in contingent arguments addressed to audiences of any sort.”<sup>13</sup> Clearly, this is also a summary of what Toulmin set out to do as a sequel to his illustration of the limitations of formal deductive logic in the realm of argumentation.

C.L. Hamblin might have been echoing Toulmin when he remarked, in *Fallacies* (1970), that he is determined to “dethrone deduction from its supposed pre-eminent position as a provider of certainty.”<sup>14</sup> In the following years, others would expressly support that point of view. Howard Kahane, for example, in *Logic and Contemporary Rhetoric* (1971), was convinced that “the crucial steps in most arguments in daily life are not deductive” and that they rarely claim the certitude characteristic of valid deduction.<sup>15</sup> In a similar effort to distance himself from formal deductive logic as it had evolved, S.N. Thomas, in *Practical Reasoning in Natural Language* (1973), intends to provide a “single, general systematic method ... by which any argument ... can be cast into a standard form and evaluated without needing first to translate it into the symbolic notation of an artificial language.”<sup>16</sup> Michael Scriven, in *Reasoning* (1976), describes formal deductive logic as “an extremely precise and formal discipline, and not one that can be readily, if at all, applied to the analysis of everyday arguments.”<sup>17</sup>

Even in the next decade, the deficiencies of formal deductive logic were proclaimed. Doss Seale, in “Three steps towards a theory of Informal Logic”, provides what he considers good reasons to show “that the theory of formal logic is quite simply and quite fundamentally *wrong*” (original emphasis).<sup>18</sup> Those who advocate its use “do not write, or talk or think in conformity with its rigid notion of reasoning”.<sup>19</sup> This is not surprising, “for the formal patterns which the theory presupposes will not *fit* the way we actually reason”<sup>20</sup>

It is clear, therefore, that in identifying the limitations of formal deductive logic, Toulmin was representative of, and ahead of, his time. The challenge, however, was not just to point out the failings of one system, but, rather, to provide an alternative. Before that could happen (i.e. before there could be a unified theory

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or practice of argument), there would have to be consensus on the nature and/or purpose of argument. While there has been some overlap of definitions, there has also been disparity. Beardsley insists that “the essence of an argument is that it makes a claim upon belief and supports this claim with a reason or reasons”.<sup>21</sup> For Perelman and Olbrechts-Tyteca the object of the theory of argumentation is “the study of the discursive techniques allowing us to induce or increase the mind’s adherence to the theses presented to it for its assent”.<sup>22</sup> As Perelman and Olbrechts-Tyteca were intent on revitalising rhetoric, the centrality of audience and its persuasion is to be expected.

S.N. Thomas defines an argument succinctly as “any discourse in which some statement is given as a reason for some conclusion”,<sup>23</sup> while for Scriven an argument is meant to persuade, and its power depends on the ability of the premisses to “force” one to accept the conclusion.<sup>24</sup> For van Eemeren and the pragma-dialecticians, the purpose of argument is the resolution of a dispute. For Toulmin, a “sound argument”, which he equates with “a well-grounded or firmly backed claim”, “is one which will stand up to criticism, one for which a case can be presented coming up to the standard required if it is to deserve a favourable verdict”.<sup>25</sup> For him, the essence of a successful argument is the justification, by good reasons, of a claim that has been advanced. Reference to “the standard required” suggests that the standard may vary in accordance with the context of the argument, what he came to call the different “fields” of argument. This portmanteau description seems capable of encompassing the foregoing selection of definitions, and Toulmin was intent on providing for the broad range of arguments that might arise in the course of personal, social, professional or political life. The structure of argument which he devised can be shown to be capable of carrying such a wide variety of arguments.

Toulmin is intent on developing an argumentation in natural language that is free from unnecessary jargon. The model of argumentation presented in *The Uses of Argument* accomplishes this. Some have suggested that the system deals only with singular subjects and situations where there is not much at stake. The system can, however, be adapted to deal with complex arguments. Furthermore, the construction, analysis and evaluation of arguments in terms of the language actually used in the

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fields in question, altered the kind of material that would henceforth be presented in treatises and textbooks on logic, i.e. informal logic caused a paradigm shift from the *formal* to the *substantial*. In this dispensation, argument would not be evaluated abstractly on the basis of truth-tables or Venn diagrams. Rather, the arguer would have to find relevant and adequate support from areas of reality which had been taken seriously, to back up claims about that reality.

There was a significant timeliness about the arrival of the Toulmin model on the argumentation scene and the recognition of its usefulness in real-life arguments. The latter half of the twentieth century saw increasing demands for representative and participative democracy, where the advancing of convincing arguments and the identification of fallacious arguments would be crucial. For C. Perelman and L. Olbrechts-Tyteca, “[o]nly the existence of an argumentation that is neither compelling nor arbitrary can give meaning to human freedom, a state in which a reasonable choice can be exercised”.<sup>26</sup> Public communication, according to Kahane, is frequently distorted in favour of some agent or agency, and vigilance is required to “ensure the success of a democratic form of government”.<sup>27</sup> The identification of fallacious arguments in the political and commercial fields is what he has in mind. S.N. Thomas, sharing Toulmin’s preference for arguments in natural language, emphasises the importance of evaluation in the practical matter of deciding on a course of action. Toulmin had not dealt with this in *The Uses of Argument* (1958), but, with co-authors Rieke and Janik, he gives it due attention in *Introduction to Reasoning* (1979), where they deal with, among others, decisions to be made in medical practice and the exercise of business management.<sup>28</sup>

Formal deductive logic, as Toulmin saw it, had an inbuilt mechanism for the evaluation of arguments, in terms of validity and soundness. A departure from the formal to informal logic/argumentation would demand some compensation for this mechanism if arguments were to be regarded as “justified” or “acceptable”. The layout of the argument would have to contribute to its cogency; the use of language (natural) would have to be as precise as possible; reasons adduced would have to be relevant and proportionately weighty to the issue in question; and the arguer would have to judge the force with which a particular claim deserved to be advanced. The

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response to the challenge of precision of language by Arne Naess, for example, was to introduce the concept of “precization”, an effort to formulate arguments in natural language, with such clarity that no ambiguity would arise.<sup>29</sup> While Toulmin did not develop such a mechanism, he strove for clarity by painstaking and lucid analysis, and multiple examples he provided would certainly demand the use of transparent language: clarity of communication was a notable characteristic of all his work.

Coupled with attention to precision of language in the conduct of argument in natural language, has been the provision of protocols and rules for argumentation. R.J. Fogelin, in *Understanding Arguments* (1978/82), encourages the use of the “co-operative principle” between disputants (e.g. “do not lie”, “avoid obscurity”), and the pragma-dialecticians have formulated an elaborate set of conditions by which discussants must abide. Toulmin did not anticipate these specific developments, and he would not have been impressed by the latter: the complexity and comprehensiveness of the pragma-dialecticians’ conditions would make them inapplicable to the real-life arguments that Toulmin had in mind. In any case, since van Eemeren and the dialecticians see argumentation as essentially dialectical, their prescription would not encompass the rhetorical, which Toulmin’s model would.

The central concept of formal deductive logic is that of validity. To say that an argument is valid is to make the following claim: necessarily, if the argument’s premises are all true, then its conclusion must be true. An argument will be deemed to be sound if it is valid and its premises are true. The conclusion of a sound argument must be true.

The validity of an argument is dependent on its form and is independent of the truth of its premises. A valid argument could lead to an untrue conclusion and a true conclusion could be produced by an invalid argument. Some basic examples in traditional syllogistic form will illustrate the above:

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### (A) Valid and Sound:

All human beings are mortal.

All Chinese people are human beings.

Therefore, all Chinese people are mortal.

This argument is valid and the premises are true. The argument, therefore, is sound and leads to a true conclusion.

### (B) Valid but Unsound:

Winged creatures can fly.

Pigs are winged creatures.

Therefore, pigs can fly.

The form of this argument renders it valid but at least one of the premises is untrue, and therefore the argument is unsound. It does not lead to a true conclusion.

### (C) Invalid, leading to a true conclusion:

All American presidents live at the White House.

Barack Obama lives at the White House.

Therefore, Barack Obama is an American president.

This argument produces a true conclusion but the argument is invalid as the terms are not appropriately distributed in the premises. The term 'White House' is undistributed in both its occurrences. While the premises are true and the conclusion is true, the truth of the conclusion is not guaranteed by, and does not result from the form of the argument. The argument is therefore, invalid and, consequently, unsound.

In formal deductive logic, then, the argument form is dominant and is independent of time and place. In the informal dispensation, however, this does not apply: the *context* in which claims are made and justified becomes centrally important. Analysing the concept of "reality" in *Reason in Ethics* (1950), Toulmin had insisted that "when two people say, respectively, 'O is really X' and 'O is not really X', their remarks will not contradict each other unless they are both of the same logical type".<sup>30</sup> The point he is making is that the speakers may have different purposes for O and X in mind, and, "what 'these purposes' are can only be discovered from the *context*, and varies with the mode of argument employed".

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(emphasis added).<sup>31</sup> The centrality of context to argumentation would become pronounced in the informal logic movement. R. Crawshay-Williams, in *Methods and Criteria of Reasoning* (1957), shared with Toulmin an interest in the kind of statements that are made and disputed every day, and which are “neither mathematical nor so obviously factual that we settle them by direct appeal to experiment or (sometimes future) observation”.<sup>32</sup> For Crawshay-Williams, far from introducing relativity into the discourse, the demand for context is essential if statements are even to have significance. Statements without context will remain undetermined. To say, for example, that “A is B” will be truly meaningful only when extended to “A is B in the context (for the purpose) M”. From Crawshay-Williams’s vantage point “this way of speaking would have the advantage of eradicating relativism from my analysis”.<sup>33</sup> As argumentation would proceed in terms of substantial evidence, rather than formal systems, the concept of context and its determining influence would come to be taken for granted.

A further major transformation in argumentation that has followed from the displacement of formal deductive logic by informal logic has been the replacement of the conclusion’s *truth* by the concept of *acceptability*, as the outcome of a good argument. While this continues to raise serious questions, Toulmin had accepted, in *The Uses of Argument* (1958), that *acceptability* would be the criterion by which arguments would be evaluated. In fact, he virtually defines logic in these terms: logic, he maintains, is concerned “with the arguments we can put forward afterwards to make good our claim that the conclusions arrived at are acceptable, because justifiable, conclusions”.<sup>34</sup> This concept of acceptability has become central to the development of informal logic. Philosophy, with formal deductive logic as its instrument, had defined itself in terms of “the search for truth”. A more practical way of putting it would be that the philosopher strove, through observation and reason, to make sense of reality. As individual physical sciences grew proficient in the analysis of their proper physical realities, the philosopher continued the pursuit of understanding and explaining the metaphysical. The philosopher has also continued in the role of overseeing the performance of the practitioners in the various intellectual endeavours, including the physical and social sciences. In this

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regard, a central preoccupation has been the pursuit of the conditions by which human beings should live with each other and, increasingly, their relationship with all of non-human reality. A misplaced confidence in the human ability to “make perfect sense” of all aspects of reality has given way to a more instrumental, pragmatic approach in the post-modern worldview of the second half of the twentieth century. There is no less effort to understand; on the contrary, there has been an exponential increase in research into all areas of the physical sciences. Furthermore, in spite of tentative starts and some setbacks, no less attention is being given to the understanding of the human psyche in its individual and social operations. There is, however, a difference in outlook. There is now less hubris about our capacity to know and control everything, and a greater awareness that “making sense of things” will be incremental, and that the increments are likely to be small. The notion of starting with a clean slate and an unerring methodology on the high road to “truth” has been abandoned. Starting from where we are, we can make progress through honest agreement on what is acceptable while determinedly continuing the struggle for understanding. For some, this represents an invidious relativism, for others acceptability is the only possible workable criterion of success in the pursuit of understanding. When dealing with substantial reality, as distinct, say, from mathematics, we have no way of knowing whether we have achieved full understanding or “made full sense of” whatever issue is in question. This places acceptability at the heart of argumentation, which deals with the contingent, rather than the necessary, and operates, to use Toulmin’s terms, in the realm of the substantial rather than the analytic.

This study, then, supports the case that Toulmin’s work on argumentation, or informal logic, particularly the model of argumentation detailed in *The Uses of Argument* (1958), was worthy of the reception accorded by van Eemeren on its re-issue in 2003. It also contends that Toulmin’s model and its rationale either anticipated or kept pace with the significant developments in this field during the latter half of the twentieth century and up to the present, that it remains applicable, in its original form, to a wide range of argument forms, and that, with modifications that respect the original vision, it is capable of being even more serviceable. This

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viewpoint will be informed by an examination of the broad range of Toulmin's publications, which will serve to place his technical achievement in perspective against the background of his worldview and in the context of the expansion of the informal logic movement, especially since the middle years of the twentieth century.

Chapter 1 outlines Toulmin's approach to reasoning and inference as they apply to ethics and science. Taking issue with the prevailing views in both disciplines, he argues robustly in favour of what he sees as the *function* (rather than the nature) of ethics and his view of how physics, the paradigmatic scientific discipline, makes progress. In both cases, solutions to problems will be found by arguing in accordance with principles that have been established or hypotheses that have been well designed and, where appropriate, diagrammed, rather than as formal deductions from *a priori* first principles.

Chapter 2 deals with Toulmin's stated dissatisfaction with traditional formal deductive logic as an instrument of inference in the conduct of a wide range of real-life experiences. He takes issue with the received notions of probability, a key concept in substantial arguments, which Toulmin claims have far more relevance to human concerns than have analytic arguments. In seeking a form for argumentation that will display maximum candour, he rejects the traditional syllogism on the grounds that it contains a hidden complexity. The six-part model of argument form which he produces, owes a good deal to the practice of jurisprudence; the form in which the argument is set out will clearly display the claims and other features, but the acceptability of the argument will depend on the weight of relevant support adduced.

In Chapter 3, the Toulmin model of argumentation is tested for its debt, as suggested by, among others, Otto Bird, to Aristotle's *Organon* and *Rhetoric*, and the medieval embodiment of those traditions. While Toulmin realised, with hindsight, that there were elements in the work of Aristotle, especially the *Topics* and *Rhetoric*, which had informed his own prescription for argumentation, it is clear that the relationship is not as straightforward as some commentators might have suggested. The case is made that even such terms as "enthymeme" and "syllogism" have had, in

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practice, less secure definition than is usually understood. However, there is an affinity between the treatment of inference in the work of both Aristotle and Toulmin, particularly in the area of arguing from paradigm cases. While this may serve to indicate that Toulmin's mode of argumentation is soundly based, there are also many indications of the innovations which he introduced in *The Uses of Argument*.

Chapter 4 traces the path to acceptance which *The Uses of Argument* achieved in spite of initial hostility from logicians. Some of their objections had merit (e.g. Toulmin had not taken full account of the various strands of logic that had been developed by the middle of the twentieth century). However, it was a mistake to consider that Toulmin was mainly intent on denouncing the tradition of logic or its practitioners; his purpose was to fashion an instrument for practical argumentation, and the recognition of this by scholars of communication and others whose training had been in formal logic led the acceptance of *The Uses of Argument* as a significant contribution to argumentation.

The Toulmin model became available at a time when there was an increasing demand for public debate on political and social matters, and this, inevitably, encompassed debate on public policy on education, science and social services. Chapter 5 tries to assess the extent to which Toulmin contributed to the expanding informal logic movement by juxtaposing his position on a number of the central issues with that of prominent contemporary practitioners. Such issues include definitions of "argumentation"; evaluation of arguments; the displacement of "truth", as the criterion of argument conclusion, by "acceptability"; the increasing interest in and analysis of *fallacies*; and the incorporation of argumentation schemes, derived by some from Aristotle's *topoi*, into the developing theory of argumentation.

Chapter 6 underscores the continuing centrality of the Toulmin model to the informal logic project by referring to *Arguing on the Toulmin Model* (2006), the collected contributions to a conference, so titled, in 2005. In addition to identifying Toulmin's work as integral to the development of argumentation theory since the middle of the twentieth century, this collection also contains suggestions for further application and modification. This chapter also considers other attempts to improve

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the efficaciousness of the Toulmin model and provides illustration of its use in argument analysis as well as the construction of argument in the cause of policy formation.

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## Chapter 1. Ethics and Science: The Place of Reason

Addressing a conference on the Uses of Argument (2005), Toulmin informed his audience:

when I wrote *The Uses of Argument*, the last thing I thought I was doing was producing a theory of rhetoric. I wrote that book as part of a polemical debate within analytical philosophy, as it existed in Britain around the year 1960.<sup>1</sup>

### *The Uses of Argument and the Contemporary Debate*

As he does not specify precisely which aspect of the “debate” or argument he had in mind, it could have any one of several: principally, perhaps, the hegemony of formal deductive logic and its relevance to significant areas of human experience, political, aesthetic, ethical or scientific, and how to establish an alternative system that would entitle a protagonist in a dispute to the acceptance of his/her point of view on the basis of the strength and cogency offered in defence of that point of view. This is the kind of argument that Toulmin would consider substantial, and much of his disagreement with contemporary logicians arose from the fact that they demanded that arguments be judged formally valid, on the basis of analyticity, even though the kind of arguments that he wished to advance, i.e., substantial arguments, could never be considered valid on that basis. In the section on “Working Logic and Idealised Logic” of *The Uses of Argument*, he takes issue with William Kneale and P.F. Strawson as regards the application of logic to the experimental sciences,<sup>2</sup> with Rudolf Carnap’s treatment of probability and its logical implications,<sup>3</sup> and with R.M. Hare<sup>4</sup> and A.N. Prior<sup>5</sup> in the matter of their application of formal logic in the area of ethics. Toulmin was then and later prepared to offer a vigorous challenge where he considered it necessary.

Of course, consideration of the sciences was central to the analytical movement in philosophy, for the logical positivists respect for science was due to the fact of its verifiability, while ethics, as not possessing this property, was relegated to

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the category of “non-sense”, with other metaphysical themes. It is significant, therefore, and worthy of some detailed comment, that Toulmin had already treated each of these topics (i.e. ethics and science) in *Reason in Ethics* (1950), *Principles of Morality* (1954) and *The Philosophy of Science*(1953).<sup>6</sup>

Toulmin comes to these debates as a participant in, and critic of, the prevailing strand of analytic philosophy. The large-scale worldview of such idealists as Bradley had given way to the hegemony of mathematical logic. Russell’s de-contextualised “perfect language” and the common-sense approach of G.E. Moore were leading philosophers to analyse individual, discrete aspects of problems, rather than constructing grandiose verbal edifices. But for Toulmin, a student of Wittgenstein, the radical view of natural language, capable of multiple uses, dependent for meaning on context, as presented in *Philosophical Investigations* (1953),<sup>7</sup> and the “ordinary language” of Austin<sup>8</sup> and Ryle,<sup>9</sup> were to fashion his style of writing philosophy as well as informing his approach to the questions with which he chose to engage. While acknowledging the positive influence of contemporaries and predecessors, he felt entirely free to reject what he considered erroneous, and to do so in the robust manner which, he claimed, characterised the debates in analytic philosophy.

When he came to produce, in *The Uses of Argument*, an alternative model of argumentation to the deductive syllogism, Toulmin had already dealt extensively with reasoning and modes of inference in ethics and science. To some extent, what was outlined and formalised in *The Uses of Argument* had been clearly foreshadowed in his rational justification of ethics, which for some was essentially non-cognitive, and in his demonstration of the manner in which scientific principles, laws and theories are established.

While this study does not aim to assess the merits of the following treatises on their respective topics, an analysis of *The Place of Reason in Ethics* and *The Philosophy of Science* is warranted on the basis of the light they shed on Toulmin’s conclusions, as to the nature of reasoning and inference.

### **Reason in Ethics: Contemporary Views**

In the intellectual milieu of logical positivism referred to above, ethics, as non-cognitive, neither mathematical nor scientific, would have been accorded the status of “non-sense”; i.e. it was outside the range of concepts to which a rational approach could be fruitfully applied.<sup>10</sup> This would also apply to aesthetics. This is not to say that the topic of morality or the application of ethical principles to private and public affairs was ignored. In fact, there was a proliferation of analyses of ethical values; many of the acutest minds of the period addressed the problem of deciding how to define the “good” and how to establish standards by which people ought to live. The range of attitudes extended from the pronouncements of the religious, based on revelation, to the free-thinking proponents of the notion that whatever one considers desirable is “good”. Between these extremes, there were intense arguments about the nature of “good”, and indeed about whether, or how, one might discuss the notion: could it be given a definition in the abstract? Was it to be taken as a property (albeit a “non-natural” property), or was the designation “good” to be taken as an emotional commendation or a mere ejaculation? Ideological positions were being formulated and discussed in the intellectual world which Toulmin entered, and in which he participated. A revived intuitionism in various forms – emotivism, prescriptivism, and descriptivism – would later emerge as reactions. Toulmin would respond to the former doctrines as a prelude to developing his own view of the nature of ethics.

Although he declares in *Principia Ethica* that he is not an intuitionist in the ordinary sense,<sup>11</sup> G. E. Moore nevertheless exemplifies some aspects of intuitionism in his dealing with questions of value, whether ethical or aesthetic. Claiming that “good”, like “yellow”, is a simple undefinable quality, he maintains that those who define “good” in terms other than itself are uttering a naturalistic fallacy. Moore poses two questions: (1) What kind of things ought to exist for their own sakes? (2) What kind of actions ought we to perform? He maintains that responses to the second question must contain evidence relevant to the results of the action in question, whereas no relevant evidence can be provided in support of the first. His response to the question, “What kind of actions ought we to perform?” (i.e. that we can offer an answer consisting of teleological evidence) sets him apart from

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intuitionists, who suggest that such “truths” can be cognised directly. However, he is just as insistent that “[i]n response to the first question, no relevant evidence whatever can be forthcoming but this does not mean that intuitions are infallible; we can guard against error only by concentrating solely on the specific question with which we are engaged at any particular time.”<sup>12</sup> Nevertheless, Moore has no doubt that “[b]y far the most valuable things, which we know or can imagine, are certain states of consciousness, which may be roughly described as the pleasures of human intercourse and the enjoyment of beautiful objects.”<sup>13</sup> The justification of any public or private action lies in the cultivation and promotion of these goods; these are the ultimate ends of human endeavour and the basis on which social progress is to be measured. We become aware, intuitively, of objectives that are good (i.e. the pursuit of which ends will result in good outcomes), but we have to work out, in particular circumstances, which actions are possible and allowable, and which are most likely to produce the most good.

Whereas Moore’s version of intuitionism would be seen as teleological, there were those of an intuitionist cast who were deontological in their orientation. H.A. Prichard<sup>14</sup> claimed that when we have thought carefully about a situation, we will know intuitively what our obligation in that situation is. In his view, moral philosophers are mistaken in seeking reasons to justify acting in a particular manner, to prove “what can only be apprehended directly by an act of moral thinking”.<sup>15</sup> If we have done the groundwork, assiduously weighing up all the circumstances, we can rely on our moral imaginations to grasp directly what it is we ought to do just as securely as we should grasp a mathematical axiom. However, this model does not answer the question as to what happens when we intuitively apprehend obligations that are in conflict. In this case, according to Prichard, we must decide on which is the greater obligation, rather than on which course of action is likely to achieve the greater amount of good. (For many, of course, the action likely to achieve the greatest amount of good would be seen as imposing the greatest obligation.)

Another who adopted a deontological approach was W.D. Ross. For him, there are *prima facie* duties with regard to the following: promises which one has made, fidelity, (not telling lies), reparation for wrongs inflicted, gratitude, justice,

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beneficence, self-improvement, avoiding injury to others.<sup>16</sup> As with Prichard, these are matters as self-evident as mathematical axioms. This does not mean that particular actions can be logically derived from the *prima facie* duties, but

we are more likely to do our duty if we reflect to the best of our ability on the *prima facie* rightness or wrongness of various possible acts in virtue of the characteristics we perceive them to have, than if we act without reflection. With this greater likelihood we must be content.<sup>17</sup>

Another approach to the explication of ethical statements, which was in vogue in the period leading up to Toulmin's entry into the debate with *Reason in Ethics*, became known as the "emotivist theory", and received a detailed exposition in the work of C.L. Stevenson. In "The Emotive Meaning of Ethical Terms",<sup>18</sup> Stevenson distinguishes between the different purposes for which language may be used and he discusses the *affective* use as distinct from the *descriptive*. In moral discourse, he claims, we are not offering information in the form of description; rather we are attempting to influence, to alter attitudes.<sup>19</sup> We are not communicating a fact when we say, for example, "Abortion is wrong." We are recommending to potential hearers or readers that they should have nothing to do with abortion. A.J. Ayer provided a forthright and straightforward account of the matter. For him ethical concepts are unanalysable because they are mere "pseudo-concepts."

Thus if I say to someone "You acted wrongly in stealing that money," I am not stating anything more than if I had simply said, "You stole that money." In adding that this action is wrong I am not making any further statement about it. I am simply evincing my moral disapproval of it. It is as if I had said, "You stole that money" in a peculiar tone of horror, or written it with the addition of some special exclamation marks.<sup>20</sup>

While this account is the result of rational analysis, it is clear that reason, in Ayer's opinion, has nothing to do with the establishment of ethical systems. The intuitionist model would, similarly, leave one asking about the role of reason in arriving at self-

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evident knowledge. Any claim to knowledge should be able to respond convincingly to the query, “How do you know?”, and there is no answer to this from the intuitionist. He is, of course, entitled to claim, “I believe”, on the basis of intuition, with any degree of conviction he chooses, but this is not amenable to rational analysis and can only return ethics to the realm of the subjective.

Keeping in mind that this study is focussed on Toulmin’s modes of reasoning and inference, rather than his development of, or support for, a particular ethical theory, it is not necessary to offer a detailed critique of his, or other, bases for ethical theory, except in so far as he purports to underpin his approach to ethical questions with justificatory reasons. However, given the currency of the above ethical theories, it was necessary for Toulmin to review them before moving on to his own analysis of the role which reason should play in ethics, and, indeed, to examine the nature of reasoning itself.

Toulmin considers in some depth each of what he regards as the traditional broad categories within which various more sophisticated ethical theories had been developed: (a) the “objective” approach, the attribution to something of a “property of some kind” when referring to it as “good”; (b) the “subjective” approach, which is the use of “good” or “right” to express feelings towards something; and (c) the “imperative” approach, which is to regard ethical language as hortatory, i.e. to be used for persuasion. Toulmin dismissed the “objective” position: people speaking the same language and in full possession of the facts will have no disagreement about, for example, identifying “red” as a quality of some object, whereas there is likely to be considerable disagreement with someone who says that “Meekness is bad”. Values are not properties, simple, complex, or “non-natural”, and Toulmin rejects as useless, as a *cul-de-sac*, the possible suggestion that the doctrine may be taken to be metaphorical: “What we want is a literally true account of our ethical concepts, an account that will show us how to distinguish between good ethical reasoning and bad.”<sup>21</sup> The use of non-literal language, at this point, will lead to confusion and dilute the clarity which should characterise the reasoning necessary to establish valid ethical concepts.

The use of language, he insists, has been responsible for leading people astray,

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some, for instance, being misled by the structural similarity of “Meekness is good” and “Cochineal is red”,<sup>22</sup> but Toulmin claims that there is a further flaw underlying the “objective” doctrine which he presents as follows: if two people disagree about ascribing a predicate – for example, the property “red” – to an object, “there must be something in common to both and neutral between them, about which they are disagreeing”.<sup>23</sup> This is the *property* of redness. If the disagreement concerns the ascription of *right* or *good*, it seems compelling to say, by analogy, that the “neutral thing in common” is the *property* of rightness or goodness. But this apparent “logic” is misleading: when one asks a question about the right thing to do, one is seeking reasons in support of one line of action or another. It is fallacious to suggest that there cannot be contradictory sources of advice unless “rightness” is a property. There will be contradiction when one set of reasons counsels a different line of action from that of another set.

Toulmin directs the same kind of close analysis to the “Subjective” approach, which claims that, in identifying something as “good” or “right”, we are reporting “on the feelings which we (or the members of our social group) have towards it”.<sup>24</sup> The fact that there are differences between individuals and communities in the matter of ethical affairs is part of the evidence produced in favour of the position that ethical standards are subjective. This would seem to equate “ethical” with what is pleasant or attractive, and, as these judgements are dependent on personal taste, it would not be possible for one to contradict another. But, according to Toulmin, if he asks a question about the right course to follow he may be given contradictory answers and that would be contrary to the subjective doctrine. It is not possible to foresee universal criteria for pleasantness, even though there might be widespread agreement that certain things were pleasant, while it is possible to conceive of common standards and criteria in ethical matters. Although to hope for such might be futile, it would not be nonsensical, whereas to hope for common standards and criteria of pleasantness would be futile. Toulmin emphasises this difference: “Philosophers who support the subjective doctrine confuse the contingent difference in standards of rightness and goodness (which there might not be) with the logically necessary difference (which could not be otherwise) in the standards of pleasantness,

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enjoyability and so on.”<sup>25</sup> Toulmin is not impressed by the suggestion that “ethical disagreement is disagreement in attitude, not belief”, even by its outworking to the formula that when I say, “This is good”, I mean: “I approve of this: do so too”.<sup>26</sup> Toulmin’s preoccupation is with the fact, as he sees it, that when faced with a choice of action, we have to decide between various possibilities and the arguments in favour of such decisions and “[w]e shall have to distinguish between those which are worthy of acceptance (‘valid’ as we now call them) and those which are not worthy (or ‘invalid’).”<sup>27</sup>

The central questions for him continues to be concerned with the rational basis of ethical conclusions and the justification of “evaluative inference”, and neither the objective doctrine with its reliance on the “property” approach nor the subjective attitude, relying on psychological states, addresses these questions. Because of conventional linguistic usage, there is a tendency to refer to properties as being *in* the object (objective) or *in* the subject (subjective), and in accordance with the Law of Excluded Middle *values*, must be one or the other, or be somehow “unreal”. But, according to Toulmin, this reasoning is flawed: there is no good reason to accept that this dichotomy applies to values, and this points up the error to which the use of figurative language may lead.

The third traditional approach to ethics is what Toulmin refers to as the “Imperative” approach, which contains a subjective element, i.e. the imperativist *shows* his feelings, rather than *stating* them. Toulmin responds to it as it is presented in the work of A.J.Ayer.<sup>28</sup> As outlined earlier, the central thesis of this doctrine is that ethical statements are not propositions which can be true or false; they are merely the equivalent of ejaculations designed to express our feelings of commendation or condemnation of certain actions or judgements. As such, there can be no dispute about them, since there can be a dispute only about statements of fact. If there appears to be an ethical dispute, the best that can be hoped for is that if agreement about the factual elements can be established, conformity on ethical positions may follow. Such a view, in Toulmin’s opinion, takes too narrow a view of the uses of reasoning, since it assumes “that a mathematical or logical proof or a scientific explanation can be the only ‘good reason’ for any statement”.<sup>29</sup> This is to

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dismiss all evaluative inferences as “non-sense” and ignore the central practical question which Toulmin is seeking to address: how to distinguish between “those ethical arguments which we should accept and those which we should ignore or reject”.<sup>30</sup> He traces this departure from common experience, in which reasons can be advanced for a wide range of claims, to the Humean injunction against “sophistry and illusion”, which Hume regards as the only alternatives to mathematical and empirical reasoning.

Granting that his use of “reason” and “valid” is different from their technical use in, for instance, deductive, inductive or probability logic, Toulmin insists that this does not entitle the imperativist to claim that ethical judgements have *no* validity. There are different criteria by which inferences are made in different spheres (mathematical, etc.), and the imperative doctrine correctly draws attention “to the difference between arguments from logical, mathematical or factual premises to conclusions of a similar logical type, and arguments from factual premises to conclusions of a different kind, conclusions about duties or values.”<sup>31</sup>

When one reaches an ethical conclusion on the basis of good factual reasons, one is not merely asserting the facts or anything of the same logical type; one is saying that one ought to approve or disapprove of something, or do, or refrain from doing, something. The philosopher who espouses the imperative approach is concerned, mistakenly, according to Toulmin, that if we call the facts which we assemble in favour of ethical conclusions “reasons”, we may confuse these with factual conclusions reached by the use of deductive and inductive logic. The only correct response, he insists, is to be aware of the possibility of the philosophical error of drawing the wrong kind of conclusion (factual rather than ethical) and, in spite of the imperativist, continue to work with the concepts of “ethical reasoning”, an “ethical dispute”, “a valid evaluative inference”, a “sound ethical judgement”, or “a good reason for doing this or that”, as before. Of course he still has to elucidate each of these concepts, and having demonstrated the inadequacies of the objective, subjective and imperative approaches to ethical concerns, he is still faced with the challenge of answering his first question: “What kinds of argument, what kinds of reasoning, is it proper for us to accept in support of moral decisions?”<sup>32</sup> Even prior

to that, if a full response is to be afforded, is the more fundamental question: “What is reasoning?”

### **Conclusions “Worthy of Acceptance”**

It is clear that Toulmin intends to restrict his analysis to the practical application of the concept of reasoning, i.e. the arrival at acceptable conclusions, as a result of offering support in favour of a point of view. Anticipating the form of reasoning which he would later provide as a paradigm of argumentation, he presents examples of dialectical reasoning (i.e. dialogues) drawn from various fields of experience, in which a proponent attempts to convince another that a particular fact is the case, or that a certain course of action ought to be followed. Having offered examples in the areas of arithmetic, science, ethics and “everyday” experience, he concludes that, even though the dialogues contain reasoning/argument and “reasons for a claim that has been made”, *this form* is not, in itself, adequate as a definition of reasoned argument. Such a form of interchange could prove persuasive, in certain circumstances, as a result of the *disposition* of either partner to the dialogue.

Although there may appear to be, in some dialogues, a response by way of *reason* to objections by an opponent, in others, specious “reasons” may sway a partner in dialogue as a result of threats or cajolery. To qualify as “reasoning”, the process must be detached from such potentials for bias or force. What is necessary is some quality within the argument itself, independent of proponent or opponent, which would make the argument “*worthy of being believed*”, (based on the Latin grammatical feature, *gerundive*, which designated something as “being worthy of” whatever was signified by the specified verb.) An answer to the question, “What kind of statements will make a conclusion worthy of acceptance?”, will apply to arguments across a range of subjects, not just ethics, and will form the basis of Toulmin’s concept of reasoning and structure of argumentation.

Some philosophers, according to Toulmin, claim that to be worthy of acceptance or belief, a conclusion must correspond to a fact, but, as, demonstratively, this can have application only to *descriptions* of things in the world, it is irrelevant to ethical statements and he is led to the conclusion that “what

makes utterances ‘reasons’ for a conclusion depends, and must depend, upon the circumstances and the kind of conclusion involved.<sup>33</sup> Echoing Wittgenstein, Toulmin points out that speech has a great variety of uses, and how we identify the appropriate kind of reasoning depends on the nature of the utterance and the function it is to perform in a wider context; i.e. it would be a mistake to consider that the question, “What is reasoning?”, can be answered by prescribing just one mode. It will be necessary, therefore, to discover the logical criteria that apply to ethical language. However, rather than tackling this directly, he proposes to conduct a pilot study on the reasoning involved in scientific argument, to see how, or if, the results might be applicable to ethics.

The formulation of scientific theories follows the failure of common sense to explain puzzling phenomena (e.g. why does a straight stick appear to be bent when we plunge it into water?). A satisfactory theory will explain the observation, but we will want to make predictions based on it, “using the methods of deductive logic – and of mathematics where these are available as a guide”.<sup>34</sup> The theory most worthy of adoption will be that which displays (a) most predictive reliability, (b) most coherence and (c) greatest convenience; and these will be the criteria used to judge “[w]hat makes a good reason in science?”;<sup>35</sup> i.e. the criteria are intrinsically related to the nature of the activity. Clearly, if the function of science is “to alter expectations”, while that of ethics is “to alter feelings and behaviour”,<sup>36</sup> the analogy between these disciplines is limited, yet the relation between the *function* of ethics and the criteria for its evaluation is as compelling as that obtaining in the subject of the pilot study, i.e. science. But what is the function of ethics?

### **The Function of Ethics**

As ethical values make sense only in terms of the lives of communities, it is clear that the function of ethics has to do with harmonising the actions of the members of a community so that they cause least inconvenience to each other and, on a positive note, “to correlate our feelings and behaviour in such a way as to make the fulfilment of everyone’s aims and desires as far as possible compatible.”<sup>37</sup> In primitive communities, ethics is deontological: strict rules are imposed, and certain

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practices become established as principles of behaviour. In Toulmin's terms, such principles "may be thought of as shorthand summaries of experience"<sup>38</sup> (like laws of nature in science).

As communities mature, the deontological gives ground to the teleological, leading to some of the original principles being called into question. At one end of the spectrum, some of the established practices will be seen as less important than others and will be abandoned, or undergo modification; at the other end, some practices will be seen as crucial to the survival of the community and a permanent contribution "to the general requirement that preventable suffering shall be avoided".<sup>39</sup> The question, "Is this the right thing to do?", will be decided by reference to an operative principle of the society. At a certain point, it will not be possible to give further reasons for a particular action. For instance, if I have decided on a certain action and I am asked, "Why would you do that?", and I reply, "Because I promised", I may be pressed for further justification, and arrive at the general statement: "It was a promise". There is no further reason that I can give, since, within the community, there is acceptance that "promises ought to be kept". If, however, there is a conflict between duties and their underpinning principles, I must arrive at a conclusion by reference to proportionate consequences. As society becomes more developed, the principles themselves may be questioned, and deciding whether a change of principle will increase the harmonisation of desires or lessen the potential for conflict in any society/community will depend on recourse to experience. However, some principles, like keeping promises, will always be maintained.

Comparison of social practices, in terms of their ethical value, are valid only within a particular society; for instance, in Toulmin's view, it is irrelevant to compare, from an ethical point of view, an aspect of the Muslim way of life with an aspect of a Christian way of life: they have reality only within the community or society where either is the accepted norm. Within a particular community, according to Toulmin, one ought not to choose, as a matter of principle, either the deontological or the teleological position.

The answer to the question, "Which is the right course of action in these

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circumstances?”, could be either in accordance with one or the other, depending on the nature of the situation. If one course of action is, clearly, an accepted norm of behaviour in the society, this will be the course to adopt. If, on the other hand, there are conflicting norms governing this situation, one must judge what the consequences are likely to be, and act in accordance with the choice which seems to promise the greater good. In certain circumstances, there may be no conflict of moral directions, and a choice may be entirely open to the decision of the agent. But in this kind of case there is scope for what Toulmin refers to as an “extension” of ethics. When he referred to reasoning on moral grounds, he had in mind the achievement of the harmony of society. Where this is not at stake, one might take decisions in pursuit of happiness or, by extension, take the kind of decisions that would not merely relieve social hardships, but help to increase the possibilities for the happiness of fellow citizens.

In the course of his analysis, Toulmin has found the objective doctrine of ethics, with its non-natural properties, and the subjective and imperative doctrines, inadequate and irrelevant. In his efforts to display the role of reason in ethics, he has eschewed the tactic of trying to *define* ethics and to concentrate on the *function* of ethics. This has led him to conclude that “in *particular types* of ethical question and argument, good reasoning is distinguished from bad, and valid argument from invalid ... by applying to individual judgements the test of principle, and to principles the test of fecundity”.<sup>40</sup> Just as there are limits to the kinds of questions for which we can legitimately ask for answers in science (e.g. a recurrence of casual coincidences will find no explanation in science), so there are questions that are not governed by ethics and are determined in accordance with personal taste. But there is a meta-ethical question which, according to Toulmin, makes no sense and is unanswerable in ethical terms, i.e. “Why ought one do what is right?”. This is not subject to reason or argument, since to suggest that one “ought” to do other than what is “right” is, according to Toulmin, self-contradictory. It may be the task of others to encourage members of society to adopt this point of view, which would demand widespread reasonableness, but it is not the function of the logician or any philosopher.

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Toulmin is satisfied that he has provided a description of situations in which ethical decisions must be made, and how reason plays a part in such activity. He has identified the function of ethics as the creation, and enlargement of, social harmony and the avoidance of distress and inconvenience to others. When in doubt as to which action to take, we should make reference to an “established maxim of conduct”<sup>41</sup> as being the best guide. Where there are conflicting maxims or principles, or where no principle has been established, we base our action on our judgement of what is likely to have the best results for everybody, and we may never ignore the rights of others. As a community develops, it moves from the deontological or authoritarian impulse to the teleological approach, which, due to increasing insights into the nature of the world and an enlarged vision of potential happiness for everyone (brought about, in part, by science), leads to a questioning, modification or perhaps replacement of existing principles. There is, therefore, a need for the role of the “moralist” which will identify, on a continuing basis, the possibilities of increased satisfaction for the members of the community.

The present purpose is not to evaluate Toulmin’s ethical theory. The focus of this study is Toulmin’s model of argumentation as presented in *The Uses of Argument*, and the analysis of *Reason in Ethics* has been undertaken to discover whether it is possible to discover the genesis of his argumentative technique in his earlier work. As remarked at the beginning, Toulmin saw himself as involved in a dispute within analytic philosophy when he produced *The Uses of Argument*, and one can see a similar point of departure, a dispute with philosophers of ethics, as he develops his points of view in *Reason in Ethics*. One can see also the characteristically robust criticism of other points of view, the detailed analysis, the use of ordinary language with, as far as possible, the avoidance of philosophical technicalities. The contemporary vogue of “common-sense” is reflected in his down-to-earth illustrative anecdotes and his appeal to familiar experiences. But his professional background in science is also invoked in the cause of illustration and analogy when he wants to elucidate his arguments about ethics.

Toulmin does not find it necessary to justify such general principles as “Promises should be kept” or “One should not discommode others”, although he

seems to be dismissive of “fundamental moral intuitions” which have not achieved the status of acceptance as “principle” within the community.<sup>42</sup> On the basis of a principle that has achieved such status, Tore Nilstun abstracts the following *rule of inference* from *Reason in Ethics*: “Given that A satisfies at least one current moral principle in the agent’s community and that it does not dissatisfy any other current moral principle in the agent’s community, then one may conclude that A is morally right.”<sup>43</sup> Nilstun proceeds to formulate the corresponding rules of inference for the “morally wrong” choice, and then extends that reasoning to the situation where the teleological criterion is the relevant one. This is what Toulmin refers to as “evaluative” inference, “by which we pass from factual reasons to an ethical conclusion”<sup>44</sup> and, despite the attitudes of objectivists and subjectivists who rely on deductive or inductive reasoning, “evaluative” reasoning can result in arguments “which are worthy of acceptance (valid as we now call them) and those which are not worthy (or invalid).”<sup>45</sup>

This attitude will be a central impulse to the development of the model of argumentation outlined in *The Uses of Argument*, and is underscored by his emblematic conclusion to the chapter “Reasoning and Reality” of *Reason in Ethics*, to the effect that “the soundest instinct is ... to understand the meaning of words only in their contexts, and to trust logic only so long as it keeps in touch with life.”<sup>46</sup> This insistence on adherence to experience and common sense with an instrumentalist approach to theory and technicality, would characterise Toulmin’s attitude to logic and argumentation just as it concentrated on the function, rather than the definition, of ethics, and as it would focus on what it is that scientists really do when he came to dealing with philosophy of science.

### **Ethical Traditions**

Toulmin’s anthropological analysis posits strict rules at the early stage of human society, which are modified as a result of reflection on how best suffering may be avoided and, as a consequence, an increasingly harmonious society is created by the introduction of measures calculated to accommodate, as far as possible, the legitimate objectives of members. The deontological gradually gives way to the

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teleological. Toulmin illustrates this by referring to the contrast between the Old and New Testaments where strict obedience to rules is replaced by an increasingly rational attempt to avoid or alleviate human suffering at the expense of the earlier strict code. He also exemplifies this difference by reference to the dramas of Sophocles and Euripides, for the former of whom, Toulmin maintains, the ancient strict obligations dominated while for latter the human dimension of compassion had begun to be taken into account. This, however, was to leave out of consideration the Aristotelian analysis in the *Nicomachean Ethics*, which, while assuming membership of a society to be natural to human beings – albeit a different kind of society experienced or envisaged by Toulmin or the commentators to whom he was responding – attempted to identify what is natural for a human being so that he could then outline the circumstances and activities that would bring about the complete flourishing of the human. If, for Toulmin, the objective of an ethical system was the creation of a harmonious society, Aristotle might have asked, “How does that achieve the happiness or ensure the flourishing of the individual?” The respective societies were very different – some basic assumptions about the connotation of democracy would not be shared – but Toulmin’s analysis of the source and dimensions of “the good life” is restricted by comparison with that of an Aristotelian approach. A community whose members have trained their dispositions through cultivation of the virtues in accordance with the mean, by the exercise of their rational faculty, will provide the context for the good to prosper. This was a vision of the ideal, for free citizens, related to existence in a clearly stratified society where some could hope to achieve the ideal, a society designed to secure its own safety and facilitate the intellectual and dispositional development of its well-educated members. A city-state could envisage the provision of the kinds of control and influence that “the good life”, the happiness or flourishing of citizens, would entail. Toulmin, more than two and a half millennia later, informed by anthropological insights, the ethical inheritance of the Judaeo-Christian tradition, the Kantian imperative, and the various forms of utilitarianism, chose to accept the combination of the deontological (in accordance with current mores) and consequentialism (in terms of human happiness) as the basic guide towards the “good”. But the concept of

“good” is essentially different from that idealised by Aristotle; in Toulmin’s world, the question is, “What ought I to *do*?”, rather than, “What ought I to *be*?” The truly virtuous man would always make the right choice.

In spite of this essential difference, Toulmin shares an Aristotelian approach for the part played by reason in arriving at the “good”, however defined, and the practical reasoning characteristic of Aristotle is mirrored in Toulmin’s intention, cited in the preface to *Reason in Ethics*, to develop the rational arguments for ethics, which, in his view, were initiated by Francis Bacon in his *Of the Coulers of Good and Evill* (1597). To do so, Toulmin has had to examine, at some depth, the nature of reasoning, and it is this aspect of *Reason in Ethics*, the extent to which Toulmin uses logic to assemble arguments for his point of view, and even his view of what logic is, which is of most interest to this study of Toulmin’s contribution to the nature and structure of argumentation, especially as it emerged in *The Uses of Argument* and later. This reference to Bacon, primarily a scientist who presented the scientific method as an inductive exercise, is not surprising. Although Toulmin would go to great lengths to demonstrate that the physicist, as distinct from the natural historian, did not proceed by way of induction, his scientific background left him in no doubt as to Bacon’s place in the pantheon of science.

In the course of *Reason in Ethics*, Toulmin frequently utilises aspects of science for purposes of comparison and illumination, identifying the similarities and differences between the disciplines and recognising that, whereas the function of scientific judgement “is to alter expectations”, that of moral judgements “is to alter feelings and behaviour”. Nevertheless, he has insisted that valid reasoning and “good reasons” are at the heart of ethical decisions; it is to be expected that reason and valid argument will be central to his study of the philosophy of science.

### **Reasoning in Science: Physics and Natural History**

To *The Philosophy of Science* (1953), Toulmin brought his training and experience in science, as well as his characteristic analytical approach.<sup>47</sup> He is intent on describing what scientists actually do, rather than what it is claimed they do in logic textbooks, by logicians who come to “scientific method” by way of models of

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deductive and inductive reasoning. How, in fact, do scientists decide that an explanation is acceptable? He is also determined to clear up some, as he sees it, inadequate accounts by others, e.g. Ernst Mach, who, according to Toulmin, identified generalisations with laws of nature.<sup>48</sup>

In order to get a clear picture of what is achieved in science and how progress is made, it is vital to recognise the differences between, for example, natural history and theoretical physics. Not alone do they proceed by different methods, but they differ radically as regards the modes of logical inference they employ. Toulmin offers examples of reaching conclusions by the use of different modes of inference, in order to highlight different ways of reasoning. Robinson Crusoe, for instance, detected a footprint in the sand and concluded that a human had been there. A natural scientist, by observing and plotting the itineraries of large numbers of birds, concludes they all followed the path of “great circles”. But how do these conclusions relate, in terms of method, with the physicist’s discovery that “light travels in straight lines”? One could see that Crusoe’s conclusion could be corroborated by the appearance of a person around the next corner, and the naturalist’s empirical results could be supported by accumulating further data, but “light travels in straight lines” is clearly different: one can hardly meet the straight lines, and light does not always travel in straight lines (refraction). The inference in the case of “light travelling” comes from a new way of regarding light and shadow, which had always been observed, but are now seen in a new way, and familiar language is given a new application.

Toulmin contrasts the comparatively banal results of the natural historian, who, in the Baconian empirical tradition, has “head-counted” a large sample of ravens and is prepared to claim,

All ravens are black  
R is a raven  
Therefore R is black

with the fertility of the statements of the physical sciences, such as

“Light travels in straight lines” or

“The hydrogen atom consists of one proton and one electron”.

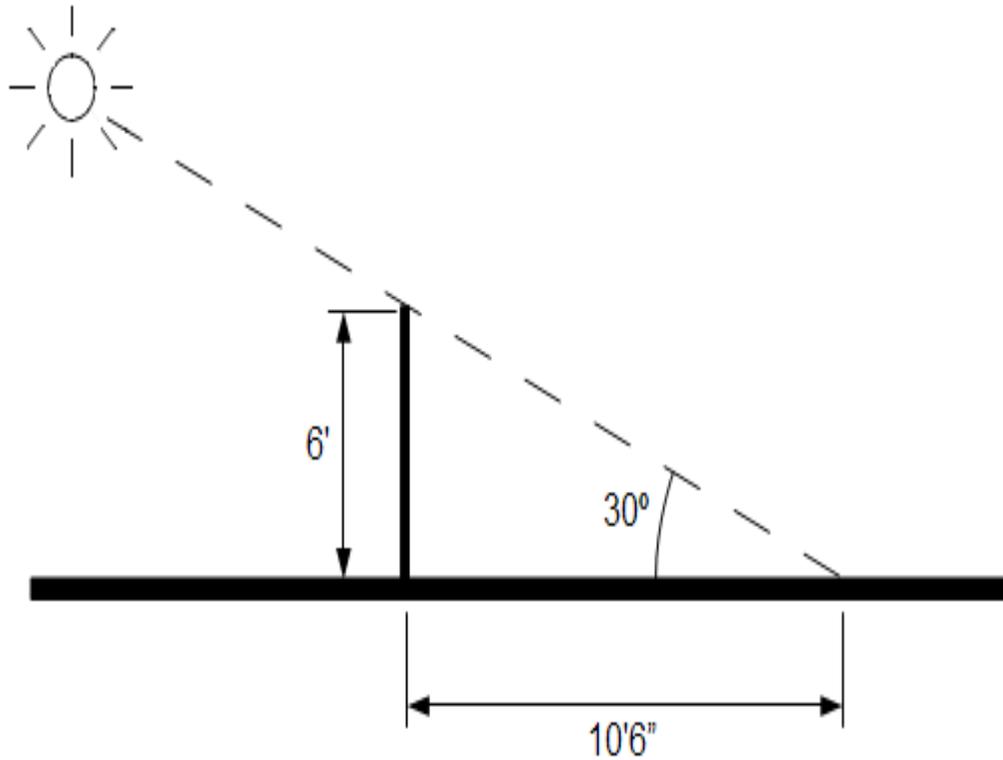
However, the contrast between the so-called physical and natural sciences are of concern here in so far as they illustrate methods of inference and foreshadow the kind of argumentation that Toulmin would subsequently formalise. Furthermore, it is not relevant to the present study to evaluate the correctness, or otherwise, of Toulmin’s philosophy of science; commentary from philosophers of science provided mixed reviews.

While the distinction Toulmin draws between laws of nature and empirical generalisations – and, correspondingly, between physical science and natural history – undoubtedly has a sound basis, much that he asserts about their alleged differences is, moreover, open to serious question.<sup>49</sup> What is necessary from the present point of view is to identify, as clearly as possible, how, in Toulmin’s opinion, science works in practice, and how he sees the relationship between the layers in science (facts, hypotheses, principles, theories), and, especially, the mode or modes of reasoning which, according to Toulmin, lead to new knowledge or understanding.

### **Rectilinear Propagation of Light and Snell’s Law**

As an example of *inferring* techniques in the “exact sciences”, Toulmin focuses on the principle of the Rectilinear Propagation of Light, the theory that light travels in straight lines.<sup>50</sup> The value of this theory is not its correspondence to reality (what could it mean to say that light “travels”?), nor the fact that it is the result of empirical evidence gathering (it is modified by the intervention of refraction); but, from an instrumentalist point of view, this theory makes it possible to explain a variety of optical phenomena. Toulmin demonstrates this by showing the facility with which the physicist can calculate, or read off from a diagram, the length of the shadow cast by a wall of specified height, depending on the angle of elevation of the sun. The following diagram, an integral feature of the inferring technique, illustrates how a conclusion is drawn, based on the acceptance that light travels in straight lines or,

more formally, the Principle of the Rectilinear Propagation of Light. If, as the diagram purports to represent, the sun, at an angle of elevation of  $30^\circ$ , shines directly onto a six-foot-high wall, it will cast a shadow of ten and a half feet onto the ground behind the wall. (The ground is represented by the horizontal line, the wall by the vertical, and the sun's ray by the broken line.)



Shadow-casting, in accordance with the Rectilinear Propagation of Light.

Commenting on the nature of the inference or reasoning involved here, Toulmin rules out inference “from one fact to another” (on Humean grounds); nor is it a deduction from a generalisation. He further points out that the substantial step in the argument is not of a syllogistic kind, and he concludes that “Somehow none of the kinds of inference we are accustomed to from the logic books seems to fit the case.”<sup>51</sup>

Logicians may not recognise the kind of inference-drawing technique used here, (i.e. from the height of the wall and the angle of the sun, one may infer the

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length of the shadow) because it involves geometrical representation, rather than the conventional verbal exposition. Furthermore, having represented the phenomena in this manner, the physicist can infer conclusions about the length of shadow cast by a wall of different height, when the sun is at a more acute or obtuse angle, by varying the dimensions of the diagram. Toulmin insists that it is the method of representation that allows such inferences – we would never observe light rays in the manner in which they have been represented here – and that this method of procedure is at the heart of the reasoning processes which serve the physicist. Of course, the geometrical diagram will be replaced by more sophisticated mathematical procedures in dealing with more complex phenomena, where mathematical equations will take the place of diagrams as techniques of inference-drawing. In fact, mathematics is at the heart of the inferring techniques used in physics and, re-emphasising a point he has made earlier, Toulmin asserts: “Certainly none of substantial inferences that one comes across in the physical sciences is of a syllogistic type.”<sup>52</sup>

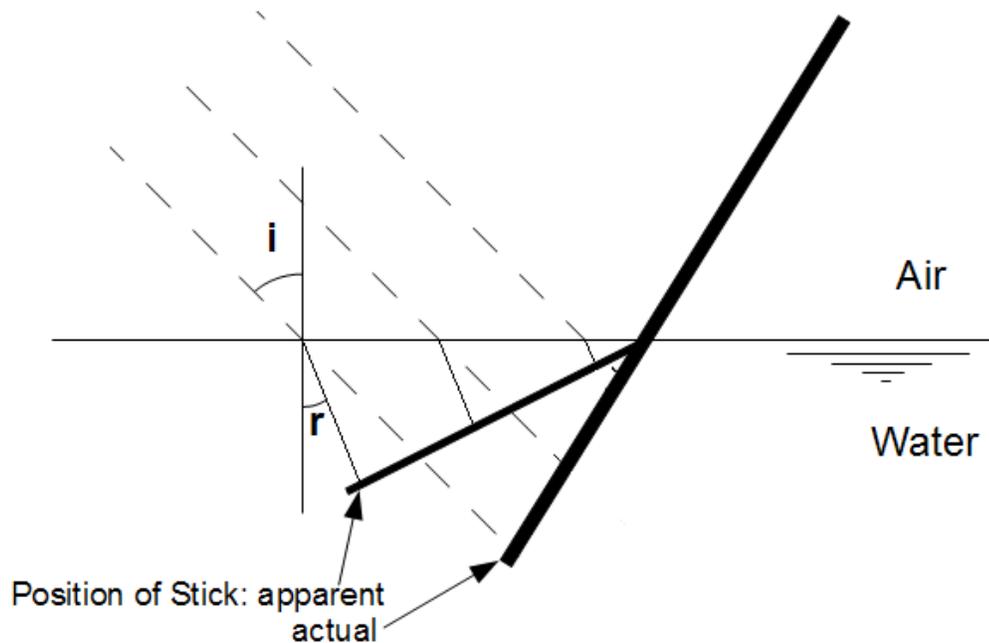
Neither are they of an inductive type, resulting from accumulation of observations, which informs the work of the natural scientist. The inferences drawn in physics are *substantial* because they go beyond the data provided by direct observation. Toulmin disagrees with Ernst Mach, who thought that we can accept theoretical conclusions only if they can be logically related to the results of experiments which should *warrant* such conclusions.<sup>53</sup> This, he claims, is to misunderstand the relationship between the theoretical statements and the data which we are attempting to explain: no matter how many instances of the phenomenon represented in the shadow-casting diagram one collects, it will never be possible to conclude, in a deductive manner, that light travels in straight lines:

For it is not that our theoretical statements ought to be entailed by the data ... they neither could be nor need to be entailed by them, being neither generalisations from them nor other logical constructs out of them, but rather *principles in accordance with which we can make inferences about phenomena*.<sup>54</sup> (emphasis added)

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Justification of the principle follows from the process of accounting for our data in terms of that principle, not as a deduction from data gathered by observation. But how do the principles come to be formulated? Toulmin agrees, at least in part, with Einstein's suggestion that advances in the theoretical sciences, the discovery of new principles, are the result of imaginative effort,<sup>55</sup> but Toulmin insists that the imagination will be that of the well-tutored scientist who has served his apprenticeship. Before setting up experiments, for example, the physicist must have a high expectation of what he is likely to find, and design experiments accordingly. He is not, therefore, relying on generalisation from observation, or deducing one fact from another; he is trying to formulate a general law or principle to explain regularities which have already been observed. His experience and training will be vital in hypothesising as to what such a principle might be, as he "seeks the *form* and the *scope* of regularities which are found to happen, not universally, but at most on the whole."<sup>56</sup>

Toulmin reinforces his thesis on the nature of the inference involved in deriving conclusions in science in accordance with accepted principles, by detailing the process of arriving at a law of nature, related to the Principle of the Rectilinear Propagation of Light, but requiring experimentation for its formulation, i.e. Snell's Law:



Representation of Snell's Law and the "Bent Stick".

Snell's Law states: "Whenever any ray of light is incident at the surface which separates two media, it is bent in such a way that the ratio of the sine of the angle of incidence to the sine of the angle of refraction is always a constant quantity for those two media".<sup>57</sup> A regularity in the behaviour of light rays when they meet transparent material, e.g. glass or water, had been observed for centuries before Snell identified and found a formula for the alteration in the direction of light when it meets such surfaces. To begin with, Snell's hypothesis would have been held tentatively, but as soon as it was shown to hold good in a variety of situations, even if not universally (there are translucent surfaces where this phenomenon does not occur), it would gain the status of a *law*, the truth or falsity of which would not normally be questioned. The questions that will arise will concern its scope and limitations.

### **Inference in accordance with Principles**

This is paradigmatic, according to Toulmin, of the way in which science progresses:

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hypotheses become laws and increase the quantity of theory, in accordance with which conclusions can be drawn about phenomena which need to be explained. The position of a planet in the coming week, for example, will be worked out by following known rules, based on its present position and speed, but this inference is not a deduction from the laws of motion; it is rather “drawn in accordance with them”. In this kind of case, the inference may be drawn by way of line-drawing or sophisticated mathematics, but, whatever the method of inference, it must “*license one to pass in one’s arguments*” from one to the other (emphasis added).<sup>58</sup> In another image, with which he credits Gilbert Ryle, he says that a principle will be applied as an “inference ticket”, by which one is entitled to reach a conclusion about a particular phenomenon; and, although he expresses some reservations about the language Schlick uses to talk about the laws of nature as “directions for the investigator to find his way about in reality”, he finds it useful to combine the metaphors and consider a law of nature as a “runabout ticket”, on the basis of which the scientist explores aspects of reality that come within its scope. Extending the analogy, Toulmin suggests that laws and principles in science can be seen as maps: having surveyed some aspects of a terrain, a cartographer can represent his results visually, and from this representation further data can be inferred.

Toulmin, then, has attempted to give a practical account of how science, particularly physics and the physical sciences, works. In fact, it is important to state that, for Toulmin, physics is the paradigmatic science; the natural sciences, with their “head-counting” techniques, are used as foils in the main task of setting out how “real” science and “real” scientists, i.e. physicists, set about, and make progress with, their work. Their conclusions do not depend on an exhaustive accumulation of data, nor are they derived as deductions from laws or principles as major premisses. He demonstrates the manner in which principles or laws of nature are identified, and how well-chosen hypotheses are selected and tested in carefully arranged experiments. Such experiments are carried out after hypotheses have been formulated by well-trained scientists who, accepting the conventional corpus of scientific knowledge and applying intelligence and imagination, submit unexplained phenomena to testing in terms of a well-chosen existing law. This simplified,

instrumentalist version of how science advances does not deal with the major controversies in the philosophy of science, such as realism versus anti-realism, the Kuhnian scientific revolutions, the Popperian falsification policy or the over-arching scepticism which accompanies the advancement of scientific theory. Toulmin's focus is on the process of inference in scientific work.

### **Summary**

Toulmin, therefore, is claiming that, in both ethics and science, conclusions are drawn in accordance with conventions or principles which operate at a particular time. In ethics, the moralist, and in science, the experimenter, will be alert to new situations demanding modification of existing principles or, occasionally, the replacement of one principle (law) by another. In normal circumstances, individual actions will be legitimised by existing societal norms, and individual phenomena will be explained in accordance with currently accepted laws. Rationality will allow, or, on occasion, demand, that inference be drawn in accordance with one to the other. An argument in ethics will proceed, not as a deduction from *a priori* first principles, but in accordance with the formulations which have developed from experience, as being for the present, most likely to achieve the goal of harmonising objectives.

This method of inference, placing specific data in the context of established, nomological utterances, would be analysed and exemplified in detail in *The Uses of Argument* (1958), which attempts to show that the analytic, syllogistic argument as a paradigm of scientific or ethical reasoning is inadequate. So, too, is the mathematico-logical calculus model as the paradigm of rationality in dealing with the range of arguments which occur in human experience, the conclusions of which fall short of "necessary". There is, however, a demand that arguments, of whatever kind, should be infused with rationality, that they be "logical" and that their conclusions should provide new information, rather than just an explication of what has already been said, implied or presupposed. But what does it mean to be "logical" in real-life arguments which cannot easily be identified as "deductive" or "inductive", according to the standard canons of formal logic? Toulmin, who in the

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course of his work has engaged in critical discussions in areas such as science, ethics, aesthetics and the humanities, economics and politics, tries to give a constructive answer in *The Uses of Argument* (1958).

### Chapter 1 Notes

1. Hitchcock, D. & Verheij, B. (eds.) (2006) *Arguing on the Toulmin Model*. Springer, p.26.
2. Toulmin's central objection to the logicians is that they adopted as paradigmatic the analytic argument, which they saw as deductive, necessary of conclusion, formally valid, warrant-using and expressed in terms of logical connectives, e.g. "all", "some" "or". Judged by these standards, substantial arguments could never be considered "conclusive" or even "valid." It is in this context that Toulmin takes issue with logicians. He cites William Kneale, in *Probability and Induction* (p.21), as claiming that, while mathematics provides results that are self-evident or demonstrable by conclusive reasoning, this can never be the case with the sciences. Kneale does grant that some results in, for example, elementary chemistry "are so well established that it would be pedantic to use the word 'probably' whenever we mention them", although technically this would be the correct modal qualifier. Toulmin finds this attitude disingenuous. In *Introduction to Logical Theory* (1952), P.F.Strawson, according to Toulmin, "acknowledges the divergence between the theoretical analysis of our critical categories given by logicians and the manner in which we employ them in practice", and he accepts that "they strike a non-philosopher not just as pedantic but as repugnant" (Toulmin, S.E. (1958) *Uses of Argument*. p.158). He tries, therefore, to find a way of allowing scientific arguments and conclusions "to claim a cogency, strength and validity of their own kind" (ibid.). However, Strawson has already distinguished between mathematics and science, in terms of *deduction* and *induction*, without making it clear which of the ideas conflated within these categories is intended to apply. This, in Toulmin's opinion, is the source of his trouble; scientists are entitled to aspire to the production of valid *deductive* arguments, but they would not be seeking to have scientific arguments classed as "analytic".
3. Toulmin finds fault with what he regards as Rudolf Carnap's "extreme" views on *probability*, as contained in Carnap's *Logical Foundations of Probability* (1950). Since, for Carnap, probability expresses a logical relationship and logical relationships depend on the meanings of sentences, i.e. semantics, "the divergence between Carnap's analysis of probability and our practical notions is clear enough" (Toulmin, S.E. (1958) *The Uses of Argument*, p.161) Toulmin underlines this divergence by pointing out that, for Carnap, the verification of a *probable* forecast based on an assembly of facts would not depend on the checking of subsequent facts since the forecast really represents a semantic relation (ibid.).
4. The difficulties that arise when one measures arguments in the experimental sciences against an analytical ideal, arise even more sharply, according to Toulmin, when one comes to arguments concerning morals. In this regard, he turns his attention to R.M. Hare's *The Language of Morals* (1952). As far as Toulmin is concerned, Hare is unimpressed by the kind of argumentation that Toulmin has been developing in a variety of fields. Arguments about morals are substantial

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arguments and may involve a type-jump from an assemblage of facts to a decision. This, of course, could never be an analytic progression, and “the only genuine rules of inference, in his (i.e. Hare’s) view are statements about the meanings of words; and the only acceptable arguments are, accordingly, analytical ones” (Toulmin, S.E. (1958) *The Uses of Argument*, p.162).

5. Toulmin adopts a more polemical approach to A.N. Prior’s *Logic and the Basis of Ethics* (1949), finding in it an implication that the vision of philosophers is clearer than that of non-philosophers, which allows something to be a commonplace among philosophers which would be repugnant to ordinary people. Prior, according to Toulmin, sees a “Great Divide between the formal logician and the practical arguer” (Toulmin, S.E. (1958) *The Uses of Argument*, p.163) Toulmin accepts that decisions about morals cannot be, logically, in the sense of “analytically”, derived from premisses in which our obligations are not mentioned. Non-philosophers, as well as philosophers, would agree about that. But, according to Toulmin, the implication that, in the opinion of logicians, all arguments about morals are deficient, would be “grossly repugnant to the non-philosophical” (ibid.).
6. Toulmin, S.E. (1950) *Reason in Ethics*. Cambridge University Press.  
.. (1953) *Introduction to the philosophy of Science*. Harper.  
.. (1956) Principles of Morality, *Philosophy* Part 31, pp.142-153.
7. Wittgenstein, L., (1953) *Philosophical Investigations*. 3<sup>rd</sup> ed. 2001 Blackwell.  
Toulmin would sympathise with the notion that language has many uses and that it derives meaning from its various functions.
8. Austin, J. L.. Toulmin cites Austin’s paper “Other Minds” in reference to Ch.2. on “Probability” in *The Uses of Argument* (p.260). Austin’s work in *How to do things with Words* (1962) would have a significant effect on the understanding of language and argumentation.
9. Ryle, Gilbert. Toulmin credits Ryle as the source of much of what he has had to say about argumentation, including “inference tickets”.
10. Ayer, A.J. (1936) *Language, Truth and Logic*. Penguin, p.110.
11. Moore, G.E. (1903) *Principia Ethica*. Cambridge University Press.
12. ibid., viii.
13. ibid. p.188.
14. Prichard, H.A. (1912) Does Moral Philosophy Rest on a Mistake? *Mind* 21, pp.21-37.
15. ibid. p.36.
16. Ross, W.D. (1930) *The Right and the Good*. Oxford University Press. rep. in *Ethics* (2002) Cahn, S.M. and Markie, P. (eds.) Oxford University Press.
17. ibid. p.485.
18. Stevenson, C.L. (1937) The Emotive Meaning of Ethical Terms. *Mind*, vol.46 pp.14-31.
19. ibid. cf.pp18ff.

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20. Ayer, A. J., (1936) *Language , Truth and Logic*. Penguin, p.110
21. Toulmin, S.E., (1950) *Reason in Ethics*. Cambridge University Press, p.22.
22. *ibid.* p.26.
23. *ibid.* p.27.
24. *ibid.* p.29.
25. *ibid.* p.35.
26. *ibid.* p.37.
27. *ibid.* p.41.
28. Ayer, A.J. (1936) *Language, Truth and Logic*. Penguin.
29. Toulmin, S.E., (1950) *Reason in Ethics*. Cambridge University Press, p.46.
30. *ibid.* p.51.
31. *ibid.* p.55.
32. *ibid.* p.67.
33. *ibid.* p.80.
34. *ibid.* p.93.
35. *ibid.* p.101.
36. *ibid.* p.129.
37. *ibid.* p.137.
38. *ibid.* p.139.
39. *ibid.* p.142.
40. *ibid.* p.160.
41. Not everybody was satisfied with Toulmin's notion of an "established maxim of conduct" as a guide to action. Tore Nilstun, in *Moral Reasoning: A Study in the Moral Philosophy of S.E. Toulmin* (1979), Lund, p.62, says: "Personally I cannot accept some of the consequences of Toulmin's normative relativism. In South Africa, for example, racial discrimination is a commonly accepted social practice, at least among the members of the white community. Arguments in accordance with the deontological rules of inference would obviously lead to the conclusion that many racial actions performed by white South Africans were morally right".

This is to miss what Toulmin has to say about the "moralist", the catalyst for change which every society needs. This is not necessarily a professional ethicist; it is, rather, an agent who can identify with and be an advocate for members of society in their efforts to effect change, remove needless suffering and achieve maximum harmonisation of society. This agency may be parliamentary democracy, a free press, a lively theatre. Frequently, however, when these conditions do not obtain, there will be a need for the personal moral leader who can mobilise opposition to injustice and oppression. In the event such was the outcome in South Africa. This, however, does not deal with Toulmin's alleged relativism, which is beyond the scope of this

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- analysis. The focus in this study is on his mode of argumentation.
42. Toulmin, S.E. (1950) *Reason in Ethics*. Cambridge University Press, p.18.
  43. Nilstun, Tore (1979) *Moral Reasoning: A Study in the Moral Philosophy of S.E. Toulmin*. Lund, p.61.
  44. Toulmin., S.E. (1950) *Reason in Ethics*. Cambridge University Press, p.38.
  45. *ibid.*, p.41.
  46. *ibid.*, p.117.
  47. Toulmin, S.E. (1953) *The Philosophy of Science: An Introduction*. Harper.  
Toulmin would return to deal with the aims of Science in *Foresight and Understanding* (1961), Hutchinson.
  48. Toulmin, S.E. (1953) *The Philosophy of Science: An Introduction* Harper, pp.40/1.
  49. Cf. reviews of Toulmin's *The Philosophy of Science: An Introduction*, by Nagel, E., *Mind*, New Series, Vol.63, No.251, (Jul.1954), pp.403-412.  
Lovell, D.J., *Science*, New Series, Vol.120, No. 3108 (Jul.23<sup>rd</sup> 1954).  
Brown, G.B., *The British Journal for the Philosophy of Science* Vol.5, No.19 (Nov. 1954), pp.268/9.  
Dingle, H., *Philosophy*, Vol. 30, No.112, (Jan. 1955), pp.78-81.
  50. Toulmin, S.E., (1953) *The Philosophy of Science: An Introduction*. Harper, pp.18ff.
  51. *ibid.*, p.25.
  52. *ibid.*, p.33.
  53. The warrant as substantive would be a central feature of the Toulmin model of argument which he developed subsequently in *The Uses of Argument* (1958).
  54. Toulmin, S.E., (1953) *The Philosophy of Science: An Introduction*. Harper, p.42.
  55. *ibid.*, p.43.
  56. *ibid.*, pp.48/9.
  57. *ibid.*, p.59.
  58. *ibid.*, p.93.

## Chapter 2. The Toulmin Model

### Putting Logical Theory in its place

The central objective of the Toulmin project is to deal with arguments, where necessity and entailment are not applicable because such arguments arise in areas of experience, where certainty of conclusion is not normally available. He makes it clear that it is the traditional syllogism that is unsatisfactory due to its inability to deal adequately with the pragmatics of real arguments and material from a wide range of human activities and observations. He makes no secret of his conviction “that a radical re-ordering of logical theory is needed in order to bring it more nearly into line with critical practice, and our justification will come only if the distinctions and objections insisted on here bring such a re-ordering nearer.”<sup>1</sup>

The “radical re-ordering” will require clarification of terms, specification of distinctions in linguistic usage, “a clearing of the undergrowth”, to use Toulmin’s phrase, of historical accretions and assumptions (e.g. the acceptance of the analytic argument as the paradigm argument, the pre-eminence accorded to mathematical calculi as the ideal of rationality). This preparatory work would involve Toulmin in intellectual disputes with contemporaries and disagreements with the work of predecessors. Toulmin was embarking on a project to challenge the hegemony of formal deductive logic and to dislodge the mathematical standard as the ideal of precision and definiteness to which logic/argumentation should aspire. In the event, it led to what was, for many, a redefinition of logic and, for Toulmin, a schema designed to render the discipline of argumentation “fit for purpose” in the conduct of human affairs, whether in ethics, science, law, medicine, politics, aesthetics or any other area of operation where a proponent might have to defend a substantial claim.

A consideration of some of the principal clarifications and definitions which Toulmin offers as preliminary to, and in the course of, his treatise, will facilitate an appreciation of the significance of the central element, i.e. a model of argumentation, and will ensure that it is seen as an organic instrument adaptable to challenge and applicable to a wide range of areas of discourse, rather than an inert mechanical schema.

### **Fields of Argument and Modal Qualifiers**

For Toulmin, logic has to do with the justification of claims/conclusions we have put forward and the arguments we offer in support of any particular claim. He envisages “candidate” conclusions which we might rate as “possible”, “necessary” or “probable”, i.e. he suggests that any argument can be set out in a common form, whether the subject matter is a question of physics or mathematics, ethics or law, or an everyday matter of fact. The qualification of conclusions as “possible”, “necessary” or “probable”, i.e. the use of these *modal* terms to indicate reservation or certainty, will apply as regards the strength or *force* with which a claim or conclusion in any field is being advanced, whereas the *grounds* or *criteria* used to justify the modification of the claim will depend on the *field* of argument in question. The force, or degree of certainty, that is to say, behind the claim, will be *field-invariant*, whereas the *criteria* relied on to assess the degree of certainty will be *field-dependent*.

While he does not set out a specific definition of *fields* of argument Toulmin informs us that “[t]wo arguments will be said to belong to the same field when the data and conclusions in each of the two arguments are, respectively, of the same logical type.”<sup>2</sup> He cites proofs of Euclid’s theorems, calculations of the tides, classification of natural creatures, and argument supporting the case against a law-breaker, as examples of different fields. His list of seven is not intended to be exhaustive.

Arguments in different fields may have a common lay-out, and the modal qualifiers of conclusions/claims, e.g. “this must be the case” or “this cannot be the case”, will be common to different fields.<sup>3</sup> The kind of evidence or support adduced, however, i.e. the *criteria* by which to judge the strength of the argument, will depend on the logical type of the argument in question, and will be relevant to a particular field. The assessment of the relative cogency or stringency of arguments will be *intra-field* rather than *inter-field*; i.e. the argument leading to a conviction in a law-court will not be compared, in terms of stringency, with the argument which establishes the conclusion that the square on the hypotenuse of a right-angled

triangle is equal to the sum of the squares on the other two sides. This is one of the factors which sets arguments in everyday life apart from those mounted by professional logicians, who, according to Toulmin, had always aspired to providing a single structure of argument and a single set of criteria of appraisal.

### **Probability**

Some of the preparatory work for his argument model had been done independently of *The Uses of Argument*. Toulmin had previously been involved in a dispute concerning the concept of *probability*. Because, however, probability, to a greater or lesser extent, was a central feature of the argument scheme which he was developing, it was necessary to present a detailed analysis of *probability*, and so provide an explanatory basis.

Toulmin locates “probably” in the company of “modal terms”, i.e. the terms by which we underscore or qualify assertions, promises or judgments when, for example, we declare that “something is necessarily the case” or “may possibly be the case”, or “I shall definitely, or possibly, arrive before noon”. Within the spectrum of qualification extending from “necessarily” to “possibly”, “probably” occurs as a modification expressing a degree of likelihood, and the more cogent the support, short of certainty, which one can adduce in favour of a point of view or the forthright making of a promise, the higher the degree of probability one can claim for one’s assertion. If, from a range of possible outcomes, we choose one as “more probable” than the others, we are advancing this with more confidence and we are representing this to our audience as the more trustworthy outcome.

Toulmin takes others to task for promoting versions of probability which he finds misleading. He disagrees with the suggestion that “probability” as an abstract noun can be defined, and claims that much effort has been wasted in the attempt. Difficulties have arisen for commentators, he claims, because of their failure to recognise “probable” and its cognates as modal terms, and has led to a futile quest for a designatum for “probability”. One of the principal reasons for philosophers losing their way in the matter of modal terms (including Kneale and Carnap) has been their anxiety to avoid psychologism, i.e. any suggestion that probability has to

do with a proponent's strength of belief, which would, therefore, be a subjectivist concept. Toulmin insists that Kneale has been mistaken in not distinguishing between "what an utterance positively states" and "what is implied in it".<sup>4</sup> If, for example, a forecaster says, "It will probably rain to-morrow", she is talking about the weather, not her feelings, although one can infer that she has a belief about the weather which is implied in the statement. For Toulmin, "To say 'probably' is to assert guardedly, and/or with reservation that  $p$  ; it is *not* to assert that you are tentatively prepared to assert that  $p$ ."<sup>5</sup> Carnap, according to Toulmin, is even more strongly opposed to any taint of psychologism. In Carnap's view, "logic makes statements about logical relations".<sup>6</sup>

But Toulmin finds this unsatisfactory. For him, reference to justified beliefs, actions, policies, etc., are unavoidable if one is to do logic at all, but this is not to claim that *thinking* is the subject-matter of logic. Toulmin's firm assertion on the matter has wider application than merely its reference to Carnap and probability:

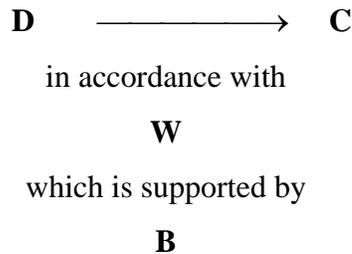
The laws of logic are not generalisations about thinkers thinking, but, rather, standards for the criticism of thinkers' achievements ... Logic does not describe a subject matter and is not about anything ... at any rate in the way in which actual sciences such as mineralogy and psychology are about minerals or the mind.<sup>7</sup>

Toulmin identifies what he regards as a further fault with Carnap's view, i.e. the latter's contention that all probability statements outside the scientists' are vague and inexact. This was of particular significance for Toulmin, engaged as he was in the development of a system of argumentation at the heart of which would be a departure from the formal necessity/validity of traditional logic, and in which, as a result, probability and other modal indicators would play an important part. This would not, in his opinion, result in worthless approximations or estimations; as it would be delivering the most conclusive outcomes possible in areas of experience where certainty would be frequently unattainable, he would be stressing the need for the greatest rigour possible in the field in question. While he is prepared to concede

the “comparative precision” achieved in the sciences by the use of mathematics, he insists that “statements expressed in numerically exact terms are not the only ones to be perfectly definite and unambiguous.”<sup>8</sup> We are forced by the nature of evidence or supporting material to “guard” our assertions by the use of modal terms up to “very probably” when circumstances allow us to go no further, and this standard will usually be adequate for acceptance. In the area of predicting events which tend to recur with some regularity, we may be able to achieve precision through the use of mathematics which will not be available in other fields. However, according to Toulmin, this is not logically significant; the *force* of the probability statement remains, while the *criteria* of the supporting material are enhanced. This increases the degree of acceptability, and, seen in this light, “the mathematical treatment of probability represents a natural extension of the term’s more elementary and everyday uses”.<sup>9</sup>

### **Analytic and Substantial Arguments**

This is the most significant distinction that Toulmin makes in his monograph on argumentation, and is at the heart of the radical re-ordering of logic and inference which he wishes to introduce. He sets down the initial elements of his “layout” of an argument as a Claim, (C), supported by Data, (D), in accordance with a Warrant, (W), which will be justified by Backing, (B):



The “warrant” is a law-like statement which justifies the drawing of conclusions in accordance with it, and Toulmin provides much specificatory detail of this element. The “backing” will be factual information, statistical, statutory or taxonomical, etc., which will legitimise the adoption of the warrant.

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Toulmin illustrates the significant difference between *analytic* and *substantial* arguments, using the example of the conclusion about the colour of Ann's hair as follows:

- (D) Anne is one of Jack's sisters
- (W) Any sister of Jack's will have red hair.
- (C) So, Anne has red hair.

Here, the conclusion, (C) (So, Anne has red hair), is reached by the use of data, (D) (Anne is one of Jack's sisters), in accordance with a warrant, (W) (Any sister of Jack's *will have* red hair). The acceptance of the permissive warrant, "Any sister of Jack's will have red hair", allows the conclusion, sight unseen, that Ann has red hair. The argument could be formulated to show the conclusion drawn, in accordance with the *backing* as follows:

- (D) Anne is one of Jack's sisters
- (B) Each one of Jack's sisters has (been checked individually to have) red hair.
- (C) So, Anne has red hair.

This latter version, where (B) is an empirical fact, shows clearly that the sequence of statements, if it can be classed as an argument at all, is tautological; the backing for the warrant "includes, implicitly or explicitly, the information conveyed in the conclusion itself".<sup>10</sup> This kind of argument, he calls "analytic". Genuinely analytic arguments are exceptional in practice, according to Toulmin, and logicians should have been less inclined to use them as a model for other kinds of real arguments, i.e. *substantial* arguments. These are the arguments of common experience where, for instance, we support claims about the future with information from the past and present, where we reach conclusions about others' legal status or state of mind, on the basis of the laws of the country or things that they say, where we support moral and political positions, scientific theories or aesthetic judgments by "in each case producing as grounds for our conclusion statements of quite other logical types than

the conclusion itself.”<sup>11</sup>

Toulmin came to the writing of *The Uses of Argument* (1958) by way of *Reason in Ethics* (1950) and *Introduction to the Philosophy of Science* (1953).<sup>12</sup> It is not surprising, therefore, that when he came to analyse the overall topic of reasoning and argumentation, his approach would owe much to his understanding of the work of scientists, especially that of those engaged in practical scientific work. This is very clearly stated in his intention, when introducing “Working Logic and Idealised Logic” in *The Uses of Argument*, to “proceed in the manner of a scientist”; that is, he will begin by stating his hypothesis:

The categories of formal logic were built up from a study of the analytic syllogism; that this is an unrepresentative and misleadingly simple sort of argument, and that many of the paradoxical commonplaces of formal logic and epistemology spring from the misapplication of these categories to arguments of other sorts.<sup>13</sup>

For Toulmin, the great divide in argumentation terms is between analytic arguments and “other sorts”; i.e. between the arguments of formal logic where the information contained in the conclusion must have already been contained in the premisses, and arguments of an everyday kind, i.e. substantial arguments, that are grounded in a wide variety of human experiences and are intended to lead to new knowledge. The crucial divergence, according to Toulmin, is between the approach of those engaged in the practical business of argumentation and the compilers of text-books on formal logic. Among the differences is the fact that the former would consider the standards for judging the soundness and strength of arguments to be “field-dependent”, whereas the logical theorists would see them as being “field-invariant”. Furthermore, according to Toulmin, whereas any warrant-using argument (where an existing, acceptable premise is used to infer a conclusion) can be considered a deduction, formal logicians insist that this can be applied only to an analytic argument.

He hypothesises that logicians, following Aristotle, adopted the analytic syllogism as the pre-eminent standard of argumentation model. This can be seen to

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be formally valid: it is warrant-using; its conclusions are necessary; and it uses what came to be established as logical technical terms, e.g. quantifiers or logical functors such as “all”, “some”, “or”, “and”, “if”, “then”, etc. For Toulmin, a crucial distinction between the analytic model and substantial arguments was the use in the paradigm model of the major premise form “(all, some, or no) A’s are B’s” as an inference-warrant when such a formulation leaves it unclear as to whether it is to be taken as a warrant or the backing for a warrant.<sup>14</sup>

If, then, the term “deductive” was applied to this analytic model which has conflated in its definition the features listed above, and it was specified as the standard to be achieved by arguments of all sorts if they are to gain full acceptance, certain consequences are inevitable. Substantial arguments will hardly ever measure up to the standard set. Conclusions will never follow “necessarily” as there will be no *entailment*; the use of “possible”/“impossible” will be defined in analytic terms as “consistent”/“inconsistent”, and this will signal a departure from our ordinary use of language. The “logical” definition of “necessary”, “possible”, “impossible” and other modal qualifiers will be defined in such a way that the logical outcomes of the analytic syllogism will depend on semantic relations. This will not accommodate, or be accommodated by, the substantial argument, and, taken further, it can be seen that in substantial arguments the conclusions cannot *logically* follow, even with “probability”, as we would ordinarily understand the term.

This, according to Toulmin, is what one would expect to follow from the adoption of the analytic syllogism as the paradigm structure for all arguments: “The only arguments we can fairly judge by ‘deductive’ standards are those held out as and intended to be analytic, necessary and formally valid. All arguments which are confessedly substantial will be ‘non-deductive’ and by implication not formally valid”.<sup>15</sup> In establishing his hypothesis, he makes reference to the positions of contemporary logicians. Toulmin quotes William Kneale’s claim that even though the generalisations of elementary chemistry are so well established that it would be “pedantic” to describe them as “probable”, yet they cannot enjoy the certainty associated with being self-evident or “demonstrated by conclusive reasoning”.<sup>16</sup> Peter Strawson, according to Toulmin, recognising that in the view of logicians,

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scientific arguments, not being analytic, are logically inferior, suggests that they be judged by their own standards. But he has created the initial difficulty by contrasting scientific and mathematical arguments in terms of “inductive” and “deductive” reasoning without specifying which of the terms conflated within “deduction” is intended to be operative. If, Toulmin suggests, one substituted the translation “analytic” for “deductive” and “scientific” for “inductive”, in Strawson’s statement, “[o]f course inductive arguments are not deductively valid; if they were they would be deductive arguments. Inductive reasoning must be assessed for soundness by inductive standards.”<sup>17</sup> The result is: “[o]f course, scientific arguments (being substantial) are not analytically valid; if they were they would be analytic arguments. Scientific reasoning must be assessed for soundness by scientific standards”.<sup>18</sup> This, clearly, is entirely acceptable and rejects the tyranny of the analytic paradigm. However, substituting other “conflated translations” for “deductive”, such as “formally valid”, in the same passage, we arrive at the conclusion that “scientific arguments are not formally valid”, which, Toulmin is convinced, would not be acceptable to scientists.

Toulmin reads Carnap’s concept of probability as implying that the extent to which evidence supports theories is a matter of semantics, quoting from Carnap’s *Logical Foundations of Probability*: “The problem whether and how much [an hypothesis]  $h$  is confirmed by [evidence]  $e$  is to be answered merely by a logical analysis of  $h$  and  $e$  and their relations”.<sup>19</sup> Toulmin cites as an illustration of this semantic relation a claim by Carnap that a forecast of probable weather conditions did not need verification by factual observation, remarking on the extent to which this position differs so greatly from ordinary practice and the low esteem which such an attitude would accord to arguments which rely on substantial support for their conclusions.

The foregoing references to Kneale, Strawson and Carnap underline the problems that arise when one compares the arguments which are normal in the sciences with those governed by the analytical ideal. However, problems arise also in the area of moral judgments and arguments in their support. R.M. Hare, for instance, will not consider a moral principle, which allows “a substantial step in

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argument” to be a rule of inference. According to Toulmin, in Hare’s view, “[t]he only genuine rules of inference are statements about the meanings of words; and the only acceptable arguments are accordingly analytic ones.”<sup>20</sup> Toulmin finds a doctrine similar to Hare’s in A.N. Prior’s *Logic and the Basis of Ethics*: “In our own time the perception that information cannot be logically derived from premises in which our obligations are not mentioned has become a commonplace, though perhaps only in philosophical circles.”<sup>21</sup> Toulmin agrees with one possible interpretation of “logically derived”, i.e. “analytically derived from”. However, he strongly disagrees with the sentiment if “logically derived” is to be the equivalent of “properly drawn from”. This would mean that logicians regard all moral arguments as logically deficient, but, in Toulmin’s view, the fact that a “type-jump” is necessary for the step from reasons to decisions does not invalidate an argument.

The overall impression created by the examples cited by Toulmin is that logicians, by clinging to their ideal of analyticity, and including this in a definition of deduction, have opened an intellectual gap between themselves and those who produce compelling arguments in support of a point of view, whether in medicine, politics or aesthetics, or in any field where mathematical or analytical certainty is not available. As far as he is concerned, he has established his hypothesis.

The use of the analytic as the standard by which to judge all arguments has misled logicians down a cul-de-sac, where the notion of a claim being supported by adequate evidence, i.e. a substantial argument, can never achieve acceptability. This is at the heart of what Toulmin set out to counter in *The Uses of Argument*, and why he found it necessary to replace the tri-partite syllogism with an arrangement which provided a more candid outline of the case being made. This arrangement, which removed the ambiguity which he claimed to have identified as inherent in the syllogism, made it possible, in Toulmin’s opinion, to create and assess satisfactorily, arguments which were not analytic but whose conclusions could be worthy of a high level of acceptability. The level of acceptability of such conclusions would be indicated modally after the claim, its support, its inference rule (warrant) and possible reservations had been taken into account.

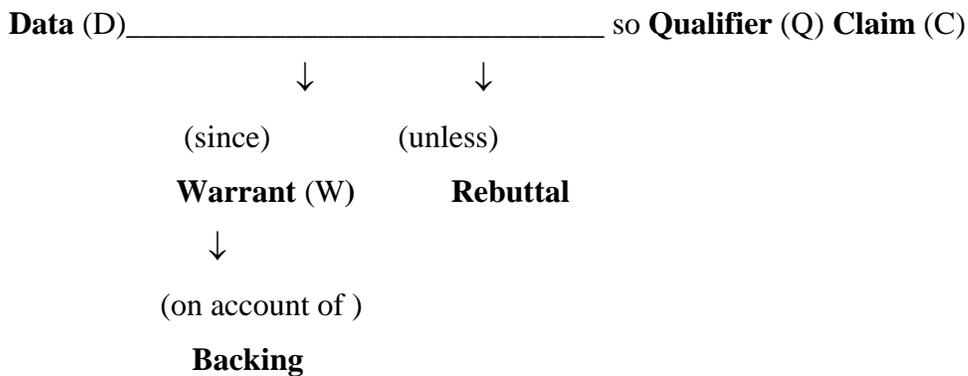
Since the time of Aristotle, arguments had been set out in a simple form, i.e. as

major premise, minor premise, “so”, “necessarily”, conclusion. But Toulmin questions whether the simplicity of this form has been gained at too great a sacrifice of clarity and candour. Using the analogy of jurisprudence as his benchmark, he details the great variety of utterance that is part of the legal system, and insists that “[i]f we are to set our arguments out with complete logical candour, and understand properly the nature of the “logical process”, surely we shall need to employ a pattern of argument no less sophisticated than is required in the law”.<sup>22</sup>

### The Toulmin Model of Argumentation

The foregoing considerations had provided the motivation for the “Toulmin model of Argumentation”, which he intended as a replacement for the traditional syllogism, and he deliberately chose the most common form with a singular minor premise, a universal major premise and a conclusion, as the foil by which to demonstrate the greater clarity of the system which he devised as follows:

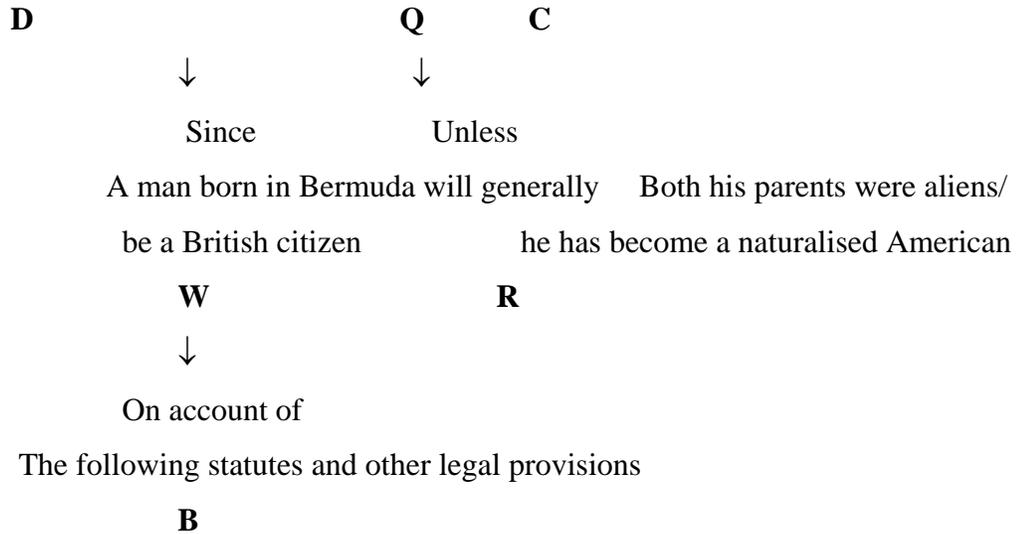
A claim, (C), is supported by data, (D), *in accordance with* a warrant, (W). Where the claim is not established *necessarily*, this will be modally signalled by a qualifier, (Q); where the warrant is questioned, a backing, (B), for this “hypothetical, law-like, bridging statement”, will be provided. In circumstances of less than total knowledge (due to facts as yet unspecified or unverified), where it is possible that the stated warrant will not apply, a reservation by way of potential rebuttal, (R), will be included in the layout:



Toulmin’s real-life example is instantiated in the theoretical framework in the

following manner:

Harry was born in Bermuda \_\_\_\_\_ so, presumably, Harry is a British subject



As a preliminary to identifying the weakness, e.g. the ambiguity of the traditional syllogism referred to above, Toulmin asks, “What corresponds in the syllogism to our distinction between data, warrant and backing?”<sup>23</sup> The syllogism, according to Toulmin, contains a “hidden complexity”, and he proceeds to demonstrate this by separating out the dual content of a major premise. For this purpose, he chooses the form “Scarcely any A’s are B’s”; this will make his point most clearly, but with appropriate modifications the results will apply to the other major premises: “All A’s are B’s”; “No A’s are B’s”; “Almost no A’s are B’s”.

The statement, “Scarcely any Swedes are Roman Catholics”, may be a statistical report, the equivalent of “the proportion of Swedes who are Roman Catholics is less than (say) 2%”, the kind of statement that might be employed as *backing*, (B), for an inference warrant.<sup>24</sup> Simultaneously, it may serve as an inference warrant when expanded to the more candid statement, “A Swede can be taken almost certainly not to be a Roman Catholic”. If we place what Toulmin calls “quasi-syllogistic” arguments, embodying those expansions (in a “tidied-up” form), side by side, we have the following:

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- A (D) Petersen is a Swede.  
(W) A Swede is almost certainly not a Roman Catholic.  
So, (C) Petersen is almost certainly not a Roman Catholic.  
and
- B (D) Petersen is a Swede.  
(B) The proportion of Roman Catholic Swedes is minute.  
So, (C) Petersen is almost certainly not a Roman Catholic.

A similar expansion of the other forms, “All...” or “No...”, will demonstrate the same fact, i.e. that the conclusion of A (the first of the pair) will, in Toulmin’s terminology, depend on an inference warrant, while that of B will depend on the backing for the warrant. This will be concealed in the usual form of the traditional syllogism, whereas in Toulmin’s formulation all ambiguity will be removed and an argument of greater candour will follow. This will mean, for example, that when the form “All A’s are B’s” is used in its expanded form, “An A can certainly be taken to be a B” as a *warrant*, the *force* of this statement will authorise the step from data to conclusion regardless of the field in question, whether it is ethical, scientific, etc. On the other hand, the expansion of the statement, “All A’s are B’s”, to express the *backing*, will depend, not on the force of “All”, but on the *nature of the field* in which the argument is located. Making provision for the specific form, whether the backing is numerical, legal (with conditions), taxonomical (with exceptions) or modally assertive, the outcome will be to make as clear as possible, the field-dependence of the backing for the warrants we are using.

Furthermore, the traditional tri-partite layout of arguments (two premisses and a conclusion), by creating “an exaggerated appearance of uniformity”, as between arguments in different fields, may hide the significant differences between the elements referred to as *premisses*.<sup>25</sup> Consider the following syllogism:

No Swedes are Catholics;

Petersen is a Swede;

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Petersen is not a Catholic.

If we see the first (major) premise as the *backing* for a warrant, then both major and minor premisses are simply statements of fact, although, in light of what we perceive as their function, it does not seem quite correct to call them both *premisses*. If, on the other hand, we see the major premise as a *warrant*, then the radical difference between the premisses becomes obvious:

A “singular premiss” (i.e. minor) expresses a piece of information *from* which we are drawing a conclusion, a “universal premiss” (major) now expresses, not a piece of information at all, but a guarantee *in accordance with* which we can safely take the step from our datum to our conclusion.<sup>26</sup>

The clarity which this brings to the process of inference justifies the introduction of the separate elements, datum, conclusion, warrant and backing. The insistence of logicians on using the formulaic “All A’s are B’s”, by distorting the natural idiom, has helped to conceal some of the distinctions which Toulmin considers crucial. He offers several examples of the normal formulation of “All A’s are B’s”, viz. “Every single A is a B”, “An A will be a B”, etc., and maintains that if we took careful account of “Every A” and “Not a single A”, on the one hand, and “Any A” or “An A”, on the other, we would be aware the former pair, statistical in tone, expressed backing for a warrant, whereas the permissive overtone of the latter pair signalled the presence of a warrant.

The use of the “All” formula can be misleading in the field of morality, where conflicting principles frequently arise and where, instead of “*All* lying is reprehensible”, the more idiomatic “Lying is reprehensible” would allow scope for the inevitable exceptions and avoid having to adopt an absolutist position which must then be defended against alternative justifiable points of view.

The notion of formal validity attaching to the traditional syllogism is a further source of obfuscation which can be avoided or dissipated by employing the Toulmin

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model. It has been conventionally held that the syllogism yields its necessary conclusion as a result of the re-arrangement of its terms, “from shuffling the parts of the premisses and arranging them in a new form”.<sup>27</sup> Toulmin invites his reader, keeping in mind that the focus of interest is practical, real argument, to look at this notion of formal validity in the light of the distinction he has made between the “two aspects” of the universal premise: “All A’s are B’s”, as it displays its lack of candour which Toulmin’s analysis uncovers in the following example:

X is an A;  
All A’s are B’s;  
So X is a B.

If this is expressed in the Toulmin manner, it becomes

X is an A;  
An A is certainly a B; so X is certainly a B.

This looks like a formally valid argument, i.e. the conclusion is reached by “shuffling” the terms of the premisses. But, according to Toulmin, it is quite clear that an argument from any field, with the correct warrant and suitable phrasing, can be expressed in the form, “data; warrant; so, conclusion”, and be declared valid as a result of its form. Take, for example, the argument:

Petersen is a Swede;  
A Swede is certainly not a Catholic;  
So, Petersen is not a Catholic.

The form of this argument, with its rearrangement of the terms, lends it formal validity, which no longer applies if the warrant, “A Swede is certainly not a Catholic”, is replaced by its factual backing:

Petersen is a Swede;

The recorded proportion of Roman Catholic Swedes is zero.

So, certainly, Petersen is not a Roman Catholic.

This is a compelling argument, but “shuffling” of the terms is not applicable, and as a result, formal validity cannot be claimed. Of course as far as Toulmin is concerned, the conclusion in the previous argument (D; W; so, C) is not *really* a consequence of its elegant form, but this arrangement, with its attendant formal validity can never apply to arguments of the latter variety, i.e., D; B; so, C. The result of this expansion of the syllogism, with a view to providing greater candour, leads him to the conclusion that “[o]nce we bring into the open the backing on which (in the last resort) the soundness of our arguments depends, the suggestion that validity is to be explained in terms of “formal properties”, in any geometrical sense, loses its plausibility.”<sup>28</sup>

### **Toulmin and Deduction**

For Toulmin, a very significant departure from the idiomatic use of terms applies to how logicians understand the notion of deduction. In the preface to *The Uses of Argument*, he asserts that the only originality in the treatise is his demonstration that “one must reject as confused a conception of ‘deductive inference’ which many philosophers have accepted without hesitation as impeccable”.<sup>29</sup> Dealing with the idiomatic use of deduction, he draws on the insights of G. Ryle, as he does in other aspects of his work on logic and inference.<sup>30</sup> He divides arguments into two categories, *warrant-using* (a conclusion is drawn in accordance with an established warrant) and *warrant-establishing* (the kind that one might find in a scientific paper). These distinctions would, in ordinary idiom be referred to as “deduction” and “induction”, i.e. deduction would be seen as the application of an acceptable warrant to given information to arrive at a new conclusion. Toulmin looks to Newton for support for his contention that “a general

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statement in physical theory must be construed, not as a statistical report of the behaviour of a very large number of objects but rather as an open warrant or principle of computation”.<sup>31</sup> Logicians, on the other hand, would reserve the term “deduction” for “arguments in which the data and backing positively entail the conclusion”, i.e. where to accept the data and backing and deny the conclusion would be a contradiction.<sup>32</sup> However, astronomers have continued to use this kind of deduction, even though it may involve a “type-jump” of applying data from the past and present to the future.

It is this acceptance of the practitioners’ usage, rather than that of theoretical logicians, with their insistence that ordinary language must be made fit for purpose by formalisation, that led to his attempt at a re-definition of logic and epistemology. From his point of view, symbolic logic is *part* of logic; logical form is the proper form in which an argument is set out, so that it can be assessed for cogency and acceptability, not the form which by itself, as with the classical syllogism, guarantees its validity. Further, while the *force* of argument will be common across a range of disciplines/fields (“field invariant”), the criteria by which the worth of an argument is to be judged, will be peculiar to the field in question (“field dependent”). He has attempted to replace the “frozen calculi” of the traditional formal logicians, which demanded that all arguments aspire to the analytic standard, so that their conclusions will be *necessary*, with a model of argumentation which would lay bare the separate elements and their functions which had been obscured by the use of two premisses, the functions of which were very different from each other.

If, then, the guarantee of validity resulting from *form* is not built into our arguments, if a re-shuffling of the terms to achieve the traditional form so that an entailment ensues is not possible, must we accept, even reluctantly, conclusions resulting from the strength and relevance of our arguments as the best we can do, being aware that this may leave us with permanent scepticism, leading, at best, to pragmatism?

### **Logic and Epistemology**

The main distinction that Toulmin has been drawing in *The Uses of Argument* is that between analytic and substantial arguments. The former, he insists, are comparatively rare, while the latter are the kind of arguments that we are most likely to employ in real-life situations. His response to the question posed in the previous paragraph about our being left with “permanent skepticism” is a recommendation to give up the analytic ideal when we are dealing with substantial arguments. We should regard the “type-jump” as a natural step in a substantial argument, not as a logical gulf. Indeed,

the proper course for epistemology is ... to moderate one's ambitions – demanding of arguments and claims to knowledge in any field, not that they shall measure up against analytic standards but, more realistically, that they shall achieve whatever sort of cogency or well-foundedness can relevantly be asked for in that field.<sup>33</sup>

Toulmin contends that “applied logic” should amalgamate logic and epistemology with an emphasis on the practical, rather than the theoretical. Practitioners in particular fields will enhance the methodology of the reasoning applicable to their field, as well as making substantive progress in their respective disciplines. Having dispensed with the “analytic ideal” of argument, there will be no *a priori* preference given to any specific form of argument: the demand will be to assemble the most compelling argument that the circumstances allow. As mechanical form will not be the guide to validity or worth of argument, one must keep in mind what Toulmin has asserted earlier: “In logic as in morals, the real problem of rational assessment – telling sound arguments from untrustworthy ones, rather than consistent from inconsistent ones – requires experience, insight and judgement.”<sup>34</sup>

### **Summary**

In summary, Toulmin's motivation in producing *The Uses of Argument* was to restore the connection between logic, rehabilitated in its definition, and real-life

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arguments.

Logic, by adopting mathematics, with its timeless truths as its model, had become virtually an autonomous discipline, intent on seeking internal consistency, but comparatively irrelevant to arguments in the practical spheres of experience. Toulmin sees a strong analogy between logic/argumentation and jurisprudence, where a claim is supported by evidence, and the success of the claim will depend on the strength and relevance of the evidence, rather than on the “logical form” in which the claim is set out. As with jurisprudence, there will be a proper form of layout, but this form will not be the conclusive force of the argument. It will serve, rather, to add candour to the argument, as it reveals the nature of the support being offered. The relevance of the evidence will be related to the field in which the argument is located, and support for an argument will be judged by criteria that obtain in the field in question.

Toulmin takes the traditional syllogism, with a major universal premise and a singular minor premise, as representative of the logic which, he claims, has lost touch with real-life argumentation. Apart from the fact that the *form* of the syllogism, on which validity depends, frequently distorts normal idiom, the notion of the major premise conceals a “hidden complexity” which, as he shows, is misleading as regards backing/support of the conclusion. To achieve greater “candour”, he proposes a six-part model of argument which renders transparent the *function* of each element, claim, data, warrant, backing, modal qualifier and rebuttal.

A central complaint which Toulmin advances, again having to do with ordinary use of language, is the logician’s reservation of the term “deduction” for circumstances which *entail* conclusions, even though scientists and others claim to deduce, for example, conclusions about the future on the basis of data from the present and the past. However, the greatest single error by logicians has been, in Toulmin’s opinion, to adopt the *analytic* argument (i.e. an argument in which the backing of the warrant includes the information contained in the conclusion) as the paradigm, the benchmark against which all arguments are to be assessed. This has meant that substantial arguments, however cogent, struggle for acceptability, and their proponents have to acknowledge their inherent inadequacy.

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Toulmin's recommendation is that the analytic as exemplar be dropped; that logic and epistemology merge, so that arguments are set out in proper form, and that the ideal to be pursued be the most compelling support possible for the claim being made in accordance with the standards acceptable for that sort of claim. Rather than a mere logical form guaranteeing the validity of arguments, there will be a need for "experience, insight and judgement" to establish the acceptability of claims, and this is adumbrated under Toulmin's stated position that the purpose of argument is "to establish conclusions about which we are not entirely confident by relating them back to other information about which we have greater assurances."<sup>35</sup>

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1. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.253; page nos. refer to first paperback ed. (1964)
2. *ibid.*, p.14.
3. Modal Qualifiers may be (a), assertoric, i.e. X is/not P, (b) problematic, i.e. X may/not be P (c) categorical, i.e. X must/not be P.
4. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.85
5. *ibid.*
6. *ibid.*, p.86.
7. *ibid.*, p.87.
8. *ibid.*, p.89.
9. *ibid.*, p.92.
10. *ibid.*, p.125.
11. *ibid.*, pp.124/5.
12. Toulmin returned to this topic in *Foresight and Understanding* (1961).
13. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.146.
14. The standard classical forms: a: universal affirmative: all A are B; i: particular affirmative: some A are B; e: universal negative: no A are B; o: particular negative: some A are not B.
15. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.154.
16. *ibid.*, p.155. cf. Kneale, W., (1949) *Probability and Induction*. Oxford, p.21.
17. *ibid.*, p.158, cf. Strawson, P. (1952) *Introduction to Logical Theory*. Methuen, p.250.
18. Toulmin, S.E., (1958) *The Uses of Argument*. Cambridge University Press, p.159.
19. *ibid.* p.160.
20. *ibid.* p.162.
21. *ibid.*
22. *ibid.* p.96.
23. *ibid.* p.108.
24. *ibid.*
25. *ibid.* p.113.
26. *ibid.* p.114.
27. *ibid.* p.118.
28. *ibid.* p. 120.
29. *ibid.* pref.
30. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.260: “The analysis of arguments here presented owes much to Professor Gilbert Ryle”. Toulmin makes specific reference to Professor Ryle’s *The Concept of Mind* London (1940): “If, So, and Because” in

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*Philosophical Analysis* M. Black (ed.), Cornell (1950) and Logic and Professor Anderson  
*Australasian Journal of Philosophy* (1950), pp.137ff.

31. *ibid.*, p.122.

32. *ibid.*

33. *ibid.*, p.248.

34. *ibid.*, p.188.

35. *ibid.*, p.127.

### **Chapter 3. Toulmin and Aristotelian Ways of Reflecting on Reasoning: Topoi, Rhetorical Deduction and Induction**

In the preface to the first edition of *The Uses of Argument* (1958), Toulmin claims that “the arguments in it are largely unoriginal”. However, the strength of the combined arguments leads him to a conclusion not hitherto acknowledged, i.e. that we must “reject as confused a conception of ‘deductive inference’ which many recent philosophers have accepted without hesitation as impeccable.” In his previous works, *Introduction to Science* (1950) and *The Place of Reason in Ethics* (1953), Toulmin had demonstrated his commitment to the project of discovering the role of rationality in the conduct of two discrete aspects of human experience: how scientists discover and explain the facts about the universe, and how humans construct the moral framework for social harmony. Essentially, he was concerned to bring to bear on reality procedures by which new knowledge and understanding could be justified, as such, by the application of reasoning. It is, however, arguable that, in spite of his limited claim, his synthesis of others’ ideas with his own particular insights, which took form in *The Uses of Argument* (1958), entitles him to much greater credit than he seems to claim, for the developments in informal logic/argumentation.

In this chapter, I wish to place Toulmin’s achievement in the context of a significant influence on his work, even if Toulmin was not always fully aware of it, i.e. the tradition of argumentation with its roots in the work of Aristotle. This will involve identifying the extent to which the influence was direct or transformed, in the course of its development, by Toulmin’s predecessors and his own perspective. As heir to thousands of years of attempts to provide the means by which to test the efficacy of various rational approaches, especially those detailed in Aristotle’s *Organon*, Toulmin set out, in *The Uses of Argument* ( 1958 ), to develop a pattern of argumentation which would be serviceable in any field of human interest. While his motivation was primarily dissatisfaction with the forms of argumentation which had preceded him, including the classical syllogism invented by Aristotle, he was far from rejecting all of Aristotle’s work. As an indication of his own dedication to the

recovery of rationality and reasonableness in human affairs, he would claim that “because of Dirac and Wittgenstein I have a strong sense of the spirit of Aristotle’s account of practical wisdom”.<sup>1</sup>

In an interview with Gary Olson he remarked, “the entirety of my work could, in fact, from a certain point of view, be regarded as sketches towards a *novissimum organon*”,<sup>2</sup> thus claiming intellectual descent from Aristotle through Bacon; but he makes it clear, in the same interview, that, while from the seventeenth century philosophers/logicians had relied for the validity of arguments on Aristotle’s *Prior Analytics* and *Posterior Analytics*, for him, *The Rhetoric*, which he had been extolling, “has to be understood as including dialectic, topics, all those bits of the discussion about argumentation that are not analytic”.<sup>3</sup> His wish to have his work associated with that of Aristotle is indicated by his use of the opening statement of *Prior Analytics* to introduce his own *The Uses of Argument*, and is further attested to by the many references to Aristotle throughout the work.

However, addressing a conference in the Netherlands in 1990, he admitted that he had written *The Uses of Argument* without recognising its connection with the rhetorical and dialectical work of Aristotle, and had missed the point of Otto Bird’s review of it as a “rediscovery of Aristotle’s Topics” (sic.).<sup>4</sup> In 2005, Toulmin reiterated this failure of appreciation, but, having in the meantime made an intense study of the work of the Stagirite, he acknowledged that Bird was correct.<sup>5</sup>

Earlier, in the preface to the 2003 reissue of *The Uses of Argument*, he had claimed that, in the light of the point made by Bird, “If I were rewriting the book today I would point to Aristotle’s contrast between “general” and “special” topics as a way of throwing clearer light on the varied kinds of “backing” relied on in different fields of practice and argument”.<sup>6</sup> It seems that Toulmin is using the word “backing” here with the general sense of “support”, rather than with the technical meaning ascribed to it in the “Toulmin model”, where “backing” is supplementary to “warrant” in circumstances where the efficacy of a warrant is considered inadequate or unacceptable. This is significant because the *Topoi* have been defined as sources for arguments and guarantees of arguments, and it is this latter definition that would correspond to Toulmin’s “warrant”, i.e. the general or law-like statement which

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would justify taking the step from the data or grounds to the conclusion. There are further reasons to investigate more closely the relationship between the work of Aristotle and that of Toulmin: while at least on a superficial level there may appear to be correspondences (e.g. Aristotle's general and special *topoi* and different fields, as referred to by Toulmin), Otto Bird's commentary refers to *medieval* Topics, rather than those listed by Aristotle in the *Topica* and *Rhetorica*; and since Toulmin's argumentation scheme is designed to deal, in the main, with probable reasoning, it is noteworthy that there is no reference to the enthymeme, which, for Aristotle, might embody a *topos*. Intuitively, one connects the premise/conclusion structure of the enthymeme with the data/claim basic argument structure fashioned by Toulmin, whose innovation was to elaborate on that basic structure in order to provide a more transparent argument form than had been available. The matter is rendered more complicated by the fact that the most common definition of enthymeme is "a syllogism with one premise missing". Sometimes, it is even suggested that it is an incomplete syllogism because the conclusion has been suppressed. The imputation behind this definition is that the proponent of an argument has begun with a syllogism as normally defined, and, for rhetorical or other reasons, has deliberately suppressed one of its elements. Considering that the invention of syllogistic can be related to a particular era, this unrefined version can hardly be the case, since, clearly, the advancement and justification of points of view, i.e. some kind of enthymematic argumentation, must be contemporaneous with the development of language itself. In seeking, therefore, to discover the origins of the Toulmin model of argumentation in the work of Aristotle, or to establish the nature of any relationship between their work in this field, it is necessary to clarify the areas of their respective productions which would be most relevant in such a comparison.

As mentioned above, there is a *prima facie* resemblance between the basic two-statement (data/claim) argument structure with which Toulmin begins and the enthymeme as detailed by Aristotle in *The Rhetoric*; the overarching authority of the *Topos* seems to be a counterpart of the warrant, as described by Toulmin. Yet Toulmin claims to have been unaware of the connection, when reference was made to the Topics by Bird, and the latter was discovering a likeness to the much more

formalised Topics of the Middle Ages, which would have been inimical to the approach which Toulmin was intent on developing. This present study will aim to place the Topics in the relevant context of the work of Aristotle, and to relate the *topoi* of Aristotle to the doctrine of Topics analysed through medieval times following the exposition of Boethius. It will seek to identify, as accurately as possible, the nature of the enthymeme, and to find how, if at all, the Toulmin model of argumentation can be seen to be derived from, or to reflect substantially, the individual or combined elements of Aristotle's probable or plausible reasoning.

### **Aristotle's *Organon***

Toulmin, the aspirant compiler of the *Novissimum Organon*, saw himself as an heir to the *Novum Organon* of Bacon and the original *Organon* of Aristotle. The inadequacies of the instrument of reason which had held sway, especially since the "quest for certainty" revived by Descartes, were to be superseded by a new instrument, more fit for purpose in a post-rationalist world, and this *organon* would be capable of the sort of reasoning in terms of probabilities more characteristic of real-life experience. But if Aristotle's syllogistic had dominated logical thinking for more than two millennia, there were aspects of his work on reasoning and persuasion which had been neglected but which were now to be recovered with or without acknowledgement.

The *Organon*, comprising of *Categories*, *On Interpretation*, *Prior* and *Posterior Analytics*, *Topics* and *On Sophistical Refutations*, was arranged by commentators later than Aristotle as an instrument for the study and management of aspects of reality, analysis of language, construction and evaluation of argumentation, valid and invalid. While *Prior Analytics* set out the organisation of what became adopted as logic in the form of the syllogism, the fact that Aristotle recognised the relevance and value of plausible or probable reasoning is attested to by the *Topics*. There is further extensive evidence of Aristotle's commitment to reasoning on the bases of respected and respectable opinions (*endoxa*) to be found in the later work, *The Rhetoric*. If Toulmin's informal reasoning were to exhibit signs of derivation from, or having been influenced by, Aristotle's work, the most likely

sources would have been *Topics*, as part of the *Organon*, and, substantially, *The Rhetoric*.

In summary, the *Prior Analytics* is a treatise which includes a formal system of logic (i.e. syllogistic) which is primarily intended to re-organise scientific knowledge, enabling it to be expressed in the sentence form: “All/some A are /not B.” This formulation would not be adequate to deal with the majority of everyday communication.

The *Topica* is a handbook for dialectical debate, including rules for argumentation, held in an academic setting with a proponent, an opponent, a supervisor and a student audience. This kind of debate was aimed at testing answers to questions of the form “Is the world eternal or not?”, “Is the soul immortal or not?” (i.e A or ~ A ?). Such debate would start from reputable opinions or certainties and would, ideally, lead to principles of scientific knowledge by way of necessary inference. The *Rhetoric* includes rules for argumentation in, for the most part, public and/or political settings. This kind of argument, encompassing everyday critical discussions, starts from reputable opinions on matters that are contingent, may not infer with logical necessity and, thus, may reach conclusions that hold “for the most part”.

### **Argumentation based on *Topoi***

Bird’s reference to the “rediscovery” of the Topics suggests, correctly, that interest in them had been in abeyance for a considerable period of time; by the twentieth century they seemed redolent of medieval self-justifying exercises in analysis. It is to the *medieval* Topics that Bird refers.<sup>7</sup> This is significant, as the analysis and manipulation of medieval Topics represents a notable change to the development of the concept presented by Aristotle in *The Topics* and *Rhetoric*.

According to Walter Jost, the history of the topics “is notoriously slippery”, by which he is referring to the fact that the topic has been defined in a variety of ways. Nevertheless, admitting that he is simplifying the matter, he offers the following definition: “Topics are places (loci) the rhetor turns to ... or less metaphorically ... are ideas, terms, formulas, phrases, propositions, argument forms and so on that the

rhetor turns to in order to discover what to say on a given matter.”<sup>8</sup> For Aristotle, according to Kneale and Kneale, “the Topoi are standard procedures or moves that can be made in arguments on any subject”.<sup>9</sup> While this would seem to correspond to the so-called “general” Topics, McAdon demonstrates the difficulty of reducing the definition of “topic” to a straightforward statement, finding inadequate the definitions of various commentators, eg. Grimaldi’s summary of topics as “sources or loci, both particular and general to which one must have recourse in constructing probable argumentation by enthymeme in an effort to achieve *pistis*”, and illustrating the complexity of the matter by tabulating the variety of remarks about topics in *Rhetoric*.<sup>10</sup> Aristotle, in *Rhetoric*, insisting on the need for factual knowledge when advancing arguments, advises: “as appears in the *Topics*, we must first of all have by us a selection of premisses about probabilities and what is most suitable about questions that may arise ; and we must try to think out arguments of the same kind for special needs as they arise.”<sup>11</sup> While the thrust of what Aristotle intends as the function of topics is clear, he does not lay out definitively what a topic is, although he does tell us that it is an element of an enthymeme, and he says that “elements of enthymemes” and “topics” means the same.<sup>12</sup>

The topics of the middle ages, with which Bird links Toulmin’s warrant, had become well-developed features of formalised argumentation, a transformation of what Aristotle had presented, for practical purposes, in *Topics* and *The Rhetoric*. In *Topics*, Aristotle envisages a dispute between two interlocutors, and his way of proceeding is to advise the interlocutors as to how they should construct an argument or analyse the statement of the other with a view to refutation. This pattern is not followed entirely without variation: sometimes the advice is offered without an overarching reason, but the following exemplifies the technique: “If one thing is, without qualification, better than another then also the best of the members of the former is better than the best of the members of the latter; e.g. if man is better than a horse then also the best man is better than the best horse”.<sup>13</sup> In another place, the topic, understood as justification for adopting a certain attitude, is delivered in a straightforward manner, e.g. “Another commonplace rule is that what is nearer to the good is better and more desirable ; and also what more resembles the good; thus

justice is better than a just man”.<sup>14</sup> This could be exemplified by analysis of policies towards the alleviation of poverty: one view encourages the direct donation of food to people in need; the other promotes the provision of the means of producing food. Since it is agreed that the overall objective is the saving of life and restoration of health, the argumentation in favour of the latter will be seen to be stronger: the physical process of providing as well as the restoration of personal dignity is more likely to guarantee continuing health and worthwhile life.

For Aristotle, “the goal of this study (*topoi*) is to find a method with which we shall be able to elaborate syllogisms (arguments) from acceptable premisses (*endoxa*) concerning any problem that is proposed and - when submitting to argument ourselves - will not say anything inconsistent”.<sup>15</sup> Topics served the dual function of attacking and justifying arguments, especially in the context of organised contests with roles allocated to the participants, and the advice is that they have at their command a list of Topics, familiar to the audience and judges, from which they can derive probative or refutative arguments to advance against an opponent. One such might be based on co-relative ideas, e.g. “If one man gave just treatment another must have received it”.<sup>16</sup> Another could be derived from the concept *A Fortiori*, i.e. “If a quality does not in fact exist where it is more likely to exist, it clearly does not exist where it is less likely. e.g. If even the gods are not omniscient certainly human beings are not”.<sup>17</sup> One can easily imagine this as the unanswered, concluding remark in a debate where a mere mortal was seen to claim more than mortal knowledge or insight.

Cicero, who translates *topoi* as “loci”, seems to amplify the dual role: “Every systematic treatment of argument has two branches; one concerned with the invention of arguments and the other with the judgment of their validity. Aristotle was the founder of both in my opinion”.<sup>18</sup> According to Eleonore Stump, however,

There is a vast difference between what Aristotle presents in his Topics (as an art for discovery of arguments) and what we read in Cicero’s *Topica* ... The tools for aiding the discovery of arguments...the so-called Topics ... are not a list of general principles as they are in Aristotle but

rather a small set of classifications or differentiae of such general principles.<sup>19</sup>

The altered understanding of *topics* is heavily underlined by the commentary of Niels J. Green-Pedersen, who claims that it was Boethius' *De Differentiis Topicis* which had most influence on the medieval doctrine of the *topics*. He refers to Boethius' statement, derived from Cicero's *Topica*, to the effect that the whole science of discourse or argumentation divides into two parts, the one of finding or discovering arguments, the other of assessing them. Green-Pedersen cannot identify the source of this division: "it is certainly not Aristotelian", but, he says, "it is important to remember that the Medievals know from Boethius that the Topics is identical with the part of logic which teaches us to find arguments in contrast to the Prior and Posterior Analytics which teaches us to assess them".<sup>20</sup> "Assessment", in this connection, would seem to imply technical analysis with a view to measuring validity in terms of formal syllogistic logic. Aristotle's vision, however, allowed for argument that proceeded from reputable opinions and yielded new information in conclusions which applied "for the most part". It is not difficult to appreciate that in Toulmin's view the "substantial argument", as he defined it, comes within this latter tradition, whether or not one can identify an organic link with the work of Aristotle or trace a specific derivation. It is clear, also, that Toulmin is intent on *justifying* claims, rather than inventing them, although creative choice of warrant will be called for in the construction of such justification in circumstances where a claim is challenged.

In "The Re-Discovery of the Topics", Otto Bird claimed to have recognised many similarities between the inference warrants presented by Toulmin in *The Uses of Argument* and the analysis of the Topics in Medieval logic. In fact, he insists, "the resemblance is so close that it appears that we are witnessing something of a rediscovery of the Topics".<sup>21</sup> Although he does not use the term, Bird acknowledges that Toulmin is primarily interested in substantial arguments, i.e. arguments that depend for their efficacy mainly on the categorematic terms (Swedes and Catholics, Bermudans and British, rather than on the syncategorematic logical connectives, or,

not, and, if-then, etc.); “that is to say, in terms of the medieval logical analysis, that he is concerned with material rather than with formal consequence”.<sup>22</sup> According to Bird, the study of material consequence “was for medieval formal logic, primarily the study of the Topics”.<sup>23</sup> In a brief summary, Bird defines the Topical Maxim as a rule which allows one to make an inference, and the Topical Difference as the specific matter with which the maxim is concerned. He demonstrates an analysis of a classical Topical argument: “If it is a man it is an animal”: (1) Topical Maxim: Of whatever the species is predicated so is the genus. (2) Topical Difference: “Man” is related to “animal” as species to genus.

Bird suggests that the Topical Maxim and the Topical Difference are the counterparts, respectively, of Toulmin’s “warrant” and “backing”. The Topical Difference distinguishes the particular Topical Maxim; in this case, the Topic is from *genus* rather than from *the end*, (“that whose end is good is itself good”), or *uses*, (“that whose use is good is itself good”). To advance his case regarding the correspondence of the Topical Maxim/Topical Difference with Toulmin’s Warrant/Backing, Bird claims that one of the examples that Toulmin has provided is itself an exemplar of the “traditional topics” (by which one assumes he means “medieval”): if Harry’s hair is red, it is not black. Bird shows how this would, typically, be analysed in accordance with the medieval tradition, admitting, incidentally, that Toulmin would be unlikely to pursue this process.

If Harry’s hair is red, it is not black.

Maxim: positing one contrary removes the other from the same.

Difference: “Red” and “Black” are related as *contrary* opposites.

(It would have been necessary to identify exactly what kind of opposites they are.) As contrary opposites, they cannot both be present at the same time and in the same respect. Therefore, the conclusion is justified.

Bird seems to recognise that this exercise would be antithetical to Toulmin’s method of procedure, having allowed that Toulmin would be unlikely to engage in this kind of analysis. Toulmin’s attitude to this particular example is clear;

“warrants”, he reminds us, will “correspond to the practical standards or canons of argument” applicable to different fields of argument.<sup>24</sup> His remarks about the present argument give some indication of his *practical* approach to this and to arguments in general. Knowing that Harry’s hair is red, he says, entitles us to declare that it is not black “on account of the warrant: “If anything is red it will not also be black”, which disposes of the matter expeditiously, but he goes on parenthetically: “The very triviality of this warrant is connected with the fact that we are concerned here as much with a counter-assertion as with an argument”.<sup>25</sup> It is clear that Toulmin’s intention to fashion a new mode of inference would have little room for exercises in formality, which a focus on the substance of the project would find unnecessary and counterproductive. This view is reinforced by the manipulation which, Bird shows, can transform a material consequence into a formal consequence, following the prescription of the Pseudo-Scot,<sup>26</sup> i.e. “through the assumption of a necessary proposition” by the earlier example:

If it is a man it is an animal.

Add the proposition: Man is a species of animal.

The result is the following “formal consequence”:

If man is a species of animal, then if it is a man, it is animal.(sic)

He then translates this formal consequence into an abstract statement in terms of the logic of classes which justifies the conclusion

If it is a man it is an animal.

It is clear that this kind of formalisation is the reverse of what Toulmin was trying to achieve in his attempts to develop a scheme based on substantial supports for points of view, rather than the “shuffling” of statements. It is true that Toulmin identified “a sharp contrast between the logic of the last few centuries and medieval logic” to the advantage of the latter. In the course of criticising modern logicians for their insistence on translating statements into timeless propositions, he points out that medieval logicians did not feel it necessary to do this.<sup>27</sup> However, he regards the “idealisation” of relations between propositions and statements as respectively “the

more and the less extreme views”, and both would be retrograde steps, in the opinion of Toulmin, who is intent on answering in the negative the rhetorical question: “Can one cast into a timeless mathematical mould the relations upon which the soundness and acceptability of our arguments depend, without distorting them beyond recognition?”<sup>28</sup> Our utterances in support of the claims we make are related to their context, and this must be taken into account in their assessment.

In seeking to establish correspondences between Toulmin’s warrant/backing and the Topics of medieval logicians, Bird claims that “the Maxim performs the same function as a warrant and to describe it as ‘a confirmatory rule that proves a consequence’ as Albert of Saxony does is nothing Toulmin should object to, except, perhaps, for its departure from the sound of ordinary language.”<sup>29</sup> This is to understate the importance of the use of ordinary language in the Toulmin project, while a reference to Toulmin’s citation of the warrant, “All whales are mammals”, as linking him to the medieval employment of the genus-species topic, is to take this out of the context in which Toulmin uses it. In pointing out that warrants will vary in accordance with the relevant field of argument, Toulmin illustrates the different kinds of warrants that will arise. As Toulmin’s training was in science, it is not reflective of a connection to medieval logic that he should refer to taxonomic as well as statistical and legislative supports for claims that have been advanced.

Bird’s purpose is to demonstrate the similarities between Toulmin’s analysis of warrants and backing, and medieval Topical logic, but he does recognise an important difference, and this is Toulmin’s aversion to “the over-formalisation of logic”, which he identifies as the main concern of Toulmin’s *The Uses of Argument*. Bird might have attached more significance to this facet of Toulmin’s work than he does. It is not a question of Toulmin’s personal style, or even his proclivity for plain speaking; his rejection of formal logic, with its translation of statements into propositions and propositions into mathematical-type formula, was, in his firm opinion, inimical to dealing with real arguments across the spectrum of human experience. The Aristotelian syllogism and the formalised treatment of topics by medieval logicians, to be respected in their own right, were not adequate for what Toulmin had in mind. When Bird maintains that, “more has been done in the

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analysis of warrants and backings than Toulmin seems to realise is clear from even so brief a view of the medieval Topical tradition”,<sup>30</sup> he seems to be suggesting that much of Toulmin’s work had already been done. But it is also clear that, even if one can identify structural similarities between Toulmin’s warrants and medieval topics, they are separated by very significant differences. To begin with, the level of abstraction is most noteworthy. A comparison of warrants will serve to emphasise this. Bird presents three arguments which Toulmin uses to exemplify his method:

1. Harry’s hair is red so it is not black.
2. Petersen is a Swede so he is almost certainly not a Roman Catholic.
3. Harry was born in Bermuda so he is a British citizen.

To justify the above conclusions, Toulmin provides warrants, which he defines as “rules, principles, inference licences, ... general, hypothetical statements which can act as bridges, and authorise the sort of step to which our particular arguments commits us”.<sup>31</sup> The following would, if called for, serve as warrants in the above arguments:

1. If anything is red it will not be black.
2. A Swede can be taken almost certainly not to be a Roman Catholic.
3. A man born in Bermuda will be a British subject.

Toulmin has defined his warrant very broadly and inclusively; one does not usually have to search widely to find a suitable warrant, and the warrants used in the above instances are little more than generalisations based on the original claim; albeit there will be backing of a factual nature, if necessary. By contrast, the Topics cited by Bird as the counterparts of warrants are, in their abstraction, elements of a meta-language associated with Aristotelian metaphysics, e.g. Topic of Definition, Whole, Part, Opposites, Genus, etc.. Clearly, the purposes of the two disciplines are quite distinct. As is usually the case with formal systems of logic, there is a search for internal consistency, whereas Toulmin’s system is intended to analyse and come to

terms, in ordinary language, with argumentative practice concerning facts and events in the external world.

While the thrust of Bird's remark, that "more had been done for warrants and backings" by the medieval Topical tradition than Toulmin realised, may have some substance if accepted on Bird's terms, this may result from the fact that Toulmin did not trace the evolution of the Topics from Aristotle, through Cicero, Boethius and, as Bird does, through the work of Peter of Spain, Ockham and Petrus Ramus.

Toulmin's own epiphany recognised a connection between his work and the topics of Aristotle, notably the fact that there seemed to be a correspondence between the general and special topics of Aristotle and the *backing* appropriate to the general and specialised fields of discourse in his own work. This is problematic, however, as the *topic*, given its function as an "inference licence", ought to correspond to the *warrant* rather than to the *backing*, which, as factual support, differs so much from the warrant in its nature and function.

There is no doubt that Toulmin was influenced by the work of Aristotle at an earlier and later phase in his work. The equal standing accorded by Aristotle to plausible reasoning in accordance with respectable, well-founded opinion, is at the root of Toulmin's argumentation scheme. Apart from his acknowledgement that medieval logicians did not insist on translating statements into propositions, he would have found little in their formalisations to contribute to his system. While Bird's conclusion that more had been done in the area of argumentation than Toulmin realised may be true, there is little reason to accept that recognition of this would have greatly altered Toulmin's way of proceeding, committed as he was to an informal, natural language model that would encompass practical engagement with the world of uncertainty, where consistency alone did not provide answers to relevant matters of fact or give strong guidance as to actions that should be taken.

### **Toulmin and Topics**

In summary, then, in spite of Bird's claim that the concepts of warrant and backing had already been well developed for centuries before Toulmin's model of argumentation, it is overstating the case to identify them with the *medieval* Topics,

and it is clear that there is no direct derivation of one from the other. It should be kept in mind that similar insights could occur and be developed autonomously. This has happened in science and other disciplines, and the unconscious retrieval of an ancient understanding in a renewed form is not unusual. Toulmin professed to have recognised, retrospectively, a correspondence between the central elements of his scheme and the *topics*, special and general, as outlined by Aristotle. But whether one measures the Toulmin warrant against the Aristotelian or medieval Topic, one must take into account the difference of context in terms of time, place and state of affairs. As a “hardened contextualist”,<sup>32</sup> Toulmin can admit: “If I were writing the book today, I would broaden the context, and show that it is not just the “warrants” and “backing” that vary from field to field: even more, it is the *forums* of argumentation, the *stakes*, and the contextual details of “arguing” as an *activity*”.<sup>33</sup>

This last emphasis results from his claim, earlier in the same address, that he had witnessed the Russell/Whitehead concept of “propositions” give way to Wittgenstein’s “language games” and “forms of life”, Austin’s “illocutionary utterances”, or John Searle’s “speech acts”. For such recent philosophers, the emphasis is on “language use” as action, not just as a “stating of facts”.<sup>34</sup>

As far as Toulmin was concerned, the recent developments reinforced his original conviction regarding the function and structure of argumentation. His work was located in a time dominated by uncertainty, where the quest for certainty in human affairs had been seen to be futile, and where a more pragmatic attitude, underpinned by the greatest degree of assurance concerning the way forward, would be the more widely accepted approach. No doubt, in charting the way forward, Toulmin, whether “sleepwalkingly” or otherwise, shared some of the insights and wisdom of predecessors, especially Aristotle.

### **Toulmin, Enthymeme and Paradigm**

While the complete structure of the Toulmin argumentation scheme is usually presented as having six elements, it is basically a two-part inference instrument, i.e. a declaration (datum) leading to a conclusion (claim):  $p \rightarrow q$ . The other elements are invoked only after the datum or the inference have been challenged or rejected. This

initial combination of observation statement followed by claim is the most natural method of arriving at, or communicating, conclusions, and a simplistic comparison would link it with the enthymeme, frequently defined as a syllogism with a missing premise. R.C. Seaton cites De Quincey's attitude to the conventional rendering of the enthymeme, emphasising the normality of the two-part inference: "Nature prompts all men to that sort of ellipsis; and what impertinence in a teacher to build his whole system upon a solemn precept to do this or that, when the rack would not have forced any man to do otherwise!"<sup>35</sup> Of course, to define the enthymeme as an "imperfect syllogism" or "a syllogism with one premise (or on occasion, the conclusion) suppressed" is to impoverish the concept as it features in the kinds of argumentation proposed by Aristotle. It is not the case that Aristotle began with the syllogism and that an inferior level of reasoning, i.e. the enthymeme, was derived from it. Aristotle is clear that the syllogism/demonstration, starting with premisses that are true and/or primitive, or deduced from those that are primitive, will lead to necessary conclusions, but that in many aspects of life there are arguments which proceed from respected opinions, or from signs (fallible or infallible), or from examples, and that in such cases, where, by definition, certainty is not available, we must strive for the greatest degree of assurance which the circumstances allow. In addition, he offers the practical advice to the rhetor that he ought not to strain the attention of the audience by offering arguments that are unnecessarily long, and that it is tactically wise to allow the audience to supply for itself some of the commonly held material on which the rhetor relies in her efforts to persuade.

If, however, there were claims that Toulmin's *warrant* owed something to the Aristotelian Topic, or that the task of the warrant had already been specified, whether by Aristotle or medieval logicians, as held by Bird, it is not surprising that the enthymeme, a basic inference tool of Aristotelian argumentation, should be singled out as providing the basic structure of Toulmin's argumentation scheme. As Toulmin acknowledged, he had made a detailed study of Aristotle's work and had a particular regard for Aristotle's practical approach to reality, including his attention to argument outside the academy, e.g. in political and legal life. This detailed study, however, occurred subsequent to *The Uses of Argument*, and cannot support a claim

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that he has modelled the Toulmin scheme on that of Aristotle. In fact, much of his motivation came from dissatisfaction with the syllogism and a determination to meet the challenges of his own times, in terms of argumentation method. In any case, the tradition that modified the early understanding of the Topics also formalised the enthymeme as “a syllogism with a missing premiss”, as though the definition of “syllogism” itself were entirely straightforward. This is not the case. Aristotle defines an enthymeme as “a syllogism from likelihoods or signs”,<sup>36</sup> which suggests that the essence of the enthymeme has to do with content as well as structure. Viewed against the paradigm of the tripartite syllogism, with its tightly drawn rules, an inference vehicle with *one* premise and a conclusion could be seen as imperfect, to be missing something. The experienced rhetor, however, would know that it could be counter-productive to lay out every last detail of a case to an audience as if one were engaged in *demonstration*; leaving some work for audience, made of up certain types of people with whom the speaker had established credibility, would be more likely to be effective in achieving conviction. Aristotle would commend a speaker for allowing an audience to supply common or social knowledge, showing confidence in its maturity and understanding of the ways of the world: “The enthymeme must consist of few propositions ... if any of these propositions is a familiar one there is no need even to mention it. To show that Dorieus has been victor in a contest for which the prize is a crown it is enough to say ‘For he has been victor in the Olympic games’”.<sup>37</sup> However, the situation is not as one-dimensional as this would suggest. Aristotle has much to say about enthymemes, their structure and potential efficacy, and he provides specific examples which do not suggest an “incomplete” or deficient syllogism as commonly understood, but which, nevertheless, offer instances of logically acceptable inference.

Having stated that an enthymeme is a deduction dealing with “practical subjects”, i.e. “questions of practical conduct, courses of conduct to be chosen”,<sup>38</sup> he presents enthymemes constructed on the basis of deriving inferences from maxims:

Maxim: Never should any man whose wits are sound have his sons taught more wisdom than their fellows.

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When one has added “the reason or explanation”:

Reason: It makes them idle; and therewith they earn  
ill-will and jealousy throughout the city.  
“the whole thing is an enthymeme”<sup>39</sup>

On the face of it, this seems to be a persuasive, albeit defeasible, argument against over-education, and exemplifies what frequently occurs: arguments in the form of claim and support are advanced without any awareness on the part of the arguer that anything necessary is being omitted, and it is only in response to challenge that supplementary support will be provided or, perhaps, that the claim will be modified. David Hitchcock considered that the assumption that there is an unstated premiss when an enthymematic argument is advanced “is problematic”.<sup>40</sup> Granted, Aristotle maintains that, for rhetorical effect, a speaker may omit material which an audience can supply, whether this is a datum or a broadly shared moral viewpoint; Hitchcock maintains that “we are unaware of having omitted a premiss when we advance an enthymeme.”<sup>41</sup> Toulmin’s approach, he points out, was to consider the so-called “hidden assumption” as a “rule of inference”, and when this rule is *implicit*, it is no more correct to consider the enthymeme incomplete because the rule is not made explicit than to expect a statement about *modus ponens* when a conclusion is reached in accordance with this latter rule. The *warrant* is not articulated where the *claim* is acceptable on the basis of the *data* advanced; this will happen in the context of arguer and auditor sharing a culture, discipline, or domain of discourse; and a rhetor is confident that an audience of a particular composition will, without the provision of an inferential rule, accept the conclusion having accepted the *data*. Hitchcock goes on to assert that “To prove enthymematic validity, one needs to make the implicit assumption explicit and if necessary support it with argument”.<sup>42</sup> He claims that, in *The Uses of Argument*, Toulmin refers to such supporting material as “backing”.

In a later and more detailed analysis, Hitchcock maintains that the standard

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view of enthymemes as syllogisms with a missing premise is mistaken: “For most enthymemes there is no gap. A conclusion can follow definitely but not logically, with no postulation of unstated premisses.”<sup>43</sup> This outcome he refers to as “enthymematic consequence”, i.e. an inference from a premise (data) to a claim resting on a “covering generalisation”.<sup>44</sup> This latter is what Toulmin refers to as a “warrant”, i.e. a rule (implicit or explicit) *in accordance* with, rather than *from*, which a conclusion is drawn, but he makes no claim to be starting with an enthymeme.

Toulmin’s purpose in devising an argument structure was, at least in part, an effort to break with the contemporary dominance, in analytic philosophy, of formal deductive logic. The syllogism, as invented by Aristotle, followed by more than two thousand years of scholarly attention, was superseded from the end of the nineteenth century by the development of logics akin to mathematical calculi. These developments, in Toulmin’s opinion, did not provide a useful instrument to carry the great majority of arguments that arise in the course of human experience. He could not, however, avoid completely what had been accomplished in logic before him, even if he wished to do so. By the time he came to write *The Uses of Argument*, he had already dealt extensively with concepts of reasoning and inference, particularly in the disciplines of science and ethics. Given his tributes to Aristotle, the benchmark for any work in the areas of reasoning and rhetoric, it is clear that Toulmin was familiar with what had been done in the field of plausible reasoning in various parts of the *Organon* and *Rhetoric*. Nevertheless, he chose to present his ideas, as far as possible, in non-technical natural language, and was not overtly drawing on the work of Aristotle while acknowledging freely his indebtedness to his own contemporaries. The scheme which he developed was criticised for being, among other things, “anti-logic”, and showing no awareness of the work that had been done in the area during the previous one hundred and fifty years. At the same time, efforts were made to show that it had, in ways, all been done before, as, for example, in the topics of Aristotle developed through medieval logicians, and through the mechanism of the enthymeme, which, at least on the surface, appears to provide the basic datum → claim structure. But identifying one with the other, or

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even seeing one as a derivation of the other, is to miss important features of both. Aristotle had much to say about the comparative cogency of enthymemes, and provides many examples and methods for their use. Toulmin's scheme is augmented by contingent elements such as modal qualifiers, backing and rebuttals. The style of their presentation also emphasises the different contexts in which they were developed, and the likely audiences and conditions of use. For Aristotle, the enthymeme "is a rhetorical deduction"; "enthymemes are proofs based on generalities"; "the orator's demonstration is an enthymeme"; enthymemes draw inferences from signs, examples, reputable opinions. In brief there is much more to the nature and function of the enthymeme than describing it as a syllogism with one element suppressed, and in the light of the detailed analysis of Aristotle's work on reasoning by Myles Burnyeat, there is more to be understood about *the nature of the syllogism itself* before arriving at conclusions that would derive Toulmin's argumentation scheme directly from an Aristotelian model.<sup>45</sup>

Burnyeat considers that the received doctrine of the enthymeme as a syllogism with one premise missing is "useless"; "a logic of incompletely expressed reasoning is as redundant as a logic of indignant reasoning".<sup>46</sup> Burnyeat scrutinises various traditional authorities in an effort to establish the source of the "suppressed premiss" description of the enthymeme. According to Hamilton,<sup>47</sup> this had its origin in Prior Analytics 2.27: "[a]n enthymeme is an incomplete (*ateles*) sullogismos from likelihoods or signs" (70a 10).<sup>48</sup>

Burnyeat argues convincingly that *ateles* was not written by Aristotle and was a later gloss. Offering further challenge to earlier exegesis, he claims that in Aristotle's work, *sullogismos* does not usually translate into the modern "syllogism".<sup>49</sup> Rather, it approximates to "argument", the content of a persuasive speech, the ideas that a rhetorician would offer to the audience for its consideration in making up its mind about disputed facts or putative actions. For Aristotle, therefore, in Burnyeat's view, "An enthymeme is sullogismos *tis*, a kind of sullogismos. He means neither more nor less than this: an enthymeme, a consideration is a sort of argument."<sup>50</sup>

In addition, "more often than not, it is argument in a context where certainty

and conclusive proof are not to be had”.<sup>51</sup> This is the kind of context which, principally but not exclusively, the Toulmin method was designed to accommodate; circumstances where conclusions, proceeding from reputable opinions (*endoxa*), hold “for the most part”, and the strict entailment of what became known as the “syllogism” is inapplicable. The qualification “*tis*” warns us, according to Burnyeat, “not to expect an orator’s apodeixis to meet the stringent conditions laid down for scientific demonstration.”<sup>52</sup> This, of course, is directly relevant to Toulmin’s so-called “new logic”, providing as he does for inference in situations not amenable to the mechanical laws of the geometrical model. But a question arises as to the level of certainty with which he can deduce one statement from another (in accordance with some inference licence), or, rather, in accordance with Toulmin’s own lay-out, the level of certainty with which he can assert claims on the basis of the data offered. Burnyeat presents the case for the rhetor inferring from generalisations, the way things are “for the most part”, and justifies the acceptance of unqualified conclusions by the Aristotle “who wrote the Rhetoric”, rather than the one “who wrote the Analytics”.<sup>53</sup> He selects examples (Rhetoric 2.19) which Aristotle suggests as ways to prove a point about the past:

(A) If X was able to and wished to ( $\varphi$ ) X ( $\varphi$ ) ed.

(B) If X wished to ( $\varphi$ ) and there were no external obstacles X ( $\varphi$ ) ed.

While both conclusions are unqualified, the arguments are seen to be strong and the conclusions acceptable in a rhetorical context; ie. observation and experience would commend them as reasonable. Many of the generalisations in the passage referred to are of the “for the most part” variety; Aristotle is using examples found in well-known speeches or those that would be considered “common sense”, and neither he nor the orators would pretend to be offering scientifically established facts or scientifically collated statistics. Are they both, therefore, irresponsible in their drawing of inferences without qualification? Burnyeat exculpates both. Referring to a further example,

(C) If the sky is clouded over, it is likely to rain,

he prescribes: “[t]ake the prefix “it is likely to” in (C) as qualifying the *inference*, not the *conclusion* inferred (emphasis added). Let it express *probabilitas consequentiae*, not *probabilitas consequentis*.”<sup>54</sup> “It is likely to” is to be regarded as an inferential connective, rather than a modal operator. This gains its relevance from the fact that Aristotle is constantly aware of the practical demands of reasoning in public, whether forensic or political, and acutely conscious that “guilty on the balance of probability” is qualitatively different from “probably guilty”, and that “on the balance of probability we should go to war” is a decision, whereas “we should probably go to war” is, at best, a dispiriting conclusion.

### **Topics: Toulmin and Perelman**

The foregoing serves to indicate only that the nature of reasoning and inference on the basis of Topoi and Enthymeme in Aristotle is complicated; that arriving at exactly what Aristotle intended is not a straightforward process; that the traditional definition of enthymeme as an “incomplete syllogism” raises difficulties (not least the criteria to be used in deciding on the missing element); and that any facile identification of Toulmin’s work with that of Aristotle, or even tracing a direct line of descent, requires caution. Speaking in the University of Michigan in nineteen eighty two on “Logic and the Criticism of Arguments”, Toulmin informed his audience that, as regards *The Uses of Argument* (1958), “Only in retrospect is it apparent that – even though sleepwalkingly – I had rediscovered the topics of the *Topics* (of Aristotle)”.<sup>55</sup> This is in contrast with the experience detailed by Chaim Perelman (whose work on argumentation was contemporaneous, and in many respects comparable with that of Toulmin) and his efforts to find an acceptable method of arguing about values. His collaborator, Mme. L. Olbrechts-Tyteca, and he, spent ten years in this quest and, unexpectedly, realised that they

had rediscovered a part of Aristotelian logic that had been long forgotten

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or, at any rate, ignored and despised. It was the part dealing with dialectical reasoning, as distinguished from demonstrative reasoning – called by Aristotle *analytics* – which is analysed at length in the *Rhetoric*, *Topics*, and *On Sophistical Refutations*.<sup>56</sup>

Their study would culminate in the monumental *The New Rhetoric: A Treatise on Argumentation* (1969). While it is evident that Toulmin had not engaged in a similarly detailed study of the informal aspects of reasoning in the work of Aristotle prior to producing *The Uses of Argument*, his focus on reasoning was sharpened by his experience in science and the need for strict entailment of a mathematical quality, represented by the formal syllogism. It was his disaffection with the application of this method of reasoning to all aspects of reality that provided the impetus to the development of an alternative. In doing so, however, he does not transparently declare his intention to use the presyllogistic enthymematic template as a model for his own “revolutionary” break with the past, even though he acknowledges awareness of Aristotle’s objectives and achievements. While he does make it clear that his main interest is in the bits of the *Organon* and *Rhetoric* that are not “analytic”, thereby signalling an affiliation with the probabilistic reasoning in Aristotle, the style and language differ noticeably, e.g. the employment, in *The Uses of Argument*, of singular statements concerning “facts of the matter” and the absence of arguments leading to decisions of a civic nature. Furthermore, Toulmin’s “warrant” is likely to be the logical minimum necessary to justify the inference in question, e.g.

- (a) Datum: Petersen is a Swede.
- (b) Claim: Petersen is almost certainly not a Roman Catholic.
- (c) Warrant: A Swede can be taken not to be a Roman Catholic.

or

- (a) Datum: Harry was born in Bermuda.

(b) Claim: Harry is a British citizen.

(c) Warrant: A man born in Bermuda can be taken to be a British citizen.

Of course, such warrants will have been chosen because the arguer is in possession of factual information to support them. However, there is no question of reaching for abstract generalisations with multiple applications, or offering classified lists to be drawn on as necessity dictated. This is not to claim that such classification is ruled out, or that the Toulmin model is not to be developed in ways which anyone might find fruitful – Toulmin specifically invited readers to assume this task – but he is quite consciously making available an instrument for universal use and emphasising its independence of analysis in terms of traditional formal logic. Such analysis, especially in the forms of the various syllogisms developed since Aristotle and the calculi based on the mathematical model, had, in Toulmin's opinion, assumed the possibility of achieving certainty of conclusion. For him, this would have limited the use of logic to a very restricted area, e.g. mathematics, and this would merely frustrate the effort to establish new knowledge in a wide range of fields with the level of certainty possible within that field.

### **Inference: The Primacy of Induction**

The essential element of Aristotle's reasoning and Toulmin's argumentation is the concept of *inference*, and an analysis of this concept is particularly relevant to an assessment of Toulmin's work on argumentation against the benchmark standards set by Aristotle. In *Prior Analytics*, Aristotle tells us that "every belief comes either through deduction or from induction".<sup>57</sup> He has defined deduction as "a discourse in which, certain things being stated, something other than what has been stated follows of necessity from their being so",<sup>58</sup> while induction is "a passage from particulars to universals ,e.g. the argument that supposing that the skilled pilot is the most effective, and likewise the skilled charioteer, then, in general, the skilled man is the best at his particular task".<sup>59</sup> He compares their relative efficacy *induction* and *deduction*: "Induction is more convincing and clear: it is more readily learnt by the use of the senses, and is applicable generally to the mass of men; but deduction is

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more forcible and more effective against contradictory people”.<sup>60</sup> In *Posterior Analytics*, Aristotle maintains that rhetorical arguments persuade “through examples which is induction or through enthymemes which is deduction”.<sup>61</sup> This corresponds to *dialectic*, which also argues on the basis of either induction or deduction.<sup>62</sup> In view of the fact that the concept of deduction dominated the process of inference for millennia, it is instructive to recall Aristotle’s declaration: “Now, of first principles we see some by induction, some by perception, some by a certain habituation and others too in other ways”,<sup>63</sup> and his later remark to the effect that induction “is the foundation of reasoning”.<sup>64</sup> That Aristotle so regarded the process of induction is supported by J. Barnes, who claimed that, with Aristotle,

the theory of demonstrative science was never meant to guide or formalise scientific research; it is concerned exclusively with the teaching of facts already won; it does not describe how scientists do or ought to acquire knowledge; it offers a formal model of how teachers should impart knowledge.<sup>65</sup>

Aristotle the practical scientist would come to conclusions about the world through “enumeration” of, or finding analogies with, the particulars, and present his students with the results of his research using deductive methods. But he also recognised that, whether in dialectical or rhetorical argumentative interactions, there was a vast swathe of human situations which could be debated or argued for only on the basis of well-founded inductive techniques, and demanding demonstrative standards of proof in such ventures would be futile. The rationale underpinning this outlook is signalled in the *Nicomachean Ethics*, where, in a pithy example of an argument based on co-relation, he tells us, “we must be content ...in speaking about things which are only for the most part true and with premisses of the same kind, to reach conclusions that are no better. In the same spirit, therefore, should each of our statements be received”, and, making no apology for this pragmatic approach to human experience, he maintains: “for it is the mark of an educated man to look for precision in each class of things just so far as the nature of the subject admits; it is

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evidently equally foolish to accept probable reasoning from a mathematician and to demand from a rhetorician demonstrative proofs".<sup>66</sup>

In the sphere of argumentation, therefore, there were occasions for deductive inferences, from established facts, from probabilities and from signs (the latter two forms being refutable), but there were very many instances of induction providing the inference, whether by way of enumeration of particulars or examples. As *The Rhetoric* is an outline of the art of persuasion, involving the content of the speech, the trustworthiness of the rhetor and the emotional and psychological preparedness of the audience, Aristotle lays much emphasis on the example, analogy, paradigm as a central feature of inference. Examples, he points out, may be derived from historical sources or from legends; indeed they may be invented, and a facility for doing so may be developed by a training of the intellect. An appraisal of the nature of the audience will suggest the kind of paradigm that is most appropriate ... precedents drawn from familiar historical events will be more convincing, as what has happened in the past is a good guide to the future.

In his treatment of induction, therefore, Aristotle is providing for argumentative situations in which an arguer will be furnished with the most reliable techniques, whether engaged in one-to one disputation or in attempting to persuade an audience. This does not necessarily imply that the arguer will always get the better of an opponent, or always persuade an audience; if that were the inevitable outcome, he would be providing demonstrations, using a deductive process with a necessary outcome. In discussing taxes, food supplies, the desirable size of the army and questions of war and peace, however, the members of the polis expressed differing viewpoints, and he who would have his opinion prevail would have to rely on knowledge and experience, a grasp of the context including the composition of his audience, and a ready access to illustrative precedents and relevant paradigms to invite a tacit induction on the part of that audience.

Clearly, there are parallels between the work of Aristotle and Toulmin. They both have a background in science; they share a commitment to the application of reason to the human condition and experiences; and they both recognise the limitations of the deductive method in arriving at a resolution of real-life

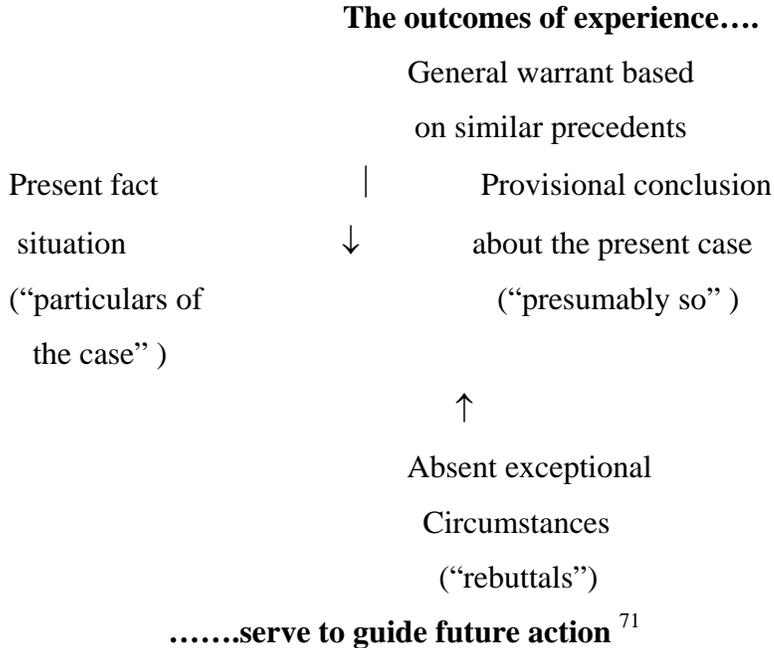
disagreements. If, therefore, one is to identify a close relationship between the Toulmin model of argumentation and some aspect of Aristotle's work on *inference*, it is likely to be found in *The Rhetoric*, in the inductive branch, in the parts dealing with *paradigms* (examples) rather than mere enumeration. This is not immediately obvious, and may be illustrated indirectly.

In *The Abuse of Casuistry* (1988), co-authored by A.R. Jonsen and S.E. Toulmin, we are informed that, “[n]owadays the moral problems of public policy are not merely stated in casuistical ways: they are also debated in the same taxonomic terms, and resolved by the same methods of *paradigm* and *analogy*, that are familiar to students of common law and casuistry alike”<sup>67</sup> (emphasis added).

This has come about because the circumstances which “led Aristotle to put ethics in the realm of *praxis* and *phronesis*, not *theoria* and *episteme*”, i.e. the specific elements and contexts to be taken into account by Toulmin and Jonsen have again become an integral part of the debate about moral issues in the later twentieth century, and universal principles are inadequate to deal with cases that do not conform to the absolute norm.<sup>68</sup> The authors, while recognising the extent to which the case-method of argumentation had been abused, trace its origins to fourth/fifth century Athens, where, they claim, speculations of philosophers had little effect on practical moral decisions, and “moral thought and practice continued to operate in time-honoured ways, appealing to traditional standards, received maxims, and customary patterns of life”.<sup>69</sup>

Of course, reference to the past as a guide for the future was not confined to matters of morality; in the political field there are frequent warnings, based on precedents against behaving, or allowing others to behave, in a certain way, and in social affairs also there was a tendency to draw conclusions concerning conduct by analogy with previous observation and experience. Toulmin and Jonsen see a close affinity between the procedure for arriving at a moral decision and making a medical diagnosis, both of which they regard as examples of practical argument from analogy. In contrast to theoretical deductive arguments, where the inference flows downward from universal principles to specific conclusions, in practical arguments employing analogy or paradigm propositions, “the truths and certitudes established

in the precedent cases *pass sideways* so as to provide ‘resolutions’ of later problems”.<sup>70</sup> This is illustrated as follows:



In summary, this yields the result that if an appropriate precedent or paradigm statement is applied to the facts of the present situation, a provisional or presumptive conclusion will emerge which is worthy of acceptance unless there are particular aspects of the present case which render the paradigm inapplicable. This is, of course, the Toulmin model of argumentation as developed in *The Uses of Argument* (1958), where the paradigm case is described as a warrant which allows or compels inference to a particular conclusion unless a rebuttal, i.e. special circumstances rendered it inappropriate to the case. Later, in *The Abuse of Casuistry* (1988), we are told that ([u]ntil we have seen which type case or paradigm the facts of the present case most closely resemble, there may be several possible rules, warrants and arguments , any one of which would be demonstrative or conclusive in the absence of the others”.<sup>72</sup> This echoes Toulmin’s definition of warrants in *The Uses of Argument*, as “rules, principles, inference-licences or what you will”,<sup>73</sup> and the layout of the analysis of a moral dilemma in *The Abuse of Casuistry* is identical with the layout of arguments in the earlier work, as illustrated by what is referred to as an

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ambiguous case, i.e. a situation about which argument could arise:

(W) Borrowed objects should be returned after use

I borrowed this gun (G) \_\_\_\_\_ | \_\_\_\_\_ So: (C) I should  
give it back  
and no longer \_\_\_\_\_ | to the owner  
have a use for it \_\_\_\_\_ |

(R)

Except that  
the owner threatens to shoot  
his neighbour the moment he  
gets his gun back.<sup>74</sup>

(W=Warrant, C=Claim, G=Grounds, R=Rebuttal: the terminology used by Toulmin in *The Uses of Argument*, except for “grounds”, which had already been substituted for “data” in the model used by Toulmin, Rieke and Janik in *An Introduction to Reasoning* (1979).)

While, in *The Abuse of Casuistry* (1988), the concentration as regards argument is on the solution of moral disputes by the use of a method based on paradigm cases, it is clear that the analysis is identical to the Toulmin model designed to deal with a range of contentious issues much wider than the moral, but that basic to it is the inference from example, analogy or paradigm. The familiar case of Harry can be seen in a light similar to the above:

(W) A man born in Bermuda will generally be a British subject

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|  
|

Harry was born in Bermuda (D/G) \_\_\_\_\_ So (presumably) Harry is a  
British

Subject (C)

|

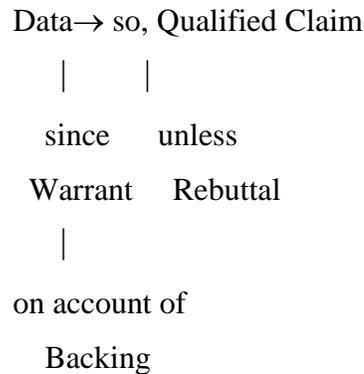
Unless both his parents  
are aliens, etc. (R)

This is the basic pattern of argument from a paradigm case; where cases are identical there will be no disagreement, but this kind of “inductive” inference provides for circumstances where there is ambiguity, or less than certainty, about the extent to which the current case matches the template of the paradigm. In this situation, the inference will lead to a qualified or probable conclusion, or will justify a presumptive claim using a form of induction favoured by Toulmin for arguments where a high degree of probability is likely to be the best outcome and induction by “enumeration of the particulars” is irrelevant.

Of course, in *The Uses of Argument* Toulmin recognised that rhetorical argument from analogy or paradigm, as presented by Aristotle, may engage an audience in the process of drawing a conclusion. For example, when warning the populace to beware a leader who is looking for a bodyguard because there are precedents (Peisistratus, Theagenes) of those who do so subsequently becoming tyrants, it is not necessary for Aristotle to articulate the detail of the conclusion; a skilled rhetor would allow an audience to do so for itself. Toulmin, however, in a different time and forum, is intent on anticipating reservations, objections and opaqueness so as to provide the highest degree of candour possible. When working in an area where things obtain “for the most part”, it is likely that conclusions will be presumptive, so the argument model will incorporate a qualifier. In a more diverse and complex society than that of fifth/fourth century Greece, it is likely that someone will ask why such-and-such a warrant should hold so the model will include a source of backing, and in an area of reasoning/inference, where “necessity”

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is absent, it is prudent to contemplate and make provision for counter-arguments or exceptions, and so the rebuttal is brought into play. In brief, Toulmin, who, in *The Uses of Argument* adopted the concept of *precedent* from jurisprudence, is building on the basic Aristotelian paradigmatic structure in such a way as to cover as many as possible of the uncertainties and lacunae that may arise in the course of an argument, and thus render the arguer fore-armed. Nevertheless, even though the Toulmin model may be more elaborate than the Aristotelian enthymeme or syllogism, Toulmin, having set out the six-part argument pattern,



advises that “[t]his form may not be final”.<sup>75</sup> Considering that Toulmin is always conscious of context of time, place and forum, and that he is attempting to deal with the contingent rather than the necessary, it is not surprising that he should enter such a caveat. Different times and circumstances might demand further modifications.

### Summary

Having considered various aspects of Aristotle’s work on inference (the *Organon*, *The Rhetoric*, *Nicomachean Ethics*), it is reasonable to conclude that the inductive elements of the Aristotelian account of argumentation substantially informed the development of the Toulmin model. Toulmin certainly shared Aristotle’s pragmatism in demanding from arguments only the level of necessity appropriate to the field in question; this is basic to the Toulmin project. The use of the warrant to permit the drawing of inference reflects the function of the *topoi* just as the *data > claim* foundation recalls the enthymeme. While it is not the case that the

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elaborate development which became the *Toulmin model* is merely an adaptation of Aristotle's creation, there is a clear relationship between the two. There is, therefore, some justification for Toulmin's claim to be aiming for a *Novissimum Organon*; his commitment to the production of a reasonable and rational instrument of discourse, operable in his own society, is not in doubt and he has, clearly, been responsible for innovation.

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## Chapter 4. Logicians' Objections and Rhetoricians' Defences

Writing in 2005, George Boger summarises some aspects of the attitudes separating the protagonists of formal logic from those developing informal logic/argumentation theory as follows: "While argumentationists maintain that formal logic's adherence to soundness and embracing a Platonist absolutism renders it irrelevant, their critics maintain that informal logic's adherence to acceptability results in a pernicious relativism that renders it duplicit."<sup>1</sup> This polarised version of the situation might have been produced in the immediate aftermath of the publication of Toulmin's *The Uses of Argument* in 1958, although the sober tone of the remarks would have been at odds with some of the comment that appeared in reviews of the treatise. In spite of the considerable body of work that has been done in the meanwhile by scholars in the related fields of argumentation theory, informal logic, critical thinking and communications studies, there remain unresolved questions regarding the standards by which to organise and evaluate the cogency of arguments/argumentation as distinct from the clear-cut criteria of validity and soundness which are at the heart of formal deductive logic.

The irrelevance, as Toulmin saw it, of formal deductive logic to the resolution of the vast majority of verbal disagreements/arguments was the main motivation for *The Uses of Argument*; the dethronement of deduction, as understood by formal logicians, and the escape, as he saw it, from the mathematical model of reasoning, were necessary steps to be taken in providing a rational and reasonable instrument for the conduct of arguments that could lead to the establishment of an agreed position on a range of real-life issues. The responses of logicians were, in the main, negative, in some cases intemperately so, as if the intellectual world of rigorous inference, where the prize was "truth", were in immanent danger.

Broadly speaking, the criticisms fell into two categories: (a) Toulmin, in his efforts to discredit formal deductive logic and replace it with "new logic", had seriously misunderstood and underestimated the former, not having taken into account the developments that had taken place during the previous century; and (b) even if there were a need for logic to become employable in practical affairs,

Toulmin's scheme was not an adequate vehicle. It was claimed that, among other deficiencies, there was a lack of clear definition and identification of different elements of the argument model he was presenting.

**Logical Form and Analyticity: H.N. Castaneda**

An early, trenchant critic of the Toulmin project was Hector Neri Castaneda.<sup>2</sup> While conceding that Toulmin “argues very persuasively for the need of a fundamental change in logical theory”,<sup>3</sup> that “[h]e also throws in abundant and valuable comments on the history of logic”,<sup>4</sup> and that “he also discusses several problems in philosophy with great penetration”,<sup>5</sup> Castaneda intends to confine his remarks on this “iconoclastic book” to the aspects of it which he finds objectionable. These consist, in the first instance, of charges which, Castaneda alleges, Toulmin brings against ordinary formal logic:

Charge 1: The major premise, in the conventional formulation as “All A's are B's” or “No A's are B's”, (a) conceals the distinction between an inference-warrant and its backings and (b) obscures the different types of backing.

Charge 2: The ordinary distinction between premise and conclusion is a bad oversimplification.

Charge 3: Formal logic does not distinguish (i) analytic, (ii) formally valid, (iii) conclusive and (iv) warrant-using arguments.

Castaneda's approach is clear from the tone of his introductory summary: “The paper argues that none of the charges is proven, that most of them cannot be proven, that Toulmin's new logic is only vaguely hinted at and that his suggestions are positively obscure or mistaken.”<sup>6</sup> Having reproduced the template of the Toulmin model and summarised Toulmin's objections (as above) to ordinary logic, Castaneda identifies charge C1 above as “fundamental for Toulmin's proposal of a new logic”.<sup>7</sup>

Before dealing with this aspect of Castaneda's critique, some preliminary comments seem appropriate. To begin with, it is unlikely that Toulmin is intent on making proposals for a “new logic”. He makes it clear that he does not regard his

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proposal as a finished article and in his introduction he refers explicitly to the five chapters of *The Uses of Argument* as *essays*, “trial balloons designed to draw the fire of others”.<sup>8</sup> Clearly, he is dissatisfied with formal logic for the conduct of business in wide areas of argumentation, so it would be disingenuous to judge the new suggestions by the existing formal standards. This does not mean that Toulmin should not be held accountable for internal inconsistency, or that he should be exonerated from responsibility if he has made unjustified charges against formal logic or its practitioners. However, when Castaneda suggests that Toulmin has ignored the progress made in logic during the previous one hundred and twenty years, it is clear that he is at least overstating an impression he has formed. *The Uses of Argument* shows, even by its list of references, that Toulmin was cognisant of what had been happening in logic from the middle of the nineteenth century, but the developments to which Castaneda seems to be referring did not represent progress for Toulmin. It was precisely because academic logicians were taking their discipline further and further away from practical application towards an autonomy, based on mathematics, that he felt impelled towards a new departure. This dichotomy between the theoretical and the practical is apparent also in their respective attitudes to warrants. A warrant, according to Castaneda, “is not a statement; it is a licence or permission”,<sup>9</sup> and he instances the assertion, “Every Russian is ready to fight for his Motherland”, an utterance not originating with Toulmin, as an example of a statement which it would be “odd” to regard as a warrant. For Toulmin, however, context of time, place and circumstances is an essential consideration when evaluating his scheme or aspects of it. His objective is to demonstrate that the absolutist tendency of traditional logicians in framing timeless propositions is incapable of dealing with the relativities of human experience. Taken out of context, it is difficult to ascribe a particular function to the utterance, “Every Russian is ready to fight for his Motherland”. It might be a rallying cry to troops going into battle. If it is taken as a true statement (even “for the most part”), it could have the function of a warrant in the following dialogue:

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S.: We shall successfully defend Stalingrad. (Claim)

M.: How can you be so confident? Our equipment is poor, our food in short supply.

S.: We can rely on our troops. (Data)

M.: How can you be sure? It's a huge challenge.

S.: Every Russian is ready to fight for his Motherland. (Warrant)

In this case, the fact that every Russian is prepared to fight for the motherland provides permission, a warrant, to S to advance reliance on the troops as a support for the claim of success. Despite the fact that Castaneda seems determined to undermine Toulmin's definition and use of warrants, there is some reason to believe that there may be some common ground. While at one point Castaneda remarks, "a naïve reader of Toulmin, stuck with his ordinary use of warrant cannot help being bewildered by these peculiar warrants, which need no issuer and hold so universally",<sup>10</sup> in the following paragraph, he allows, "[s]ince the burden of the validity of the argument falls primarily on the major premise, we may say that it *functions* as a warrant or principle of inference, even though it is not a warrant or rule of inference, but a statement".<sup>11</sup>

As Toulmin is in the process of developing a structure that will deal with the probable and, indeed, the plausible, he frequently has to use warrants that are "true for the most part", rather than universal, and it is clear that he emphasises the *function* of the elements of his scheme rather than a lexical definition.

Having looked at a basic disagreement between Castaneda and Toulmin as regards definition and function, we must revert to what Castaneda labels C1, the principal charge levelled by Toulmin against traditional logic, i.e. that the customary formulation of the major proposition in the traditional syllogism conceals the difference between a warrant and its backing, a contention that is basic to Toulmin's motivation to develop a new form of argumentation.

According to Toulmin, expressing the major premise of a traditional syllogism in the form "All A's are B's" or "No A's are B's", (a) conceals the distinction between an inference warrant and its backing and (b) obscures the different types of backing.

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To illustrate this “hidden complexity”, he begins with the classic

All men are mortal.  
Socrates is a man.  
So, Socrates is mortal.

The universal premise exemplified here, “All A’s are B’s”, together with “No A’s are B’s”, are the forms on which logicians dealing with syllogistics usually concentrate, but for the purposes of his argument, Toulmin adds two other versions, “Almost all A’s are B’s” and “Scarcely any A’s are B’s”, forms which we are much more likely to use.<sup>12</sup>

Initially, Toulmin takes for example the “quasi-syllogism”,

- 1 Petersen is a Swede.
- 2 Scarcely any Swedes are Roman Catholics.
- 3 So, almost certainly, Petersen is not a Roman Catholic.

The second of these statements, “Scarcely any Swedes are Roman Catholics”, can legitimately be expanded in either of two ways as follows: (a) The proportion of Swedes who are Roman Catholics is less than 2%; or (b) A Swede can be taken almost certainly not to be a Roman Catholic. Substituting each of these in turn for “Scarcely any Swedes are Roman Catholics”, the following arguments emerge:

A            Petersen is a Swede.  
The proportion of Roman Catholic Swedes is less than 2%.  
So, almost certainly, Petersen Petersen is not a Roman Catholic.  
(i.e. **Datum**, **Backing** so **Claim** with the Warrant left unstated.)

and

B            Petersen is a Swede.  
A Swede can be taken almost certainly not to be a Roman Catholic.  
So, almost certainly, Petersen is not a Roman Catholic.

(i.e Datum, Warrant so Claim.) The two versions may, according to Toulmin, be presented in tidier fashion as:

A Datum: Petersen is a Swede.  
Backing: The percentage of Roman Catholic Swedes is minimal.  
Conclusion: Petersen is almost certainly not a Roman Catholic.

and

B Datum: Petersen is a Swede  
Warrant: A Swede is almost certainly not a Roman Catholic.  
Conclusion: Petersen is almost certainly not a Roman Catholic.

The same point can be illustrated by a consideration of the forms “All A’s are B’s”, etc,<sup>13</sup> i.e. that the usual form of expression in formal logic conceals a difference in *function* between the warrant and its backing and, as a result, in contrast with Toulmin’s layout, the argument may lack candour and transparency. The warrant *allows* the claim to be inferred from the datum, whereas the backing supplies the information which justifies the use of the warrant in question. This is, for Toulmin, a crucial aspect of the debate; the expansion of “All A’s are B’s” into “An A may certainly be taken to be a B” will always apply, i.e. it will be *field-invariant*; the factual backing on which the warrant depends will, on the other hand, be *field-dependent*. In the case of Petersen, it may, as here, be statistical, but in other cases it might be taxonomical, moral, legal etc.. In addition, and very significantly, the traditional form helps to conceal the full difference between *analytic* and *substantial* arguments, which is central to Toulmin’s entire project. It is necessary, he insists, to identify whether we are using *backing* or *warrant* in order to be sure whether we are dealing with a substantial or analytic argument; i.e whether it is the sort of argument where to check the backing is to check the conclusion, i.e. *analytic*, or an argument where this is not the case, i.e. *substantial*, which includes the vast majority of arguments. Toulmin’s position is that if logicians had paid more attention to the fact that genuinely analytic arguments are very rare, they might not have chosen the

*analytic* as the paradigm for all arguments. Earlier, he had claimed that professional logicians

have always hoped that it would prove possible to display arguments from different fields in a common form and to criticise arguments and conclusions as strong, weak, or conclusive, possible, probable or certain by appeal to a single universal set of criteria applicable in all fields of argument alike.<sup>14</sup>

The failure to distinguish, by the use of the syllogism in traditional logic, between the warrant, which permitted the inference, and its backing, had arisen from the quest for this “single universal set of criteria” and had resulted in the merging of two elements that should have been expressed separately.

Castaneda responds to Toulmin’s C1, outlined above, regarding the lack of clarity concealed in the usual formulation of the major premise of the syllogism, as follows:

(1) Toulmin, he says, does not acknowledge universal propositions or statements in the customary sense. Toulmin would, no doubt, reply that teasing out the hidden complexity” of the major, universal proposition is motivated by his intention to fashion a system or structure of argument that will deal transparently with real-life issues.

(2) Castaneda is adamant that a warrant is not a statement: warrants are permissions that are granted by agents and he considers Toulmin’s so-called warrants “peculiar”. In *An Introduction to Reasoning*, co-authored with R. Rieke and A. Janik, Toulmin amplifies the connotation of *warrant* which was implicit in the definition he advanced in *The Uses of Argument*.<sup>15</sup> The familiar statement, “Where there’s smoke, there’s fire”, can be rephrased as “Wherever smoke is visible, it can be concluded that there is a fire also”, and, he continues, “[s]uch a general step-authorising statement will here be called a *warrant*.”<sup>16</sup> Such a figurative use of the concept “warrant” was transparent in *The Uses of Argument*, and it is surprising that Castaneda should have been seeking agents to issue warrants when Toulmin was

clearly referring to *inferential* entitlement on the basis of verbal utterances. Indeed, to talk, as Castaneda does, about warrants being issued by institutions and being addressed to somebody, is to miss the point. Toulmin, echoing Aristotle, in language reflective of his own time, is claiming that when certain things are the case we are entitled to assert that certain other things follow. Certain states of affairs warrant the assertion of other states of affairs; literalist references to institutions granting warrants is somewhat disingenuous. In Toulmin's sense, established principles or propositions will justify an inference to a conclusion, necessary or tentative, as will, on occasion, widely held common opinion, social knowledge or, perhaps, "common sense".

(3) Toulmin, according to Castaneda, accuses customary logic of failing to distinguish between an argument form  $D, W \text{ so } C$  and  $D, B \text{ so } C$ , and since Toulmin insists that every argument must have a warrant ( $W$ ) he wonders how  $D, B \text{ so } C$  can be considered an argument at all. This epitomises, in a way, the radically different points of view of Toulmin and Castaneda. Toulmin is concerned with arguments that are in touch with lived reality; the use of initials to identify elements is merely convenient brevity. However, the argument can never become a matter of shuffling the initials to find a symmetric arrangement. The substantial argument, the predominant concern of Toulmin, is dependent on content for its cogency (even though on occasions its form may also render it formally valid). In any case, in response to the alleged absence of a warrant in the argument form  $D, B \text{ so } C$ , the organic form of argument which Toulmin envisaged might begin as an *enthymeme*, i.e.  $D, \text{ so } C$ , with the *implicit* premise supplied on demand. It was always clear, with Toulmin, that a good argument must have a warrant, *explicit* or *implicit*, but the context would dictate the warrant. The backing would be in the form of factual information, whereas the warrant "is more than a repetition of these facts: it is a general moral of a practical character, about the ways we can safely argue in view of these facts".<sup>17</sup>

(4) Castaneda maintains that, as regards *backing*, no logician has ever denied that "we have to support our major premisses independently of the syllogism in question", and that backings may be of different kinds.<sup>18</sup> Toulmin would, no doubt,

counter that, in the new dispensation, the backing would be an integral part of the argument structure and, so, transparent to possible scrutiny and rejection. Castaneda identifies Toulmin's second charge (C2) as follows: "The ordinary distinction between premisses and conclusion is a bad oversimplification which makes no room for rebuttals".<sup>19</sup> Castaneda's response to this, in the epilogue, is brief, the thrust of it being that "[n]o comment can be fairly made on Toulmin's C2", and the ensuing reference to Toulmin's comment on the "traditional pattern of analysis" suggests that there is some misunderstanding. In the context cited, Toulmin makes no reference to the distinction between premisses and conclusion; he is reprising the contrast between the traditional mode of analysis and his own (modelled on the jurisprudential). His more candid scheme (a) pays attention to the difference between warrants and rebuttals, and (b) by identifying the warrant independently of the backing, reveals the differences between different fields of argument.

The third charge, (C3) which Castaneda claims Toulmin makes against traditional logic, is best put in the context of Toulmin's presentation, rather than in the schematic fashion offered by Castaneda. Toulmin suggests that logicians "allowed themselves to be excessively impressed by the unique character of the analytic syllogism",<sup>20</sup> which is not only (a) analytical, but also (b) formally valid, (c) warrant-using, (d) unequivocal in its conclusion and (e) expressed in terms of logical connectives or quantifiers. This was adopted as the paradigm argument and, its five distinct features being conflated to the single "analytic", became, according to Toulmin, established as the deductive syllogism, the standard by which other arguments are to be judged. This is crucial to Toulmin's entire project because, he says, "by the time we reach this position, substantial arguments are beginning to look just about irredeemable".<sup>21</sup>

Castaneda summarises Toulmin's charge (C3) by pointing out that Toulmin has made the distinction between arguments that are either (a) *analytic* or *substantial*, but he has also made a distinction between arguments that are (b) valid, but not *formally* valid, (c) warrant-using or warrant-establishing, (d) conclusive or tentative or (e) characterised by the use of such special words as "all", "some", "no", etc..

C3: Ordinary logic has: (a) conflated those five distinctions and (b) taken the distinction between analytic and substantial as the only important one.<sup>22</sup>

In rebutting C3, Castaneda subjects Toulmin's contentions and definitions to close analysis, from which it becomes clear that Toulmin's selection of the traditional syllogism as his primary target is to ascribe unjustified limitations to other logicians. For instance, in response to Toulmin's assertion that logicians rely for formal validity, which is their only interest, on the "tidy shape" of their arguments, which, through "reshuffling" the premisses can produce validity, Castaneda counters by demonstrating with a series of arguments in symbolic form, that such is not the case. Toulmin's definition of "analytic" is shown not to coincide with that of other logicians, and Castaneda continues to find difficulty with the distinction which Toulmin seeks to make between warrant and backing. Castaneda agrees with Toulmin that words like "few" and "most" must be studied as regards their role in logical inference, and he maintains that no logician would disagree with Toulmin's contention that "not all arguments are analytic in which the word "all" appears in the major premiss or warrant".<sup>23</sup>

This last point reflects a suggestion that recurs in Castaneda's commentary on *The Uses of Argument*, i.e. that Toulmin has set up "straw men" among the practices of formal logicians and has overstated his case for the need for a new departure by at least exaggerating their inadequacies. Toulmin's preoccupation with the categorical syllogism, to the exclusion of all the other forms and structures employed by logicians, including his own contemporaries, would lend weight to this view. Castaneda defends the integrity of formal logic and logicians in accordance with their own terms of reference. Toulmin, with justification, seeks not its destruction but its replacement by a system that is fit for purpose in dealing with the substantial case-making that is necessary for the varied business of untidy human experience. Thus, notwithstanding the strictures articulated by Castaneda, when one returns to the Toulmin model one is impressed by the layout of argument, the clarification of

the constituent elements, the wealth of detailed, explanatory examples (albeit of a mainly singular type), the use of natural language in the service of argument, the underlying philosophical coherence and overall vision. Toulmin was aware that his “layout of argument” was a “work-in-progress”, and it remains to be seen what improvement has been, or can be, made to the model he provided.

### **Misunderstanding the Purpose of Arguments: J.L. Cowan**

Joseph L. Cowan had a broader target in his sights than Toulmin’s *The Uses of Argument*.<sup>24</sup> He wanted to correct the misapplications of the various elements of traditional formal logic, which, he believes, “are highly useful tools for the criticism of actual discourse and the conduct of actual enquiry”.<sup>25</sup> Toulmin provides a centre for his target, since, in Cowan’s opinion, *The Uses of Argument* rejects the parts of the tradition which should be retained and retains the damaging misinterpretations. Cowan fairly sums up Toulmin’s indictment of traditional logic by referring to the latter’s conviction that “its over-simple, over-rigid forms and categories are totally inadequate to the complexities of actual argumentation”,<sup>26</sup> and Cowan amplifies this to give a clearer picture of Toulmin’s criticisms of formal logic: formal logic does not provide sufficiently for real-life arguments which are probable or likely; when we claim certainty for our conclusions, we seldom claim that they have the certainty of analyticity, and “our actual arguments do not depend on some sort of geometrical form as traditional logic would have us believe”.<sup>27</sup>

Cowan refers to a specific feature of the Toulmin thesis, i.e. the distinction between analytic and substantial arguments, which has, allegedly, been overlooked by traditional logicians. Analytic arguments cannot move in the conclusion beyond what is contained in the premisses, whereas substantial arguments, the kind most commonly used, can, and do, lead to new information, knowledge or decision. Cowan recognises that Toulmin’s dissatisfaction arises from the fact that logicians have concentrated on the analysis of analytic arguments and that the Toulmin scheme is intended for the analysis of substantial arguments. He understands Toulmin’s position to be summarised as: “[w]hat is needed is a new and more comprehensive conception of form, one which will have room for the distinctions

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necessary to understand and evaluate substantial as well as analytic arguments.<sup>28</sup>

Having outlined the background to Toulmin's scheme, Cowan presents the scheme itself with informed commentary on the separate elements and the concept of *fields*, which is integral to the overall plan.

While the introductory information is detailed and fair, Cowan's first response is less than satisfactory. To illustrate the difficulty in deciding between a *datum* and a *warrant*, he offers a *disjunctive* syllogism:

Harry is either a British subject or a citizen of the United States.

He is not a citizen of the United States.

So Harry is a British subject.

He queries how it is possible to refer to one of these premisses as a "datum", and the other as a "warrant". In spite of the fact that Toulmin did not use the disjunctive form, it could still be justified to analyse the above as follows:

Datum:

Harry is not a citizen of the United States.

Conclusion:

He is a British subject.

Because

Warrant: (We know that) Harry is either a British subject or a citizen of the United States,

(which permits us to go from D to C, above). In any case, this is not a typical example of a substantial argument, the kind in which Toulmin is particularly interested; distinguishing *data* from *warrant* results from the identification of the intended *function* of the separate elements, rather than their semantic significance. In emphasising the difficulty in deciding between data and warrants, Cowan remarks that "in both cases it is rather a matter of what information we believe our respondent to have or need".<sup>29</sup> This, however, is to miss the genesis and potentially dynamic quality of the Toulmin model as it develops in a real-life situation: a claim is made, and, if challenged, the claimant will respond with what she considers

supportive or justificatory data; if the respondent cannot see the relevance or adequacy of the data, the claimant will offer a suitable warrant demonstrating the efficacy of the data in this case. The point, contrary to Cowan's suggestion, is not the claimant's belief about the state of the respondent's knowledge (although an alert rhetorician would take that into account when choosing supportive material for his claim). Rather, the intention is to convince the respondent by rational, well-structured argument. Of course, for an argument to have an outcome rather than a disengagement, the parties must have reference to similar cultural and informational backgrounds and share something of a common domain of discourse; otherwise there is no meaningful dialogue, and fruitful argument is not possible. Sometimes, through the dynamic of the interchanges, these features will become apparent, although the process may not be as streamlined as the exemplar arguments would suggest. Retrospective evaluation will show whether, when the untidy misunderstandings and initial ambiguities have been resolved, there is a well-established claim which has resulted from a rational structure.

In Cowan's opinion, however, the "*really basic defect*" (emphasis added) in Toulmin's approach is that "[h]e conceives argument as providing for its conclusion some quasi-legal kind of justification or legitimisation".<sup>30</sup> But Toulmin has failed, according to Cowan, as have others, to show "*how* conformity to the forms and procedures he outlines provide any support or justification at all".<sup>31</sup> Cowan has now recruited Toulmin into the ranks of those logicians against whom he wishes to pursue his case. They have, in his opinion, misunderstood the purpose of argument, which, Cowan maintains, is not to provide support or justification; rather, he declares, "Argumentation is Organisation".<sup>32</sup>

By now, it is clear that Cowan's attitude towards argument and inference is markedly different from that of formal logicians in general, as well from that of Toulmin. He dismisses *inference tickets* as without efficacy; he disposes of the notion of *justification* in the sense used by Toulmin and others as without effect; there is, he says, no difference between supporting a point of view with scientific information and justifying it on the basis of some superstition.

In a further dismissal of conventional attitudes to logic and inference, Cowan

insists that there is no “innate force” which makes combinations of statements yield tautologies or valid arguments. “It is, rather, that there are some propositions which we simply insist are to be considered true come what may. These we call ‘tautologies’. There are some groups of propositions of which we simply insist that, if some members are true, others must be. These we call valid arguments.”<sup>33</sup> This does not derive from anything deeper; our insistence that such are valid is the foundation. Our reason for so doing is that this ritual “provides organisation for our discourse and for the activities to which our discourse contributes”.<sup>34</sup> Toulmin’s criticism of, and desire to replace the traditional patterns of argument, including words like “all” and “not” etc., are, therefore, misplaced, according to Cowan. He goes on to insist that form is irrelevant to analyticity. While in normal discourse there may be a tendency towards certain verbal patterns, logicians push this tendency further and restrict the number of expressions they use. As a result, it is easier to detect a truth in a logician’s page than in a page of ordinary prose. Logicians, therefore, concluded that the form (which they had invented, rather than discovered) was the source of analyticity and validity. Toulmin’s strictures are, as a result, off target.

Perhaps Cowan’s clearest statement on the matter of analyticity is: “logic and mathematics are one. The laws of both are simply analytic statements, on the truth of which we simply insist”.<sup>35</sup> They are valuable because they facilitate the organisation of our utterances. It is the task of logicians to invent better ways of organising our thinking. Toulmin is wrong, therefore (following traditional theorising), in thinking that logic has simply described patterns of thought already in existence; but he is even more in error, according to Cowan, in thinking that there is only one pattern for argument when many patterns are needed for the variety of arguments demanding organisation.

In response to the latter, Toulmin would claim that the forms to which he has been objecting had become so calcified (“frozen calculi”), as to be incapable of accommodating real-life arguments, and he made it clear that he did not consider that the pattern he was developing was the only possibility. He was quite open to the possibility that, as regards the Toulmin model, “This form may not be final”.<sup>36</sup>

While Toulmin is a joint defendant as regards the charge that he and others misunderstood the concept of logical form, he is singled out for specific accusation in the matter of the development of the Toulmin argument model. Toulmin, according to Cowan, “completely misunderstood the question in the dialogue *he himself* presents to derive the pattern of argument from its uses”<sup>37</sup> (emphasis added). The reference here is to Toulmin’s exposition of the link between data, conclusion and warrant. The man who is given a datum leading to a conclusion, says Cowan, and asks, “How do you get there?”, is not looking for a warrant. “He wants a clearer organisation ... *how* it all fits together”<sup>38</sup> (emphasis added).

Cowan, here, seems to overlook the point that “How do you get there?” is an extension of the *metaphor* based on the notion of travelling with an “inference ticket”. But this figurative language, employed for purposes of exposition, should not be allowed to displace the *literal* intention. The underlying question of the expression, “How do you get there?” is “*Why* should such data lead to such a conclusion?”, and Toulmin is entirely justified in offering a warrant as a reason for such an outcome.

Finally, according to Cowan, the distinction that Toulmin makes between analytic and substantial arguments is not well drawn, and Toulmin’s reference to the irrelevancy of the analytic argument is unacceptable to Cowan. The analytic ideal, he maintains, is always relevant “whenever a tightening up of the organisation is called for”.<sup>39</sup> This runs counter to Toulmin’s view that such an approach would be tantamount to judging substantial arguments by criteria applicable to analytic arguments, and, by implication, to allocate the former an inferior status. In response to Cowan’s assertion that “argument is organisation”, and that valid argument is the best kind of organisation, Toulmin would insist that substantial arguments can be valid; and, given his commitment to the rational, he would support efficient organisation in the choice and presentation of material for argument. But he would not *define* argument as organisation; substantial arguments find support for claims in the relevant realms of reality, and the principal criterion of choice and presentation is substance, rather than neatness.

Their respective positions on analytic and substantial arguments results in

further disagreement. Toulmin insists that substantial arguments do not need redeeming; his preference is for “giving up the analytical ideal”.<sup>40</sup> Cowan maintains that it is the redemption of substantial arguments through constant checking of premisses which leads to the development of knowledge. Toulmin, however, would claim that, in some fields, “a time comes when we have produced in support of our conclusions data and warrants full and strong enough, in the context, for further investigation to be unnecessary”,<sup>41</sup> i.e. for a substantial argument to be conclusive; but when the context changes (with the provision of new facts, new insights, etc.), so, he would agree, may premisses, warrants and/or conclusions. As Cowan grants, Toulmin had put this view very clearly in his *Introduction to the Philosophy of Science* (1953). However, it is one thing to claim that a particular substantial argument needs to be, or can be, refined, modified, improved; it is quite another to suggest that the concept and structure of *the substantial argument* needs redemption so that it becomes analytic. This is the distinction which, above all, Toulmin was intent on establishing.

### **Wrong Method of Bringing Logic into Practice: P. Manicas**

Toulmin was not alone in his belief that logic needed to be made more relevant to common experience. In the conclusion to his remarks about Toulmin’s *The Uses of Argument*, Peter Manicas agrees, “Toulmin is clearly right in insisting that logic must be brought into practice”, but, according to Manicas, he is mistaken in the way in which he attempts to do this.<sup>42</sup> Manicas had earlier referred to Toulmin’s “absolutely correct observation that the larger class of arguments with which we are concerned in ordinary life are simply not deductions subject to the standards of formal validity”.<sup>43</sup>

In his opening remarks, he admits to sharing Toulmin’s feeling towards induction and, in large measure, is in agreement with “his overall conclusion ... that we should demand of claims to knowledge standards commensurate with the enquiry (rather than strictly analytic, mathematical standards)”.<sup>44</sup> However, Manicas expresses profound disagreement with Toulmin’s means of achieving his aims. At the time of writing (1966), Manicas had noticed that it was becoming common for

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Toulmin's model of argument to be taken up in textbooks and articles, and he wishes to examine the merits of this fashion. He takes a critical approach to *The Uses of Argument* on two grounds: (a) Toulmin's analysis of argument and (b) whether Toulmin's analysis is useful to debaters. (a) Analysis of argument: Manicas lays out Toulmin's "Harry" argument to illustrate his point:

(D) Harry was born		(C) Harry is
in Bermuda	→ so ,	(Q) presumably, → a British subject
	Since	Unless
(W) A man born in Bermuda		(R) Both his parents were aliens/ will generally be a British subject
		he has become a naturalised American

He begins his commentary by doubting the value of the *rebuttal*, as used here by Toulmin, claiming that in the foregoing argument "the conclusion has the same force with or without the rebuttal".<sup>45</sup> For Toulmin, however, the *rebuttal* has a quite distinct function from that of the *qualifier* (presumably). The latter will express the *force* with which the *conclusion* is being asserted; but if the *rebuttal* should be upheld, the *warrant* will cease to apply, and the argument will have to be withdrawn, or perhaps a new warrant might be brought forward. Manicas goes on to say that the argument could be rebutted by showing that the data was not true, that Harry was not born in Bermuda. However, if that were the case, the argument would not have progressed beyond the "data → so claim" stage; unless the data were accepted by the questioner, there would have been no request for a warrant. Toulmin specifically takes account of this situation; where there is disagreement about or non-acceptance of the data, there is scope for a *lemma*, a preliminary argument before the main argument can proceed. If no agreement can be found, the argument will be abandoned or, if the arguer is intent on establishing the claim, alternative supporting data will be introduced. In any case, the rebuttal, in Toulmin's scheme, comes into play as a precaution that will apply if the argument as developed, which by its nature is defeasible, should prove to be unviable because the warrant has become

inapplicable. The inclusion of a possible rebuttal is intended to provide greater candour to the argument, which was Toulmin's avowed aim. It might be questioned whether, in a hostile environment, a proponent of an argument would offer assistance to an opponent in the form of rebutting material; but a proponent might very well introduce the possibility of rebuttal when making an argument for a particular diagnosis or line of action in the course: for instance, of a medical case conference. One could envisage this happening in the course of formulating a legal opinion in order to anticipate a possible counter-argument. This would facilitate the provision of counter-rebuttals, a familiar situation for the proponent arguing in public, in face-to-face encounters, or even in the context of "the universal audience". A monologue in the formulation of scientific hypotheses would normally employ rebuttal and counter-rebuttal. The rebuttal, therefore, is an important element of the argumentation model, both as a rhetorical device and in the layout of argument, with as much transparency as possible.

A central criticism of the formal syllogism which motivated Toulmin was, as we saw earlier, the ambiguity of the major premise in the form "All A's are B's", which, he claims, obscures the difference between a *warrant* and its *backing*. Manicas takes the view that any ambiguity is caused by Toulmin's analysis, and he insists that the argument, "All A's are B's; x is an A ; so X is a B", could not be more transparent, and he refuses to accept the detailed distinctions that Toulmin's analysis provides.

Among the faults which Manicas finds with the Toulmin model are: (a) Toulmin "is content throughout his book to discuss only syllogisms with a singular premiss".<sup>46</sup> (b) By Toulmin's criteria it would be difficult if not impossible to identify warrants in a hypothetical syllogism or a linked argument; e.g. "If Robinson went to New York, then he took his wife, and if he went on business then he took his secretary. So, if he went to New York on business, he took his wife and secretary."<sup>47</sup> Manicas wants to know whether, in this flawless deduction, the premisses are data or warrants. (c) He shares Castaneda's view that Toulmin is incorrect in suggesting that formal validity can always be achieved by "shuffling" the parts of the syllogism.<sup>48</sup>

In Part 2, Manicas considers whether Toulmin's analysis of argument would be

of assistance to debaters and he concludes that it would be a mistake to think so. Debaters, in Manicas' opinion have little interest in the major questions of logical theory and philosophy raised by Toulmin and he goes on to imply that since Toulmin has failed to displace the traditional deduction/induction distinction and "his attempt to distinguish different 'functions' of the statements used in argument breaks down" then his model is of no assistance to debaters.<sup>49</sup> Writers who intimate otherwise are taken to task. Brockriede and Ehninger (who, by common consent were responsible for commending Toulmin to a wide audience,) are censured for their "confusion," i.e their claim that Toulmin is more useful to debaters than the structure derived from Aristotle and traditional logic. This, according to Manicas is very faint praise and ignores all the developments in formal logic during more than two thousand years. After this negative critique Manicas surprises by his assertion that "most of the arguments which we encounter in everyday life must be judged for their correctness not on the basis of their logical form, but on the basis of extra-formal-logical considerations",<sup>50</sup> and he allows that this is the position which Toulmin has been espousing.

Among his suggestions for future developments in this area, are consideration of (a) "*criteria of relevance*" for material in support of conclusions in non-deductive arguments, and (b) questions concerning the *acceptability* of material in support of conclusions in non-deductive arguments. In his early insistence that logic is concerned with the acceptability of our conclusions, his presentation of fields of argument which yield supportive material of the appropriate kind, and his recognition that the provision of the correct supportive material will require judgment and experience, Toulmin had anticipated this advice; and it is significant that the concepts of *acceptability* and *relevance* in the context of argumentation have continued to be discussed and refined to the present day.

### **Pushing Contextualism Too Far: R. Abelson**

One early respondent who was not alienated by Toulmin's "revolutionary" approach, but who still felt the need to write "In Defence of Formal Logic", was Raziell Abelson.<sup>51</sup> Abelson, who considered *The Uses of Argument* "a brilliantly

original study”,<sup>52</sup> summarises Toulmin’s criticisms of traditional logic, points out what he regards as weaknesses in Toulmin’s own position, and finally outlines a possible compromise.

Abelson highlights some of what he considers to be the more significant features of Toulmin’s approach to logic and argumentation, e.g. that “[l]ogic is not a theoretical science but a group of practical skills and that its principles are not a priori laws, but specific and context-bound rules for successful inferences”.<sup>53</sup> He identifies what he sees as a claim of central importance to Toulmin’s position, i.e. that logicians have been motivated “by the mistaken assumption that correct reasoning is the same thing as formally analytic reasoning”.<sup>54</sup> The wrong direction was taken as a result of undue deference to mathematics and, as a consequence, an increasing gap has opened up between logicians and those engaged in practical argumentation.

Abelson’s account, redolent of the desire for even-handedness and compromise, is of the opinion “that there is a good deal of truth and at least an equal amount of error in Toulmin’s theory of logic”.<sup>55</sup> He identifies as important two points which Toulmin makes: (a) logicians should tackle the problems of improving inferences in fields of practical inquiry; (b) syllogistic logic and the various calculi of formal logic are not of much use in dealing with complex arguments outside mathematics-related fields. This is not say, however, that formal logic has no function or that logic does not exist outside its role in practical use. If this were the case, if there were no patterns of logical inference outside what happens in particular fields; the non-professional would have no way of knowing whether or not the lawyer or the doctor was rationally assembling data and drawing reasonable conclusions from them.

Abelson finds that Toulmin is pushing such contextualism too far, as in the following: “validity is an intra-field, not an inter-field notion. Arguments within any field can be judged by standards appropriate within that field, and some will fall short: but it must be expected that the standards will be field-dependent”.<sup>56</sup> Abelson reads this as an indication that Toulmin is conceding to the experts in any field the exclusive right to decide on the validity of arguments within that field, i.e. not just to

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provide empirical evidence for a point of view, but to have propriety of the methodology of argumentation within the field in question. If this were to be the case, he claims, there would be no place for logicians and there would be no scope for outsiders, including philosophers, to question claims advanced by those within the field.

Abelson, seeking a middle ground, is prepared to grant Toulmin that there are “standards of evidence in each field of enquiry that depend somehow on the nature of the field”.<sup>57</sup> The standards of evidence may be field-variant, but, he insists, this does not mean that rules of inference are field-variant. *Modus Ponens*, for example, applies independently of empirical facts, and even though in informal argumentation the line between fact and logic may sometimes be breached, this does not mean that we should cease to make the distinction between “the province of logic and empirical enquiry”.<sup>58</sup>

It is important to be as clear as possible on Toulmin’s account of this issue. On the one hand, he sets out a structure that will accommodate a wide range of arguments in the fields of science, politics, medicine and aesthetics. When the system is rigorously applied, according to Toulmin, the outcome will be a conclusion worthy of acceptance, whether *necessary* or *probable*. On the other hand, he suggests that the practitioners in any field can add, not just to the sum of knowledge within that field, but to the inferential methodology by which the knowledge-content of the field is increased. It is on this basis that he promotes the principle that validity is an intra-field not, an inter-field, notion, and he insists that

[t]o understand the logic of physics is all of a piece with understanding physics. *This is not to say that only professional physicists familiar with the latest theories can discuss the principles of that logic, since most of these are the same in elementary as in sophisticated branches of the science, and can be illustrated as well by historical episodes as by present-day ones*<sup>59</sup> (emphasis added).

This implies strongly that he is advocating a system of inference which is not

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detached from its subject matter, since there is an assumption that the arguer will have some familiarity with the topic, and that there is no place for the logician *as such* submitting a piece of argumentation in a particular field to logical analysis. Indeed, Toulmin goes on to say that one who would participate in the analysis of political philosophy, ethics, or philosophy of religion, should become more aware of the current state and history of the discipline in question. This seems a reasonable demand to make of an agent who would advance a claim and be asked to justify it on the basis of sound data, with a relevant and adequate warrant. However, it does relegate the work of the logician to a peripheral domain. This is the polarisation which prompts Abelson to devise a compromise between the Toulmin model and the universal laws of proof espoused by the formal logician, “between a purely formal logic that has no practical value, and a practical, context-dependent logic that really isn’t logic at all”.<sup>60</sup> He envisages a spectrum of inference types, with pure logic at one end and empirical enquiry at the other:

Pure Logic:	Practical Logic :	Empirical Science:
↓	↓	↓
Constructing analytical inference patterns	The province of both logic and empirical enquiry	Derivation (by any means) of true conclusions from true data and laws

In co-operation, logicians and empirical enquirers would decide on the formal operations appropriate to a given field of enquiry, or on fashioning new methods that would improve the technique applicable to the analysis of any field. Given Toulmin’s declaration that the proper business of both epistemology and logic “is to study the structures of our arguments in different fields and to see clearly the nature of the merits and defects characteristic of each type of argument”,<sup>61</sup> it seems likely that he would be sympathetic to Abelson’s suggested compromise.

A selection of initial reactions, therefore, to *The Uses of Argument* would suggest that there was a negative reception from logicians. Clearly, according to some, it added nothing to logic as traditionally understood; it was mistaken with

regard to many of its criticisms of formal logic; even on its own terms, it was confused, and commentators had difficulty in distinguishing one feature of the argument scheme from another (e.g. data from warrant). In the opinion of Manicas, it would be of no help to debaters; according to Cooley, the fact that it can have everyday application does not make it as significant as Toulmin thinks it is, and the examples furnished by Toulmin (e.g. Petersen and Harry) make it appear that “very little is at stake”.<sup>62</sup>

### **Rhetorical Utility: Brockriede, Ehninger and Trent**

Considering the overall negative response to *The Uses of Argument* from logicians in the formal tradition, it would not have been surprising if the work had sunk without trace or, to use Toulmin’s own echo of David Hume, “had fallen still-born from the press”. However, there were those who could discern merit in the Toulmin model, and were prepared to assume Toulmin’s invitation, or challenge, to take forward the work he had initiated. Among these were Brockriede and Ehninger, who considered that Toulmin’s analysis and terminology were important for two reasons: (1) they provide an appropriate structural model by means of which rhetorical arguments may be laid out for analysis and criticism; (2) they suggest a system for classifying “artistic” proofs which employs argument as a central and unifying construct.<sup>63</sup>

Artistic proofs are those that call on the inventive powers of the arguer to provide adequate warrants to legitimate inferences, in contrast to “inartistic” proofs, which proceed immediately from data to claim.

Brockriede and Ehninger compare the Toulmin layout with traditional logic, to the advantage of the former. Among the strengths they identify are the fact that in the Toulmin model both material and formal factors are laid out clearly and “probable” arguments are accommodated; arguments in traditional logic are, they say, designed to arrive at universal propositions.<sup>64</sup> Furthermore, traditional logic is static, whereas Toulmin conceives of argument as dynamic, working through his functional terminology; and the layout means that each step is open to critical examination so that it is less likely that weaknesses will be hidden. While the model is open to the charge “that it makes little or no provision to insure (sic.) the formal

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validity of claims”,<sup>65</sup> the writers conclude that “Toulmin has provided a structural model which promises to be of greater use in laying out rhetorical arguments for dissection and testing than the methods of traditional logic”.<sup>66</sup> The second principal claim which Brockriede and Ehninger make is that the structure and vocabulary of Toulmin’s model have a unifying effect by making it possible to group the sources of warrants to be employed. This is seen most obviously in relation to rhetorical arguments, which the writers classify as (a) substantive (traditionally *logical*), (b) authoritative (traditionally *ethical*), (c) motivational (traditionally, *pathetic*). These categories are further analysed, e.g. substantive arguments will arise from relationships between phenomena in the world, such as *cause to effect*, as *some to more*, etc. and the writers detail how these relationships will generate warrants derived from concepts based on *cause*, *sign*, *generalisation*, *parallel case*, *analogy*, *classification*. (The association of this classification with *topoi* is acknowledged.)<sup>67</sup> The authors provide worked examples to show how the Toulmin model has the unifying force of bringing each type of artistic proof (where warrants have to be drawn from an appropriate source) within each category into “a single invariant pattern using argument as a unifying construct”.<sup>68</sup> In a further advance towards a systematic ordering of argumentation based on the Toulmin model extended by themselves, Brockriede and Ehninger draw up a taxonomy of debatable topics, e.g. whether something exists. What is its nature? What value has it? Which policy or course of action should be pursued? Each category will give rise to a particular kind of claim which, in turn will be supported by selecting from the range of arguments alluded to earlier. When they have tabulated the co-relation between the kinds of claim that may be advanced with the kinds of argument which they have identified, they have, they suggest, contributed to a logical system of argument which responds to the need for a rational organisation of dispute resolution. This has been achieved on the basis of the Toulmin model; their amplifications and extensions are intended as a development of his “contemporary methodology”, and their expectation is that this development will be advanced by successors.<sup>69</sup>

Such a successor was Jimmie D. Trent, one of whose declared intentions was “to extend Toulmin’s reasoning regarding syllogisms and forms of argument”.<sup>70</sup>

This includes the intention to offer variations on the Toulmin model in order to make it more useful in dealing with material validity. Trent's starting position, however, is different from that of Brockriede and Ehninger's, with which he was acquainted.

One of the first points that Trent makes is that Toulmin's concept of probable arguments is essentially an enthymeme or epichireme, and he goes on to suggest that what distinguishes Toulmin's model from syllogistic epichiremes is (a) his understanding of probability and (b) "his omission of support for the data or minor premiss".<sup>71</sup> As regards *probability*, Trent correctly notes that, for Toulmin, it refers to the amount of commitment that a speaker is prepared to make to the claim he has advanced. Traditionally, unqualified premisses would lead to an unqualified conclusion; with Toulmin, unqualified premisses can lead to a qualified (probable) conclusion as a result of a rebuttal, rendering the conclusion less than certain. In the traditional syllogism, any qualification would have appeared in the major premise. However, having made this point, Trent goes on to assert that it has little significance as it has been effectively ignored in some textbooks.

In his effort to show that there is really nothing much new about Toulmin's schema, and to re-establish it as syllogistic, Trent may have overlooked a crucial aspect of Toulmin's approach. Toulmin's argument has its origin in a *claim*; a challenge will bring forward *data*; it is to be expected that the data so produced will be *relevant* and, at least in the opinion of the arguer, *adequate*. That may have to depend on a *warrant* if the challenger is not convinced of their relevance or adequacy, but that stage will not be reached if the challenger does not accept their factual correctness. Toulmin had anticipated this situation by providing for a *lemma* or subsidiary argument to gain agreement on the facts. If this is not possible, the argument cannot continue. When, subsequently, the argument is laid out as Toulmin recommends, the data will have been agreed, and no qualifier or support will be necessary. Trent's criticism that Toulmin made no provision for support for the data is misplaced.

Trent's suggestion that the *rebuttal* is of little significance, and could form a qualifier of the *warrant*, also suggests misunderstanding. Again, it is important to take note of the organic quality informing the Toulmin argument. A claim is justified

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on the basis of agreed data in accordance, if necessary, with a relevant warrant which applies universally or for the most part. The arguer may, in making the argument as transparent as possible, introduce the possibility of a rebuttal, i.e. a set of circumstances which would make the warrant inoperable or inapplicable to the current question at this time. However, the arguer is proceeding on the basis that the data are acceptable, the warrant is applicable, and therefore the claim is justified unless the challenger can demonstrate, by way of rebuttal, that the warrant does not apply. The onus of proof is on the challenger.

It is this developmental quality that distinguishes the Toulmin model from the syllogism, which, by its nature, is a static product. The Toulmin model as laid out also has the appearance of a product, but it has been produced by a dialectic interaction, whether that interaction takes place in a single mind, in a face-to-face transaction, or between a potential rhetor and an imagined or universal audience. The Toulmin model is, therefore, different from the syllogism in its genesis, its elements, structure and function, and it would be difficult to justify Trent's assertion that, as the Toulmin model is basically a syllogistic structure, "It is necessary to know the structure of a syllogism to construct a Toulmin model".<sup>72</sup> A Toulmin model, as illustrated above, could arise in a natural manner from a contentious claim or in the preparation of a potentially persuasive address without any reference to a syllogism, although it could embody an enthymeme without a conscious choice or reference to the concept "enthymeme".

Trent is correct in pointing out that the appeal of the Toulmin model (during the ten years since its publication) appeared to be related to its "emphasis on material validity which is achieved by de-emphasising formal validity".<sup>73</sup> However, he doubts its efficacy for examining material validity: because there is no support for the data statement, the argument is not complete, and, he believes, dealing with disagreement about the data by a separate argument will lead to fragmentation. Furthermore, he seems to think that such an argument would, in most cases, lead to an inductively established data statement which would, in the main argument, merit a qualifier, and the Toulmin model does not provide for such. Obviously, in Trent's view, the procedure would be to start with a support statement for the data; but as

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the argument starts with the claim and data is produced in response to a challenge, neither the data nor the possible support are available in advance. Toulmin could not be clearer about this, that the primary business of logic is *retrospective* and *justificatory*, that it has to do “with the arguments we can put forward afterwards to make good our claim that the conclusions arrived at are acceptable, because justifiable, conclusions”;<sup>74</sup> and again, “we shall be interested in justificatory arguments brought forward in support of assertions”.<sup>75</sup> This is quite different from the movement of the syllogism, where premisses, previously assembled, *lead* to a conclusion; with Toulmin an assertion, a claim is advanced and support for it is then assembled. How the claim was arrived at originally may be irrelevant. It might have been a mere intuition, but once it has been seriously uttered, it calls for retrospective justification by the choice of convincing data and, where called for, illuminative warrant.

True to his stated intention, Trent does provide what he regards as extensions of the Toulmin model in the form of epichiremes, which provide variation in support of each of the main elements identified by Toulmin. The results do lead to acceptable conclusions from the layouts as proposed, and can deal adequately with *probable* outcomes. Trent would, no doubt, contend that adding support for data takes care more effectively of the degree of probability transmitted to the conclusion. However, once the data have been modified to obviate disagreement or garner assent, the modification itself may require justification and give rise to infinite regress.

The final type of argument which Trent offers is referred to as a *Rhetorical Epichireme*, which, he claims, is the most commonly used in the presentation of arguments. According to Trent’s instructions, an example would be diagrammed as follows:

(Data) Anne is one of ———— Since (warrant) ———— Therefore (inference)  
Jack’s sisters.    Jack’s sisters will all    Anne’s natural hair colour  
                         have red hair as their    is red.  
                         natural hair colour.

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The permissive form of the warrant is clearly derived from Toulmin, and is identical in layout, as regards the material terms to Toulmin's early example:

Harry was born in Bermuda —————>Harry is a British  
subject

|  
Since  
|

A man born in Bermuda will be a British subject

The difference in the Toulmin example is that “the *explicit appeal in this argument goes directly **back** from the claim to the data* relied on as foundation”<sup>76</sup> (emphasis added).

Trent's view is that Toulmin did not provide a complete argument structure, and sees his own contributions as improving the template which Toulmin has begun. In particular, he maintains that support for data should be included, as this is the area to which most arguers give attention. It is not difficult to envisage a structure containing such an elaboration and qualifiers, where necessary, for each element, but it could easily become unmanageable.

### Summary

This chapter has given details of a representative sample of the re-actions to *The Uses of Argument*. The attitude to Toulmin's radical treatment of argumentation during its first decade was mainly hostile from those defending traditional formal logic; on the other hand, those whose main interest lay in practical argumentation gave it at least a qualified acceptance. Within five years of its publication, Toulmin was able to respond, not to the details of criticism, but in general terms:

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The book has... been most warmly welcomed by those whose interest in reasoning and argumentation has had some specific practical starting-point: students of jurisprudence, the physical sciences and psychology, among others. Whether the implications of my argument for logical theory and philosophical analysis will become any more acceptable with the passage of time remains to be seen.<sup>77</sup>

He would hardly have considered that, more than half a century later, his work would remain relevant to the debates on these and related matters.

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1. Boger, George (2005): Subordinating Truth – Is Acceptability Acceptable?; *Argumentation* (2005), No. 19, pp.187/238. p.229.
2. Castaneda, Hector N (1960): On a Proposed Revolution in Logic; *Philosophy of Science*, Vol.27, No.3, (July1960), pp.279/292.
3. *ibid.*, p.279.
4. *ibid.*
5. *ibid.*
6. *ibid.*
7. *ibid.*, p.281.
8. Toulmin, S.E. (1958); *The Uses of Argument*. Cambridge University Press, p.1
9. *ibid.*, p.281.
10. *ibid.*, p.283.
11. *ibid.*
12. *ibid.*, p.108.
13. “All A’s are B” example: (A) Datum: Toulon is a French rugby team. Backing: French rugby teams have been in international finals regularly during the past ten years. Conclusion Toulon is a world-class rugby team. (B) Datum: Toulon is a French rugby team. Warrant A French rugby team will (can be taken to) be world class. Conclusion Toulon is a world -class rugby team.  
The backing for the warrant could be that Toulon is a very wealthy club and can buy the best players from overseas, it has the best facilities, the local climate greatly favours their training, local pride motivates, etc..
14. Toulmin, S. E. (1958) *The Uses of Argument*. Cambridge University Press, p.39.
15. Toulmin, S.E., Rieke,R, Janik, A. (1979) *An Introduction to Reasoning*. New York, Macmillan.
16. *ibid.*, p.44.
17. Toulmin, S.E., (1958) *The Uses of Argument*. Cambridge University Press, p.106.
18. Castaneda, Hector N.(1960) On a Proposed Revolution in Logic; *Philosophy of Science*, Vol.27,No. 3 (July 1960), p.284.
19. *ibid.*, p. 280.
20. Toulmin, S.E. (1958) *The Uses of Argument*, Cambridge University Press, p.149.
21. *ibid.*, p.153.
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24. Cowan, J.T. (1964) The Uses of Argument; An Apology for Logic; *Mind* , New Series, Vol.73, No. 289, (Jan. 1964), pp.27/45.

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25. *ibid.*, p.27.
26. *ibid.*, p.28.
27. *ibid.*
28. *ibid.*, p.29.
29. *ibid.*, p.30.
30. *ibid.*, p.31.
31. *ibid.*
32. *ibid.*, p.32.
33. *ibid.*, p.34.
34. *ibid.*, p.36.
35. *ibid.*, pp.37/38.
36. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.104.
37. Cowan, J.L. (1964) The Uses of Argument – An Apology for Logic; *Mind*, New Series, Vol.73, No. 289, (Jan.1964), p.39.
38. *ibid.*
39. *ibid.*, p.43.
40. Toulmin, S.E. (1958) *The Uses of Argument*, Cambridge University Press, p.234.
41. *ibid.*
42. Manicas, P. (1966) On Toulmin's Contribution to Logic and Argumentation; *Journal of the American Forensic Association*, Vol. 3, (Sept. 1966) pp.83/94, p.94.
43. *ibid.*, p.91.
44. *ibid.*, p.83.
45. *ibid.*, p.84.
46. *ibid.*, p.87.
47. *ibid.*, ft.note (a) p.88.
48. *ibid.*, pp.89/90.
49. *ibid.*, p.92.
50. *ibid.*, p.93.
51. Abelson, R. (1961) In Defence of Formal Logic; *Philosophy and Phenomenological Research*; Vol. 21, No. 3, (Mar.1961), pp. 333/346.
52. *ibid.*, p.333.
53. *ibid.*
54. *ibid.*
55. *ibid.*, p.338.
56. Toulmin, S.E. (1958) *The Uses of Argument*. Cambridge University Press, p.255.
57. Abelson, R. (1961) In Defence of Formal Logic; *Philosophy and Phenomenological Research*, Vol.21, No.3 (Mar.1961), pp.333/346. p.341.

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59. Toulmin, S.E. (1958) *The Uses of Argument*. C.U.P., pp. 258/9.
60. Abelson, R. (1961) In Defence of Formal Logic; *Philosophy and Phenomenological Research*, Vol.21, No.3 (Mar.1961) pp. 333/346 p.346
61. Toulmin, S.E. (1958) *The Uses of Argument*. C.U.P., p.255.
62. Cooley, J.C. On Mr. Toulmin's Revolution in Logic, *The Journal of Philosophy*, Vol.56, No. 7, (Mar.26<sup>th</sup>.1959) pp.297/319. p.311.
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65. *ibid.*, n.5 p.47.
66. *ibid.*
67. *ibid.*, n.6 p.47.
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## Chapter 5. Toulmin and the pragmatics of Informal Logic

Although Toulmin did not design *The Uses of Argument* (1958) as a contribution to informal logic or argumentation theory, it was taken as such by communication theorists, especially in North American colleges. Rejected by formal logicians, his approach to argumentation became available at a time when there was an increasing demand for a system that could help construct, analyse and evaluate arguments dealing with real-life issues. The half-century following the appearance of *The Uses of Argument* has witnessed a huge increase in the overlapping activities of critical thinking and informal logic/argumentation. The purpose of this chapter is to demonstrate the extent to which Toulmin's work has remained central to the informal logic project. This will involve a comparative review of contemporary attitudes and Toulmin's to a range of features of argumentation at play during the twentieth century, e.g. the tension between formal and informal logic; the evaluation of arguments and the substitution of "acceptability" for "truth" in this process; the role of fallacies in argumentation; the nature and role of argument schemes; the struggle for definition; and precise use of language in informal logic. This review will culminate in a survey of attitudes to the Toulmin model delivered at a conference on *The Uses of Argument* and published as *Arguing on the Toulmin Model* (2006).<sup>1</sup>

As the amount of work on informal logic during the twentieth century has been so extensive, it will be possible to make reference only to a selection of representative practitioners whose credentials in the field are well established. One such has been Douglas Walton, whose *Fundamentals of Critical Argumentation* (2006) promises to provide a template by which the practical skills and attitudes involved in critical argumentation can be enhanced. "The methods presented," he tells his readers, "are based on the latest state-of-the-art techniques developed in argumentation theory and informal logic",<sup>2</sup> which suggests that the best of previous developments will have been incorporated. Since he is introducing a textbook, it is to be expected that the material will be laid out in a form suited to pedagogical purposes. Walton, involved in the discipline of informal logic for decades, intends to

emphasise the practical, and to provide examples of a realistic kind. For this present commentary, Walton's textbook will be used as a benchmark against which to judge the continuing centrality or comparative irrelevance of Toulmin's treatment of argumentation in *The Uses of Argument* and, later, in light of ongoing developments. Using this one text for purposes of comparison is unlikely to produce a comprehensive picture; nevertheless, citing the various elements of argumentation with which it deals, and making reference to the extent to which they have been developed during the second half of the twentieth century, according to Walton's "state-of-the-art" treatment, ought to provide a reasonable estimate of how Toulmin's work remains vibrant in the context of contemporary productions. Such an exercise will also make it possible to look at Toulmin's work against the background of other representative work in argumentation, especially as regards aspects of the field not covered by Walton in this text, some features of the topic having been held over to be dealt with in subsequent texts.

Although Walton (2006) claims that this text has "the kind of depth needed by a text-book that is based on an established scholarly discipline",<sup>3</sup> it is a textbook intended for practical formation of arguing skills, and it is not to be expected that it will necessarily provide the background philosophical rationale to the same degree as Toulmin did in *The Uses of Argument*; by his own admission, Toulmin was primarily engaged in a philosophical dispute with contemporary protagonists of analytic philosophy in Britain.

### **Tension between Formal and Informal Logic**

Despite the anticipated limitations referred to, one could expect to be able to pinpoint the salient aspects of argumentation theory which Walton identifies as such, and discover the extent to which progress has been made since Toulmin began his targeted exploration of argumentation of a non-deductive kind. Toulmin's point of departure was the recognition that formal deductive logic was inadequate as a vehicle for the conduct of the kinds of argument that occur regularly in social, political, jurisprudential, medical, artistic and professional life generally. The operation of formal logic was, in his opinion, confined within narrow limits. A

similar position was taken by Charles Hamblin (1970), who asserted that the formal logician's concept of proof, "a display of formula of his system is not to be taken as a model of rational argument".<sup>4</sup> Similar views were expressed by some of the foremost in the field: Howard Kahane (1971), who had taught formal logic, became convinced the "the crucial steps in most arguments in daily life are not deductive", and set out to develop a pattern of reasoning that would be effective in dealing with social and political issues.<sup>5</sup> Although R.J. Fogelin (1982/78) includes details of the categorical syllogism and the square of opposition in *Understanding Arguments* (1978/82), he acknowledges that "this theory is, in most cases, difficult to apply directly to complex arguments in daily life",<sup>6</sup> and the main thrust of his work is through the medium of informal logic. Likewise, Michael Scriven, in *Reasoning* (1976), admits to having come to the conclusion that "[o]ne has to regard with great scepticism the view that formal logic is likely to improve reasoning skill. What it improves is skill in doing formal logic".<sup>7</sup> Neither the traditional syllogism nor propositional calculus is close enough to reality to deal with everyday argument, and skill in reasoning is developed, according to Scriven "by staying close to real examples".<sup>8</sup> Although some of the participants in the theory and practice of argumentation, presumably because of their background training in formal deductive logic, continued to present aspects of that discipline as part of their treatment of argumentation, they had come to see, as Toulmin had earlier, that the deductive ideal was irrelevant to most of the situations which give rise to disagreement and, hence, to argument. Walton (2006) also, for the sake of completeness, provides an outline of deductive reasoning, with the variety of syllogisms and Venn diagrams for testing validity. He does, however, grant that what he refers to as plausible, presumptive, defeasible argument, while "less precise and reliable" than deductive or inductive argument, "is often more useful and even necessary in many cases in the practical conduct of affairs of everyday life".<sup>9</sup> While going along with most of what Walton says here, Toulmin would be likely to have reservations about the ascription of less precision and reliability to presumptive, defeasible arguments, the sort he would describe as "substantial". Substantial arguments are the only kind available, in the vast majority of cases, where there is scope for argument. Toulmin's project was to

try to make this kind of argument as candid and secure as possible. In spite of that apparent difference of view or emphasis, it seems clear that in the course of development of informal argument during recent decades, the attitude adopted by Toulmin has been vindicated, even if his alternative to formal deductive logic has not gained totally uncritical and universal acceptance.

### **Definition and Precision of Language**

One of the principal goals and achievements of the informal logic movement has been the return to the use of natural, rather than artificial, language in the formulation of arguments. This was seen as an essential concomitant to the intention to deal with arguments of an “every-day” variety, and which would be an integral part of social, political and professional life. The translation of propositions into symbolic language to be processed by formal deductive logic had rendered the exercise self-referential, and Toulmin was not alone in wanting to reclaim natural language for the conduct of real-life argument. Even before *The Uses of Argument* (1958), Crawshaw-Williams (1957) had displayed his interest in the kind of statements that “are made and disputed every day”, and which are “neither mathematical nor so obviously factual that we settle them by direct appeal to experiment or (sometimes future) observation”.<sup>10</sup> For him, language was “an instrument of reason”.<sup>11</sup> For Howard Kahane (1971), the movement towards informal reasoning became a matter of social commitment; the use of language that could communicate clearly and directly was essential for the formulation and criticism of arguments related to public affairs. This was not the interest of a dilettante; Kahane was convinced that engagement in, and vigilance concerning, social and political matters by a well-informed populace are necessary “to ensure the success of a democratic form of government”.<sup>12</sup>

Emphasis on the use of natural language in the conduct of significant argument inevitably involved the necessity for *definition*. The desire to achieve maximum clarity through the use of widely accepted symbols had made of formal deductive logic an instrument of reasoning as rigorous as mathematics, and almost indistinguishable from it. When the perceived disadvantages of such a system led to

a return to natural language, it was clear that definition of terms and clarification of process would be essential. Toulmin took advice from Aristotle and introduced *The Uses of Argument* by outlining the nature of the project: “First we must state the subject of the enquiry and what it is about”.<sup>13</sup> For Walton (2006), definition is still causing difficulty; finding universally accepted definitions for such commonly used words as “democracy”, “liberal”, “abortion” and countless others, has proved almost impossible. One consequence is that interminable semantic arguments may arise before the substantial issues can even be reached. Walton suggests that definition be looked at from three points of view: lexical, i.e. agreed dictionary definition; stipulative, i.e. arbitrary, as in statute law; and persuasive.

The drive for refinement of definition had been ongoing from an early stage of the informal logic movement. Toulmin, introducing familiar terms with novel connotations offered, at least in some cases, detailed accounts of his intentions, always taking into account the element of *context* in assessing the meaning of words and, therefore, the acceptability of claims. Defining “definition” itself was, however, a preoccupation for Arne Naess (tr. 1960), who set out a method by which mutual acceptance of meanings would be guaranteed between participants in argument. For him, context was no less significant than it was for Toulmin. In *Communication and Argumentation*, he maintains that “an expression’s meaning always depends in part on its relationship to other expressions and events, in other words, its context”.<sup>14</sup>

Naess is very specific in his illustration of how, in the course of a discussion which might lead to disagreement and argument, an interlocutor might seek to establish common ground by responding to a claim  $T_o$  as follows: “If by  $T_o$  is meant  $T_1$ ,  $T_o$  is acceptable. But if by  $T_o$  is meant  $T_2$  or  $T_3$  etc.. then  $t_o$  is not acceptable”.<sup>15</sup> The attempts to obviate misunderstanding and create a basis for critical discussion based on shared understanding was intended to achieve greater efficiency in reasoning, and Naess provides what he believes is a method for arriving at the greatest degree of precision in the use of natural language. This process he labels “precization”, which details the manner in which very close analysis of expressions reveals the core meaning around which consensus can be built. However, he warns against “misplaced zeal in precization”, as the preliminaries to

conducting a substantial argument may prove too cumbersome.<sup>16</sup>

With the shift from formal deductive logic to informal logic/argumentation, much effort was expended on the definition of the central concepts and processes. If one asks, “What do you understand by argument?”, for example, a systematic clearing of the undergrowth must take place to rule out colloquial notions and arrive at a formulation which deals with verbal disagreement over points of view, desire to persuade by rational means, achieve consensus by claim and critical questioning, etc. When the question arises, “What is informal logic?”, it is customary to respond in terms of “formal logic”, or simply “logic”, as traditionally understood, with analysis of “formal”. The term “logic” had been subjected to description and definition for millenia, yet Toulmin redefined this fundamental concept in accordance with the insight which he brought to *The Uses of Argument*. Subsequent contributors to the emerging discipline offered their descriptions, or definitions of what they believed they were engaged in when embarking on informal logic/argumentation. S.N. Thomas (1973), for instance, defined argument as “any discourse in which some statement is given as a reason for some conclusion”,<sup>17</sup> while for Michael Scriven (1976), arguments are meant to persuade, and they will succeed if they “[s]tart off with premisses that are known to be true or can be shown to be true and go on to show the way these premisses force one to accept the conclusion or conclusions”,<sup>18</sup> which is reminiscent of the remarks of Quintilian:

Therefore, since Argument is proof-giving reasoning, by which one thing is inferred from another, and which confirms what is doubtful by that which is not doubtful, there must be something in the Cause which does not need proof; for unless there is something which is or seems to be true, and from which assurance may be given to what is doubtful, there will be nothing by which we can prove anything.<sup>19</sup>

Trudy Govier (2001), taking into account the contingency of statements of alleged facts, considered that an argument is “a set of claims ... put forward in an attempt to show that some further claim is rationally acceptable”.<sup>20</sup> While Walton (2006), in the

preface to his purported “state-of-the-art” account, stipulates that “[a]rgument is defined as the use of reasoning in different types of goal-directed conversational exchanges called dialogues”,<sup>21</sup> he later specifies that an argument is “a set of statements put forward by one party in a dialogue in reply to an expression of doubt posed by the questioning or opposed argument of the other party in the dialogue”.<sup>22</sup> He had earlier, clearly influenced by the pragma-dialectical doctrine, seen argument as a “social and verbal means of trying to resolve, or at least to contend with a conflict or difference that has arisen or exists between two parties”.<sup>23</sup>

While these remarks are based on the notion of argument as dialogue and a search for resolution, Ralph H. Johnson (2000) wants to take the matter a bit further, proposing that

An argument is a kind of discourse or text- the distillate of the practice of argumentation- in which the arguer seeks to persuade the Other of the truth of a thesis by producing the reasons that support it. In addition to this illative core , an argument possesses a dialectical tier in which the arguer discharges his dialectical obligations.<sup>24</sup>

Van Eemeren and Grootendorst (2004), summarising decades of work in the field of critical discussion, declare that argumentation is “a verbal, social and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by putting forward a constellation of propositions justifying the proposition expressed in the standpoint”.<sup>25</sup>

Clearly, no single definition has encompassed the range of arguments and forums, or contexts in which they may occur, but the common elements include a social, verbal activity promoting a point of view with the support of reasons. In *The Uses of Argument*, Toulmin equates logic with reasoned argument, and *definition*, as with the definition of *ethics* in his earlier work, will be based on function, rather than semantics. He tells us, therefore, that the primary business of *logic* is “a retrospective, justificatory one, – with the arguments we can put forward afterwards to make good our claim that the conclusions arrived at are acceptable, because

justifiable ones”.<sup>26</sup>

Toulmin has been the recipient of negative criticism in the matter of definition. It has been claimed, for instance, that he offers various accounts of the central element of his argument model, the *warrant*, and the model has been faulted because of the alleged difficulty of distinguishing *data* from *backing*. Toulmin, influenced by Wittgenstein’s attitude to language use, discusses the meanings of concepts in the context of the *function* for which they are to be employed, and is painstaking in his analysis of such modal terms as “cannot”, “probably”, etc.. He does stipulate meanings for terms such as “analytic” and “substantial” arguments, where he is allocating specific meaning/functions to terms in common use. Some difficulty may arise from the discursive nature of the Toulmin analysis of words and issues; his detailed explications and examples are intended to lead to clarification mainly in terms of *function* rather than static lexical meaning. This dynamic approach is carried over to *Introduction to Reasoning* (1979), where Toulmin et al., taking account of the target audience/readership, fulfil the conventions of providing explications, rather than classic definitions, as they leave matters open for possible future developments. “Argumentation”, for example, “will be used to describe the whole activity of making claims, challenging them, backing them up by producing reasons, criticising those reasons, rebutting those criticisms and so on”.<sup>27</sup> This is followed by what seems closer to definition, i.e. the delimiting of the essence of *reasoning*: “the central activity of presenting the reasons in support of a claim so as to show that those reasons give strength to the claim” and an argument as a train of reasoning: “the sequence of interlinked claims and reasons that between them establish the content and force of the position for which a speaker is speaking”.<sup>28</sup>

The foregoing comparative assessment of Toulmin’s contributions to the definition of argumentation, and its components against the backdrop of the contributions of other theorists and practitioners, indicates that the Toulmin vision of argument can encompass the views of the prominent representatives of the field. From the rhetorical stance of Perelman and Olbrechts-Tyteca, for whom the object of argumentation is to discover techniques that will allow us “to induce or increase the mind’s adherence to the theses presented for its assent”,<sup>29</sup> to the resolution of

dispute by conforming to detailed rules of argument as set out in later systems, at the heart of the process is the rational justification of a claim against actual or potential criticisms. The forums may differ; arguments may be mounted in law-courts, boardrooms or at diagnostic conferences. The dispute resolution may be decided by an impartial judge on the basis of arguments advanced; the claimant may gain concession from a single critical questioner; the rhetor may achieve persuasion of a homogenous company of professionals or a disparate crowd united by a single issue. The Toulmin model can be adapted to each of these situations and challenges, and the kinds of definitions and examples he has provided make this possible. The paradigmatic argument, conducted in accordance with the protocols specified by Walton or the promoters of the pragma-dialectic system, is unlikely to be realised in any real-life circumstances. It is a theoretical model, whereas the function of theory for Toulmin is to produce a workable instrument to be brought to bear on practical affairs. Each element of the Toulmin model in its description and function reflect this focus on the actual, and this is underlined by the introduction of the *rebuttal*. We saw earlier that in R.H.Johnson's definition an argument must have an *illative core* and, in addition, it must have a *dialectical tier*, i.e. the arguer is under an obligation to take account of an opponent's objections. Toulmin, by including the *rebuttal* as a feature of his model of argument, had anticipated this: the rebuttal provides for, and gives opportunity to, deal with objections to a warrant by an actual opponent, or possible objections which an arguer might identify and pre-empt in the preparation of an argument.

### **Argument Today: Logical, Dialectical, Rhetorical**

Differences in definition can be traced to the emphasis placed by practitioners on the logical, dialectical or rhetorical character of argument. Toulmin's original model, although comparatively limited as regards the range of examples provided, can be shown, because of its adaptability, to be centrally relevant to this ongoing debate. This capacity for employment in a range of argumentative situations is highlighted by the contrasting, or perhaps complementary, estimation of Toulmin's position by his contemporaries.

## Chapter 5

Van Eemeren et al. (1996), viewing the matter from the pragma-dialectic point of view, conclude that “[a]lthough the model has some dialectical features, Toulmin’s angle of approach is primarily rhetorical”.<sup>30</sup> Tindale (1999), a standard-bearer for the dominance of the rhetorical in argumentation theory, was of the opinion that Toulmin’s “general model ... has been very influential as a new standard of *logical* thinking”(emphasis added), but “he has been influential among scholars of rhetoric and communication”.<sup>31</sup> Tindale had previously reflected the views of Perelman and Olbrechts-Tyteca, and indeed Aristotle, in asserting that, as well as seeking to gain adherence to his point of view, “the theorist of rhetorical argument is motivated by the further goals of human development and understanding”.<sup>32</sup> These assessments suggest that the Toulmin approach crosses the boundaries of the logical, the dialectical and the rhetorical. (Tindale maintains that a complete theory of argumentation would embrace all three, the rhetorical being foundational.)<sup>33</sup> The adaptability of the Toulmin model can be illustrated by the presentation of a scenario in each of the suggested modes:

1. Logical: Summary of Report on Fatal Accident. The death of the front-seat passenger in the fatal single-car accident at Strait Way was due to driver error. The driver was an untested, unlicensed teenager, and most accidents result from driver error, according to statistics from the Road Safety Authority. Analysis:

Claim: The driver of the car that crashed at Strait Way, in which the passenger dies, was almost certainly responsible.

Data: The driver was young, untested, unlicensed.

Warrant: According to statistics, almost all road accidents are caused by driver even when drivers are experienced.

2. Dialectical:

A. Did you hear about the crash at Strait Way?

Q. Yes. The front-seat passenger was killed.

A. The crash was almost certainly caused by driver error.

Q. You can't say that! Have you any evidence?

A. The driver was an untested, unlicensed teenager.

Q. Why does that make you so sure?

A. You can take it that driver error, even by experienced drivers, causes almost all road accidents.

Q. Are you sure about that?

A. Yes. The statistics from the road safety authority are clear.

Analysis: In this dialogue the Arguer makes a claim and supports it while the Questioner challenges the claim and the purported justification.

Claim: (A) The crash was almost certainly caused by driver error.

Data: (A) The driver was an untested, unlicensed teenager.

Warrant: You can take it that driver error, even by experienced drivers, causes most accidents.

Backing: The statistics from the Road Safety Authority are clear.

Modal Qualifier: *almost certainly*.

3. Rhetorical: address (oral or written) to target audience (readership): I would advise you as strongly as possible to enrol for driving lessons and pass your driving test before you decide to drive on the public road. Recently a car crashed into a tree at Strait Way, killing the front seat passenger. The official report says that the cause of the crash was driver error. While nobody likes to lay blame on an individual in cases like this, we must take note of the statistics from the Road Safety Authority, which tell us that the great majority of road accidents result from driver error, and in this case the driver was an untested, unlicensed teenager.

## Chapter 5

You may ask: “What about the state of the road surface?”. “Was the car road-worthy?”. “Could the car have been struck by lightning?”. You can be assured that these, and other possibilities, have been investigated and eliminated. *At this time*, the conclusion remains that the crash was caused by driver error. Analysis:

Exhortation: Pass your driving test before you drive on public roads.

Argument supporting exhortation:

Claim: Driver error was the cause of a recent fatal road accident.

Data: The driver was an untested, unlicensed teenager.

Warrant: It is a well-known fact that the great majority of road accident result from driver error.

Backing: Statistics from the Road Safety Authority support the warrant.

Rebuttal: Possible rebuttals (other causes) are anticipated and neutralised.

Modal Qualifier: The phrase, “at this time”, indicates that even though there is a very high degree of probability attending the claim, it is, nevertheless, potentially defeasible by the emergence of new facts.

While, therefore, Tindale and van Eemeren may differ in defining the category most theoretically appropriate for the Toulmin model, i.e. whether it is to be defined as Logical, Dialectical or Rhetorical, in practice, the model can be seen to be adaptable to all three modes. Moreover, the remark by van Eemeren and Grootendorst (2004) that, unlike in dialectic, in the Toulmin model “the other party remains, in fact, passive”, seems difficult to justify.<sup>34</sup> To be a critical listener, the adversary/questioner must participate, and it is clear that the paradigmatic exercise of the Toulmin model envisages a situation in which *claims* are challenged by a critical listener (actual or putative), *data* may be questioned, *warrants* have to be located and justified by *backing*, all in response to a “critical listener”. The very foundation of the model has Toulmin, in the guise of the putative listener/adversary, posing the dialectical question in answer to a claim, “What have you to go on?”, and then challenging for a licence to be produced by asking, “How do get there?”.<sup>35</sup>

### **Argument Evaluation and the Rise of *Acceptability***

With the development of informal logic the evaluation of arguments became a matter of crucial concern. Formal deductive arguments could be checked for validity on the basis of their form alone. Arguments within the domain of informal logic, however, were not amenable to such evaluation, and estimation of their efficacy would depend on the perceived empirical support which underpinned their conclusions. Furthermore, the notion of data or conclusions being “true” began to be replaced by the concept of “acceptable”. The Toulmin model was central to these considerations and a subject of criticism as regards its evaluative efficacy. Abelson (1960) had objected on the grounds that, in the Toulmin academy, evaluation of arguments would be left to experts.<sup>36</sup> According to *Fundamentals of Argumentation Theory* (1996) (van Eemeren, F.H. et al. eds.), “Toulmin’s model has been widely accepted as a useful model for analysing argumentation, not so much as a model for its evaluation.”<sup>37</sup> The fact that Toulmin’s model had not been widely accepted for its evaluative strength is not the same as saying that Toulmin had not offered a basis for evaluation; van Eemeren et al. are very clear in their earlier overall assessment of the Toulmin model and its efficacy in the matter of judging the value of arguments. Acknowledging that Toulmin interprets “valid” in a less technical sense than is customary, they point out that, “Sound argument... is to Toulmin, argumentation conducted in accordance with a formally valid procedure and in conformance with the specific soundness conditions of the field or subject concerned”.<sup>38</sup>

Walton (2006) makes it clear that evaluation will receive less attention than it needs in his “state-of-the-art” book, as it will be dealt with more comprehensively in a later text. Nevertheless, there are some instances of argumentation evaluation in the present volume, and some suggestions from earlier work by Walton which help to form an estimate of the concept of evaluation in informal logic, as Walton sees it. In “What is Reasoning? What is an Argument?” (1990), he maintains that when reason is being used probatively, as opposed to explanatorily, it is seen as “a sequence of steps from some points to other points” with a “goal proposition”.<sup>39</sup> Evaluation of the quality of the reasoning will be on the basis of its success in establishing, or failing to establish this goal. In *Fundamentals of Critical*

*Argumentation* (2006), Walton gives considerable attention to *relevance* of supporting material as a central component of the apparatus of argumentation evaluation. This would put Walton in the mainstream of evaluation theory. In *A Practical Study of Arguments* (1984/2001), Trudy Govier commends the A.R.G. rule of thumb for the evaluation of arguments, i.e. the argument must contain *acceptable* supporting material; the material must be *relevant*, and provide “*good grounds*”.<sup>40</sup> Earlier, Hamblin (1970) had favoured the notion of *acceptable* over *true* premises, and later, Christopher Tindale (2004) was convinced that “in the realm of argumentation, if we are to progress towards our goals we must concentrate on the question of acceptability”.<sup>41</sup> For Ralph H. Johnson, the illative core of an argument, the part that purports to offer support to a claim, will be evaluated on the basis of “acceptance, truth, relevance and sufficiency”.<sup>42</sup> The inclusion of *truth* as a criterion drew criticism from David Hitchcock, for whom “the predicates of *truth* and *falsity* simply do not apply to many theses for which people argue”.<sup>43</sup> Absent the criterion of *truth*, which was, at best, disputed, from the evaluative scales, the criteria emerging from the works referred to, i.e. acceptability, relevance and sufficiency would accord with Toulmin’s aspiration for premisses/supporting material for arguments constructed on his model. In *The Uses of Argument*, Toulmin had stipulated that logic is concerned “with the arguments we can put forward ... to make good our claim that the conclusions arrived at are *acceptable* because justifiable conclusions”<sup>44</sup> (emphasis added).

Acceptable conclusions would be justified on the basis of acceptable premises, and this acceptability was dependent on the field in question, presumably on the basis of expert knowledge related to the field. However, Toulmin’s own examples of argument concerning Harry’s citizenship, Petersen’s religious affiliation, or the colour of Anne’s hair, suggest a range of arguments associated with social interactions which would not involve expert knowledge of the kind associated with, for example, academic disciplines. Even in such a case, for example physics, Toulmin does not exclude the “lay person” from participation in, or evaluation of, such arguments. In the matter of physics, he points out that the principles remain the same from elementary to advanced levels. This issue, however, would require

further consideration, and there are good reasons to conclude that Toulmin does not see everybody engaging in every sort of argument. In certain companies, as Aristotle would advise, critical discussion on a rational basis may not be possible. The central point of significance here is that, for Toulmin, evaluation of substantial arguments, by far the most common type, cannot be mechanical or decided by formulae; *substantial* arguments must be evaluated on the basis of *substance*, provided they have been laid out or conducted in accordance with a rational procedure. This fundamental view is as operative among the current practitioners of argumentation theory, as when it emerged from *The Uses of Argument*. In the meantime, much effort has been expended on the definition of terms such as “relevance”, “acceptability”, “sufficiency” and “truth”. Patrick Bondy (2010) proposes “to discuss the role that truth plays in the evaluation of arguments when the purpose of arguments is understood as truth-directed in some important way”.<sup>45</sup> He recognises that “most theorists have dropped either the validity requirement or the truth requirement or both”,<sup>46</sup> although he can cite some who still formulate the purpose of argument as having some *truth* content.<sup>47</sup> However, he is not claiming that the purpose of arguments is “to establish the truth of their conclusions beyond all doubt”; rather, the purpose is to reach a conclusion “that is most rational, from the point of view of the participants in the argument, to take to be true”.<sup>48</sup>

George Boger (2005), encompassing the substance of Toulmin’s and other informal logicians’ dissatisfaction with formal deductive logic, claimed: “[w]hile argumentationists maintain that formal logic’s adherence to soundness and embracing a Platonist absolutism renders it irrelevant, their critics maintain that informal logic’s adherence to acceptability results in a pernicious relativism that renders it duplicit”.<sup>49</sup> The age-old questions remain: how is a statement/proposition to be shown to be true, or, if a claim is deemed to be *acceptable*, by whom is that judgment to be made? Boger is negatively disposed towards the *universal audience* of Perelman and Olbrechts-Tyteca, nor is he impressed by the *model interlocutors* of Blair and Johnson.

It has become increasingly difficult to justify the criterion of *truth* as applied to premisses leading to a conclusion; the tyranny of the search for incontrovertible truth

or certainty can lead to infinite regress or result in total scepticism rather than enlightenment. Bondy may be correct in his inclination to endorse the view that the “internal purpose of arguments... is truth directed”.<sup>50</sup> Theoreticians of argumentation presume goodwill, integrity and the intention to engage in “good” arguments, i.e. arguments that are not fallacious by design or inadvertence. However, the movement away from formal validity has not merely replaced formality by informality. In dealing with a wide variety of human experience, the structure of formal logic is considered inapplicable. Demanding that premisses be *true* is seen as impracticable and unnecessary in the process of gaining agreement, through rational argument, with a point of view. This is not to say that truth will be disregarded in a cavalier fashion, or that known untruths, or even carelessness as regards “facts-of-the-matter” will be admitted to the academy of argumentation. Such a development would violate the presumptions which are the bedrock of, and facilitate all personal, social and professional life. A presumption that people intend to communicate facts rather than untruths is as foundational as the presumption that promises ought to be kept. It is, accordingly, rational to consider acceptable a claim supported by reasons which are accepted as relevant and sufficient, or against which one cannot mount an argument that satisfies relevance and sufficiency, and this may involve *convergence*, i.e. where separate strands of data lead to the same conclusion. For Toulmin, conclusions are acceptable because they are justifiable. The justification will be in the form of rational argument containing acceptable data. To avoid the spectre of infinite regress some boundaries must be established to make possible the vital social activity of argument while attempting to ensure the optimum outcome. The following considerations have a bearing on this.

If one advances a claim on the basis of alleged facts, it may be instantly accepted because both arguer and questioner have received identical data from the same trusted source. No further checking for truth will seem necessary. If a questioner refuses to accept data, even if what is being offered is self-evident, then no argument can proceed as there is no longer an engagement with a rational process. If the arguer advances data on the basis of personal observation, the questioner may display trust and accept the data as offered. To complete the

argument satisfactorily the data must, of course, fulfil the conditions of relevance and sufficiency. To be acceptable, the data must be commended on the basis of self-evidence, reliability of source, personal observation, common knowledge, or the outcome of a cogent inductive argument of some kind. In circumstances other than the self-evident, there must be willingness to accept some data on some fiduciary basis; if the arguer must *prove*, i.e. establish the *truth* of each datum, there will be infinite regress, and no argument could proceed. In such circumstances, the activity of argumentation, vital in personal and professional contexts, would be frustrated. Even juries in court proceedings must accept the evidence of witnesses' eyes and ears, or decide in particular instances not to do so, indicating, thereby, that there are acceptable and unacceptable data. The decision as to which is which, will depend on input from "those in a position to know", evidence from "reliable sources" and "expert testimony". In all of the cases the ethos of the testator, however established, will be part of the *acceptability* criterion. Demanding the standard of analytic, formal deductive logic greatly inhibits decision-making in such situations.

In the legal field, among the most rigorous of disciplines, considered by Toulmin to be the paradigm forum of argumentation, the standard for accepting that "something is the case" is either that it is so "on the balance of probabilities", or in circumstances from which the most serious consequences may flow, it is so "beyond a reasonable doubt". Human experience has modified the criteria by which such judgments are made, and centuries of refining have brought the common-law rules of evidence to their present stage of development. The rationality of the process is emphasised by consideration of earlier methods of determining guilt or innocence, e.g. trial by combat or trial by ordeal. No doubt, further refinement will take place as flaws become manifest or increasing enlightenment occurs. The point is that criteria for *acceptability* are a product of human judgment, and will, as Toulmin insisted be "field-dependent".

In the field of science, where expensive personnel and facilities will be an issue, commensurate conditions of rigour apply to the identification of hypotheses worthy of testing. In case conferences regarding patients' health, at board meetings to decide on investment, wherever major issues are at stake, rigorous systems of

argumentation will be in operation to establish factual analysis and preferred prescriptions, as far as this is possible at any particular time. At some point in each of these exercises, an acceptable outcome will emerge. The facts on which a decision will be based may or may not be true, but, supported by adequate relevant evidence, they will be deemed acceptable as a statement of a particular state of affairs needing or meriting a particular response.

Since a trustworthy outcome cannot be guaranteed by the *form* of the informal logician's argument, Toulmin maintains that this can be best achieved by clearly laying out the passage from support to conclusion in accordance with the model which he has developed and using the criteria of acceptability that are operative in the field or discipline appropriate to the field in question. The jurisprudential norms have been in the making for millennia, and the conduct of scientific arguments are more and more subject to the protocols developed for particular specialisms and sub-specialisms. Equally critical discussion in the boardroom will be sharpened by experiences of significant success and failure informed by a growing body of theory arising from detached reflection. While it is clear that inter-personal trust will be destroyed if scientific proof is demanded of statements made in an informal setting, the standards of acceptability within individual forums will continue to become more rigorous with the increase of knowledge and expertise. According to Toulmin, "great logical innovations are part and parcel of great scientific, moral, political or legal innovations".<sup>51</sup>

The relevance of context is constantly emphasised by Toulmin in seeking to establish standards of acceptability. The matter is taken up again by Toulmin et al. (1979) in *Introduction to Reasoning*. Rational pursuit of knowledge will, at any time in history, begin with certain presumptions; experience may show such presumptions to be capable of refinement in order to become more widely explanatory, for example, or new information may throw new light on historical events. Our willingness to adopt such refinements must be rationally justified by acceptable arguments, and these arguments will be accepted on the basis of the prevailing standards of the field or discipline in question. The conventional criteria for acceptability will include relevance and adequacy of the support being offered

for the claims being made, and these concepts will not be defined in terms of timeless absolutes. Rather, according to Toulmin et al., “at any given moment...some established repertoire of argumentation procedures ... scientific, legal or whatever ... possesses rational authority for the time being and so carries weight within the corresponding enterprise”.<sup>52</sup>

Toulmin, in producing the model of argumentation and the background against which it would operate, was not neglectful as regards the evaluation of arguments; they would be evaluated in terms of layout and substance. Furthermore, he had anticipated much of the discussion that has taken place concerning the truth and acceptability of data and conclusions. His approach would be at one with that of the leading practitioners because his main concern is with substantial arguments, the kind that admit of argument and, consequently proceed by way of a combination of facts, well-formed opinions and judgment arising from experience. Toulmin would also be sympathetic to some of the conditions and procedures laid down by contemporary practitioners of informal logic. No doubt he would support the “principle of communication” which, according to pragma-dialecticians, must govern the conduct of arguments. As articulated by the leading exponents of the pragma-dialectic system of argumentation, van Eemeren and Grootendorst, this principle insists that those participating in a critical discussion will be committed to “standards of clarity, honesty, efficiency and relevance”.<sup>53</sup> Toulmin, one can reliably claim, would embrace such standards; painstaking analysis of elements of his theories was a feature of his early work as he attempted to achieve the standards referred to above rather than merely prescribe them. He would also have, to some extent, taken for granted the rules for argumentation requiring qualities such as civility and fairness; but he would have found repressive, if not totally unworkable, the list of guidelines and rules specified by the pragma-dialectic strand. Considering that he intended his model of argument to have a practical value in use in everyday arguments, he would agree with van Eemeren and Grootendorst that the procedure they have prescribed “is too technical for immediate use by ordinary discussants”.<sup>54</sup>

### **Toulmin and Fallacious Argumentation**

The device of using Walton (2006), with its “state-of -the-art” treatment of informal logic, as a benchmark against which to judge the relevancy of Toulmin’s approach to argumentation in contemporary terms, is not usefully available in the matter of Fallacies, a feature which has come to be a significant area of research and application within the informal logic movement. Indeed, its significance is such that Walton (2006) postpones consideration of Fallacies to a separate volume. However, there are contemporary accounts which help in assessing Toulmin’s relative position, but the modern accounts must be seen in the light of the changed perspective on Fallacies since a number of fallacies were categorised by Aristotle.

Aristotle had listed as “fallacies” arguments which appear to be satisfactory but which, on analysis, are seen to be flawed. In the *Topics* (162b 2-15), he identified as false, arguments which appear to be brought to a conclusion but are not; arguments that are brought to a conclusion but not the conclusion proposed; and arguments that come to the proposed conclusion, but not according to the mode of enquiry appropriate to the case. Aristotle does allow that a true conclusion can be reached on the basis of false premisses. This characteristic of the syllogism would increase the conviction that formal deductive logic had little to contribute to what Toulmin would call “substantial” arguments. However, *fallacy*, as a feature of argumentation, became a promising area for research, to be integrated into the informal logic movement, particularly following Hamblin’s *Fallacies* (1971), in which he presents an account of the treatment of logical fallacies since Aristotle. Hamblin was impatient with the fact that Aristotle’s list of thirteen fallacies, with minor modifications, was still being produced in logic textbooks, as he considered that “the traditional treatment is too unsystematic for modern tastes”.<sup>55</sup> Increasingly, the practitioners of informal logic came to share his dissatisfaction with the “standard treatment”. There needed to be clarity about what it meant to construct or analyse a fallacious argument. Fallacies could arise from technical incorrectness, e.g. a breach of the distribution rules of the traditional syllogism, or reaching a conclusion by denying the consequent in a conditional syllogism. In the field of informal logic, however, fallacies were most likely to arise from ambiguity of language, or from a failure to provide adequate support for a claim that had been advanced, e.g. making

a hasty generalisation, or employing an unconvincing analogy.

Siegel and Biro (1992) take a straightforward view: “[i]f argumentation must be understood as a means to acquiring knowledge”, the “fallacies must be understood as suffering from epistemic failure”.<sup>56</sup> What they refer to as the “hoary” definition of a fallacy, i.e. “an argument that seems to be valid but isn’t”, is no longer respectably tenable; conceived as a flaw in *formal logic*, it does not depend on the substance or context of the argument content. Biro and Siegel are promoting a normative (rather than a descriptive) theory of argument: “[a]n argument aims at, and a good one succeeds in leading an enquirer or an audience from some proposition/s whose truth or justifiedness they accept, to others whose truth or justifiedness they will see themselves as having good reasons to accept on its basis”.<sup>57</sup> So defined, “arguments are essentially epistemic objects and their essential failures, in whatever variety they come, are also epistemic”.<sup>58</sup> This, of course is not the full story. A rhetorical argument may fail to persuade, and thus be defective for reasons that are not necessarily epistemic, and the argument may not, therefore, be fallacious. But Biro and Siegel emphasise the rationality of arguments: “[e]pistemic success is a matter of justification which, in turn, is a matter of rationality”.<sup>59</sup> A good argument, they insist, will render belief in its conclusion rational, i.e. justified, because it offers good reasons. An argument that fails to warrant its conclusions by good reasons is fallacious. There may be a name for the particular fallacy involved, or the list may have to be increased. This reminds one of Toulmin’s assertion that “arguments are acceptable because justifiable”,<sup>60</sup> and also of his advice that logic and epistemology should move closer to each other: “the proper business of both is to study the structures of our arguments in different fields, to see clear the nature of the merits and defects characteristic of each kind of argument”.<sup>61</sup>

If Walton (2006) did not provide the “state-of the-art” criterion on the *fallacy* element of argumentation, Christopher Tindale (2007) intends to give an account of fallacies “by means of the latest research in the field, along with some of the standard ideas that have remained relevant since Aristotle”.<sup>62</sup> Noting some dissatisfaction with the “label/description” treatment of fallacies, Tindale raises the question “of whether a form of argument must always be fallacious in order for it to

count as a fallacy, or whether fallacies are problematic variants of arguments that can have quite legitimate instantiations”.<sup>63</sup> What becomes clear from Tindale’s exposition is that, in the realm of informal logic, the traditional labels cannot be applied without careful analysis of individual instances, as there are legitimate instantiations of so-called fallacies. An example of one such “classic fallacy” is presented by Willard (1990), i.e. the fallacy of arguing from authority. Having outlined the range of information from a variety of disciplines that goes into public decision-making, he remarks:

Disciplinary actors and public decision-makers alike face a dilemma: in a consensualist world, acquiescence to authority is the rational thing to do ... indeed often the preferred course; yet the medieval logicians’ chief reason for seeing the argument-from-authority as a fallacy is still plausible.<sup>64</sup>

The argument from expert authority may be fallacious, or it may be entirely reliable. The task of the questioner, when such an argument has been advanced, is to attempt to test the trustworthiness of the testimony offered, and this will not be done in accordance with some formula. Toulmin’s advice is relevant here: telling sound arguments from untrustworthy ones rather than consistent from inconsistent ones requires experience insight and judgment. His espousal of the jurisprudential exemplar for argument is significant in this regard: the testing of “expert” testimony in the law courts has been a crucial feature of the analysis and evaluation of arguments in this field.<sup>65</sup>

While Toulmin did not deal with the topic of traditional fallacies in his seminal *The Uses of Argument* (1958), the treatment of fallacies does feature in *Introduction to Reasoning* (1979), co-authored with R. Rieke and A. Janik. Because this account of argumentation is directed towards students, it is not surprising to read that “[n]o discussion of practical reasoning is complete that does not consider some representative examples of fallacies and enquire what makes them fallacious”.<sup>66</sup> The authors insist that they will not be able “to identify any intrinsically fallacious forms

of argument”<sup>67</sup> since some argument schemes will be valuable in one forum and context and fallacious in another (e.g. argument from authority referred to above), and there will always be new ways of engaging in faulty reasoning. In contrast with the timelessness and ubiquity of truths of formal reasoning, context of time and place are centrally relevant to claims and conclusions in the practice of informal reasoning. Nevertheless, a list of conventional fallacies is presented, e.g. *hasty generalisation, false analogy, ad hominem* etc..

It should, of course, be taken into account that the driving force behind the Toulmin model of argument is to set out arguments as candidly and transparently as possible, and this process, relying on substantial data, warrant and backing, rather than form, will at least call into question, if not definitively evaluate, arguments for claims that may be fallacious, e.g. Hasty Generalisation:

Claim: A’s are unintelligent.

Grounds (data): The thirty and more A’s with whom I have worked were all unintelligent.

Warrant: My random encounters with members of an ethnic group entitle me to draw conclusions about the group as a whole.

Backing: The degrees of likeness and difference between individuals and subgroups of any ethnic group being what it is.<sup>68</sup>

The original claim may have been a response to experience made with conviction, but without reflection. The challenge to set out the warrant and backing must give pause for serious reconsideration and the realisation that the argument in support of the claim is open to devastating refutation if it is widely known that there are millions of A’s. Toulmin et al. would classify the above as a fallacy resting on “unwarranted assumption”.<sup>69</sup>

Another kind of fallacy would be the result of uncertainties and ambiguities in the use of language. Such fallacies, perhaps inadvertent, are caused by the employment of multiple meanings of a word in the same, or related, contexts; careless syntax choice; or change of emphasis; interpretation of figurative language

in a literal manner. As the exposition of fallacy of the first kind can be achieved by the practical layout of the argument to spotlight the inherent level of support, or lack of it, for the claim, the development of language skills provides the best means of becoming aware of the fallacies of the second kind: “[t]he person with the greatest facility for detecting ambiguities will, most likely, also be the one who is most attuned to the nuances of words and their usage”.<sup>70</sup>

Fallacies of the sort which arise from a breach of the rules of formal logic such as govern the use of the categorical syllogism (e.g. failure to distribute terms properly), or affirming the consequent of a conditional syllogism, will be spotted simply by the application of a rule; in the case of informal reasoning, fallacies will be identified by the systematic layout of the argument, application of well-developed linguistic skills and knowledge of the material in question, just as, according to Toulmin, the best guarantee of *producing* a good argument is the “experience, insight and judgment” of the arguer in the field in question.<sup>71</sup>

While Toulmin et al. (1979) provide examples of some of the common fallacies (e.g. “false cause”, “false analogy”, various “ad” fallacies and fallacies that arise from ambiguity), they do raise caveats: *context*, rather than a label or some formula, will determine whether a particular argument is fallacious or not. The increasing prominence of fallacy theory in informal logic has resulted in detailed analyses of individual fallacies, as well as commentary on fallacies in general. The fact that this field has broadened to the extent that it has is a function of the increasing recognition of the applicability of informal logic to such a vast array and variety of real-life arguments. Much of this recognition is due to Toulmin’s elucidation of informal logic in *The Uses of Argument* (1958), and the treatment of fallacies in *Introduction to Reasoning* (1979) means that the Toulmin work on informal logic/argumentation remains centrally relevant to the project. Toulmin had set out to provide a method of producing good substantial arguments; attention to the conventional fallacies would enhance that work. In the final analysis, however, good arguments will be distinguished from fallacious ones by rational assessment of support for conclusions, and the Toulmin method, together with the explications offered, remains a significant means of making those distinctions. The treatment of

fallacies in *Introduction to Reasoning* is entirely consistent with the basic approach to argumentation which Toulmin developed in *The Uses of Argument*.

### **Argumentation Schemes and Informal Logic**

Given the increased interest in *fallacies* during recent decades, it was inevitable that commensurate attention would be given to argumentation schemes, since the former frequently result from a misuse of the latter, and the roots of both have also been traced to Aristotle. The enquiry in this case is not so much the extent to which Toulmin contributed to the doctrine of argumentation schemes; it is, rather, the capacity which the Toulmin model possesses to accommodate argumentation schemes, the taxonomy of which has been developed so substantially. Walton et al., (2008) co-authors of the state-of -the-art treatment of argumentation schemes, provide the following definition: “Argumentation schemes are forms of argument (structures of inference) that represent structures of common types of argument used in everyday discourse as well as in special contexts like those of legal argumentation and scientific argumentation”.<sup>72</sup> The central feature of the contemporary informal logic project is the construction and analysis of discursive argumentation in written or spoken form. Such arguments will be embodied in political addresses, social commentary, newspaper and journal articles on arts and science in general, as well as in scholarly monographs, including philosophical texts, court reports and reports into social/political events in the form of public tribunals or judicial reviews. The analysis of discursive text, originally written or scripted from reported speech, usually begins with attempts to identify the presence of an argument (as distinct from mere assertion or explanatory material) and the extraction of same, with, where necessary, some justified reconstruction. The argument structure will then be identified as simple, linked, convergent or serial. When the skeleton of the argument has been exposed, it can be evaluated in terms of some argument scheme, e.g. *argument from sign* or *argument by analogy*.

Walton et al. (2008) trace the origin of the argument schemes to the *topoi* of Aristotle, in particular to the role of *topoi* in offering guarantees for arguments, although they suggest that the argumentation schemes may also fulfil the other role,

i.e. to be a ready resource for argument construction. Aristotle's *Topics* and *Rhetoric* contain a plentiful supply of *topoi*. Typically, they are employed as legitimating inferences for reaching probable or plausible conclusions on the basis of respectable opinions, e.g. "that which is more lasting or secure is more desirable than that which is less so". Such an opinion, having been endowed by custom with almost the certainty of a maxim, could underpin an enthymeme such as "the pursuit of good health is more important than the pursuit of fame", or "filial loyalty is to be preferred to obedience".

While the *topoi* or *loci* (as in Cicero) were originally seen as having a dual function, i.e. (a) being the source of arguments and (b) offering support for arguments that have been advanced, it is the latter function that is emphasised in the tracing of the descent of the argument schemes from *topoi/loci*. According to Walton et al. (2008), "The interest in the study of the *loci* as a *means of discovery* (emphasis added) pretty well ended in the seventeenth century with the advent of the logic of Port-Royal".<sup>73</sup> This saw the *loci* as principles of classification, rather than means of discovery of arguments. Walton et al. (2008) reproduces a table of *Port-Royal Topics* with three classes: topics taken from grammar, topics taken from logic and topics taken from metaphysics. This range of classification, from the semantic to the metaphysical, underlines the tension involved in trying to equate modern argument schemes with argumentation categories of the distant past. As the analysis of argumentation has developed in recent times, it has been attempting to reflect argumentation in all its variety, rather than forcing aspects of reality into pre-existing categories. This is pointed up by Toulmin's layout of argument, and the rationale behind it. He wants to present a structure that will accommodate any kind of argument from the mundane to the metaphysical, and, in each case, a suitable inference vector (warrant) must be found or at least be available. Thus, the range of potential warrants is co-terminus with the range of arguments, and, therefore, beyond definitive classification. Because the range of possible arguments is open, the class of warrants in the Toulmin sense must be permanently open to growth. The urge to classify, however, to organise on the basis of similarity and/or difference, is an integral part of the human disposition to make sense of reality and, thereby,

control and even enhance it. It is not surprising, therefore, that the tradition of classifying *topoi/loci* under particular headings should be invoked as precedents for, or early examples of, what are now designated as argument schemes. However, they are not the whole story, and cannot be imposed mechanically as a pre-existing template for any argument that might arise.

Barbara Warnick maintains that, even though David Vancil claims that “topics are primarily descriptive of cognitive processes readily observable in any normally functioning human being” and that, in Grimaldi’s view, “they are ways in which the mind naturally and readily reasons”, in addressing an audience, “one must look to the habits of thought, value hierarchies, forms of knowledge and cultural conventions of the host society”.<sup>74</sup> This means that the use of the topic as warrant will be relative to time and place and particular circumstances. This is illustrated by the manner in which Aristotle’s *topoi* are distilled from his experiences, listening to public speakers, and the literary resources available to him, while, in the modern era, Perelman and Olbrechts-Tyteca, to whom Aristotle’s work on *Topoi* was well-known, “analysed a range of discourse from politics, law, ethics, and daily deliberations to develop their account of arguments in use”.<sup>75</sup> Toulmin, on the other hand, devised his argumentation model without being fully aware of what had been previously been done in the matter of topical argumentation, and the traditional taxonomy of argumentation schemes does not feature in *The Uses of Argument* (1958). Toulmin et al. do, however, deal with “classification of arguments” in *Introduction to Reasoning* (1979).<sup>76</sup> Emphasising the fact that different arguments will find their warrants in different fields, they concede that many arguments have been discovered to have certain common features. Their account of argument schemes is, therefore, descriptive, i.e. based on observation of how people have argued, rather than prescriptive. They list a number of the now familiar argumentative schemes, e.g. argument from analogy, generalisation, sign, cause, authority, opposites and degree. But they urge caution: “[n]othing said here (i.e. regarding classification of argumentation schemes) will undermine our earlier conclusion that arguments are to be examined with an eye to the context and field in which they occur”.<sup>77</sup> The list offered does not aim to be exhaustive, and there are,

they claim, no “fixed rules governing the efficacy of the different schemes”.

This cautious approach on the part of Toulmin contrasts with the level of importance accorded by others, not just to the inferential value of individual argument schemes, but to the achievement of their classification as a significant contribution to the emerging movement in informal logic. A.C. Hastings (1963) embarked on an empirical study of two hundred and fifty samples of argument from a variety of sources, with a view to identifying the various modes of reasoning employed, e.g. argument from sign, analogy, authority etc.<sup>78</sup> He identifies nine modes, more he claims, than other author.<sup>79</sup> He illustrates these by the use of the Toulmin argument layout, which he finds more suitable than the traditional syllogism. Kienpointner (1986) considers that “[o]ne of the most important descriptive aims of argumentation theory is the development of a typology of argumentative (sic.) schemes”,<sup>80</sup> and sets out proposals as to how this might be done. For Kienpointner, the central question is, “what is the structure of sound argumentative (sic.) schemes?”<sup>81</sup> He answers as follows: “an argumentation is sound if it is (reconstructable as) an instance of a valid inference scheme *and* the relevance of the arguments is guaranteed by plausible warrants”.<sup>82</sup> Echoing Toulmin, he insists that warrants “must establish an *appropriate* sense relation between arguments and conclusion to fulfil their function as ‘step-authorizing statements’”<sup>83</sup> and arguments must be selected in a way “that there are plausible warrants, that is, laws, rules, principles taken from common sense/common knowledge”.<sup>84</sup> Kienpointner is laying the basis for sound argumentation in everyday natural language, and, within the foregoing conditions argumentation schemes, “minimal units” of argumentation can be identified. He offers an example:

If A is a member of a group with well-known qualities, he too has these qualities.

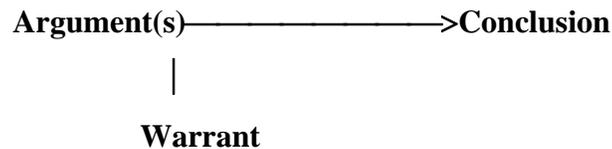
(X) A is a member of a group with well-known qualities.

Therefore A has these qualities.<sup>85</sup>

Achieving this level of abstraction, he says, could be the starting point for a

typology; “that is the warrants of generalised argumentative (sic.) schemes can be used to classify the infinite number of possible context-specific applications as tokens of a finite number of context-independent types”,<sup>86</sup> and he maintains, with a supportive historical survey, that this was the traditional method by which such schemes classified.

Kienpointner favours a typology “with a strong empirical base”,<sup>87</sup> and he recommends the collection of a large selection of written and spoken argumentations; this will be combined with the intuition of the researcher and the legacy of the topical tradition. The emphasis on the empirical approach is reminiscent of that adopted by Hastings (1963), as is, also, his use of Toulminian language, both showing the influence of Wittgenstein. Indeed, the presence of Toulmin in Kienpointner’s analysis is quite specific in the more abstract version which he presents of argument (**X**) above:



This context-independent version, he claims, “can be seen as the prototype of sound argumentative schemes”.<sup>88</sup> In their state-of-the-art treatment of argumentation schemes, Walton et al. (2008) develop a compendium of sixty types of argumentation schemes with sub-types, and, in the manner of Hastings, they produce a system of *critical questions* designed to inject as much rigour as possible into the individual argument. A major concern of Walton et al. is the use of argument schemes in the development of computer software in AI. For our purposes, the significance of the range of schemes is that, as with Hastings and Kienpointner, they can be laid out in the form of the Toulmin model: the particular argument scheme may form a warrant, and the Toulmin rebuttal gives opportunity for the critical questions, while making it clear that normally we are dealing with defeasible arguments.

### Summary

In spite of apparent similarities, it is important to distinguish Toulmin's intentions from those of the taxonomists of argumentations schemes. Walton sees the typology as a key element in the development of AI, whereas others are intent on facilitating argument construction and evaluation by the production of a ready resource.

Toulmin was attempting to construct a system, using natural language, which would yield conclusions whose acceptability would be commensurate with the material and circumstances in question, when an argument had been laid out in the most candid form. Apart from tautological certainty, degrees of probability or plausibility were as much as could be hoped for, but this was not to be seen as a matter for regret. In the nature of things, this is reality, and it is the business of the seeker of new knowledge, or the persuader, to hone her arguments as finely as possible in the conditions prevailing. Human beings, and human society, has, and can, thrive using this kind of standard. As a basis for his model, Toulmin did not look to a preformed structure, whether derived from an abstract metaphysical law or consolidated by tradition, although he did not reject the rules of inference based on the *topoi* from Aristotle to Perelman and Olbrechts-Tyteca. The *inference ticket*, or permit, in accordance with which a claim could be justified, would have general applicability to claims of that kind, and this might very well include an established argumentation scheme as a warrant. The enthymematic argument, "Harry's hair is black so it is not white", would be accepted on the tacit recognition that the Law of non-Contradiction could, if necessary, be brought into play; it is directly relevant to this situation. However, the argument that "Harry was born in Bermuda so he is a British citizen" might be accepted if the claim has been made to someone to whom the facts about Harry's birthplace and the British legal system are familiar. The tacit inference licence here enshrines the rights of those born in Bermuda, so a general warrant (it would apply, *prima facie*, to everyone in Harry's situation) of a practical nature governs the claim. The added value of the Toulmin rebuttal is that it provides opportunity, by way of relevant inquiry, to consider possible facts that would defeat the *prima facie* presumption. This flexibility, the capacity to employ the benefits of established arguments schemes as warrants, or to find in the facts of observation and experience

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a novel justification for a claim, is one of the distinctive advantages of the Toulmin model of argumentation.

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### Chapter 5 Notes

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In support of this claim, Tindale cites Aristotle's comment to the effect that the arguer must understand the objectives and values of human life, and the fact that Perelman and Olbrechts-Tyteca were motivated by concern for justice and its relationship with reason. An analysis of Toulmin's work, from *Reason in Ethics* (1950) through *Human Understanding* (1972), *Knowing and Acting* (1976), *The Abuse of Casuistry* (1988), *Cosmopolis* (1990) and *Return to Reason* (2001), would reveal similar commitments on his part and a similar approach to reasoning.
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82. *ibid.*, p.276.
83. *ibid.*
84. *ibid.*, pp.276/7.
85. *ibid.*, p.277.
86. *ibid.*, p.279.
87. *ibid.*, p.286.
88. *ibid.*, p.277.

## Chapter 6. Toulmin and the Future of Informal Logic

The foregoing survey has served to identify Toulmin's contribution to various aspects of argumentation theory and the continuing centrality of that contribution to the informal logic movement. In this chapter, I wish to underscore that position by reference to *Arguing on the Toulmin Model* (2006), the fruits of a conference held in 2005. While this provides further confirmation of the significance of Toulmin, some of the contributions point to possibilities of further development, which are worthy of consideration. In addition, I wish to refer to some modifications of the Toulmin model which might extend its potential for cogency and versatility, the emphasis, as from the beginning, being placed on the model in *use* in a variety of contexts. One such context will be the use of the model as an instrument of *analysis* of a real argument. There have been reservations about its usefulness in this role. Further, its employment as an instrument for decision-making will be illustrated as it has been pointed out that, in *The Uses of Argument* (1958), Toulmin did not provide for arguments that would result in *action*. Finally, it will be appropriate to demonstrate the manner in which the Toulmin model can accommodate arguments other than those in the indicative mood, i.e. the versatility of the model in terms of a variety of speech acts.

### **The Uses of Argument: Democratic Society**

The investment in argumentation theory would have been a normal feature of the scientific and jurisprudential disciplines, and continuous refinement of such techniques would be expected; during the past half-century the greatest expansion of interest and development has taken place in argumentation in the fields of social and political discourse. The recognition has grown that, for example, the argument from authority (of, for example, Aristotle or the Christian Bible), at one time considered a fallacy, can be accepted, but only after intense critical questioning. Under detailed scrutiny, authorities in various domains, political, religious, scientific and more broadly academic, are now expected to argue their case publicly, or fail to be taken at their word. While in democratic societies, laws of the land are at least subjected to

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some debate and questioning in representative assemblies, executive decisions and administrative injunctions are also increasingly open to challenge. A willingness, or determination, to engage in such debate, while offering arguments in support of alternatives, is now the norm to be aspired to in established and aspirant democratic societies. The ubiquity of print and electronic news media will continue to ensure that this state of affairs will escalate in increasingly multiethnic and multicultural societies. Eriksen and Weigard (2003), referring to Habermas' theory of communicative action, maintain that "[t]he fundamental human capacity to speak to one another, to understand each other and to reach binding agreements via speech acts, is the basic building block of the theory".<sup>1</sup> Earlier, in what might be considered his manifesto, they insist that

Habermas does not think validity is secured if procedures simply produce results which are in accordance with the prevailing power relations and with subjective expressions of will. As far as possible, procedures must ensure that the content of the chosen solutions are rational. This is where his communicative basis plays in, for as there is no a priori blueprint for the best solutions, the issue has to be decided through a deliberative process, where all involved parties have the same fundamental right to have their voices heard. It is the institutionalisation of such *argumentative procedures* which ensures the legitimacy of democracy.<sup>2</sup> (original emphasis)

The fact that critical discussion has become a more widespread feature of political, social and public life generally, and that questioning of authoritarian or bureaucratic-type decrees, as well as robust interchanges between representatives of various ethical or political points-of-view, does not mean that such exchanges are conducted along the kind of rational lines that have developed for argumentation since Aristotle's seminal work in this area. Claims and counterclaims are frequently couched in polemical and abusive terms, *ad hominem* attacks, rather than refutation of the message, selective quotation of relevant material and manipulation of

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statistical evidence are common currency in what passes for argumentation. The incidence of dialectical dispute, conducted within established procedures on the basis of mutual commitment to civility and optimum outcome, is rare outside the confines of the courtroom or formal tribunal, and even here, argumentation can be advanced on the basis of force of personality and/or colour of expression.

Nevertheless, there are opportunities for wholly rational debate, and there are occasions when the presentation of a case, with corresponding critical questioning, or the presentation to an audience (immediate or universal) of a structured argument, without destructive interruption, can be accomplished. It is the need to construct arguments for such opportunities, together with the evaluation, in actual and recorded form, of the arguments of others that provide the incentive for the continuing development of argumentative methodologies. The construction of acceptable arguments in support of our claims and the ability to expose the weaknesses and invalidities in the arguments of others are two sides of the same coin. The refinement of instrumentation, through the elaboration of argumentation theory/informal logic for such tasks, is, therefore, of central practical significance across the range of human experience.

A brief recapitulation of the emergence of informal logic/argumentation theory will serve to locate the present discussion and facilitate discussion of future developments. The central feature of formal deductive logic is the concept of *inference*, the process which insists that, by accepting one set of statements/propositions, one must, in order to be intellectually consistent, accept another statement or proposition. This is a fundamental operation of our cognitive capacity exemplified by such as the following:  $A = B, B = C, \therefore A = C$ .  $A \supset B; A, \therefore B$ . *Either A or B ;(exclusive) A, \therefore not B*. In these situations, the final statement or proposition is *necessary*: it *must* be the case if the statements leading to it are the case. Informal logic, on the other hand, must accommodate contingency, as well as necessity; indeed, the outcome of arguments in informal logic are typically qualified by some degree of probability or plausibility. Informal logic operates in areas where there are supports for at least two views of an issue. An argument as *product*, with a necessary outcome, is, in fact a kind of demonstration which would not allow for a

dialectical *process*. The *contingent* nature of informal logic means that there will be no limit to the refinement of argumentation theory, since there will always be new knowledge, new claims to be supported, innovative arrangements of supporting material and, it seems, an indefinite number of argumentation schemes and an unlimited number of corresponding fallacious arguments.

That was the context within which Toulmin developed a model for structured argumentation. Given its radical departure from the tradition of deductive inference with its necessity or certainty of outcome, it was not unexpected that his innovation should encounter resistance. However, given the resilience of the Toulmin model in surviving early attacks, and its widespread adoption as an exemplar by those engaged in informal logic, it is not surprising that it was celebrated by a conference in 2005. A selection of the conference papers, together with related material from the journals *Argumentation* and *Informal Logic*, appeared in *Arguing on the Toulmin Model* (2006).<sup>3</sup>

The fact of holding of such a conference would justify an expectation of affirmation and a recognition of Toulmin's seminal influence on practitioners and theoreticians of informal logic. This expectation is realised; of more significance would be contributions highlighting perceived deficiencies in the Toulmin vision or practice and suggesting future adaptations or derivatives of his model; and these, too, are included. Brief references to a selection of the material in *Arguing on the Toulmin Model* (2006) will indicate the extent to which Toulmin's work is considered to have been influential, and is considered to be useful for future developments, in terms, for instance, of computer programming of argumentation.

### **Conference (2005): *Arguing on the Toulmin Model***

In so far as there can be *objective* evidence of the significance of Toulmin's work, of which his contribution to argumentation is the best-known element, the study by P. Loui helps to provide it. In "A Citation -Based Reflection on Toulmin and Argument", the author justifies the comparative analysis of citation tables on the grounds that there has been a range of attitudes to Toulmin's method: "the depth of Toulmin's work has always been under suspicion, its technical importance

questionable”.<sup>4</sup> The outcome of Loui’s analysis indicates that the number of journal citations of Toulmin’s *The Uses of Arguments* is growing and was likely to have its best year to date in 2005.

Comparatively, in terms of such citations, Toulmin was ranked eighth, in 2004, in a list of thirty philosophers of science and philosophical logicians. He was placed behind those such as Zadeh, Kuhn and Quine, and ahead of those such as Whitehead, Carnap, Reichenbach. Although the citation count may have been distorted by the fact that Toulmin contributed to the intellectual life of the twentieth century in a variety of ways, as logician, philosopher of science and ethics, rhetorician, historian of science Loui concludes that, on the basis which the citation tables provide, “we can claim that Toulmin’s *The Uses of Argument* and Stephen Toulmin’s work in general, have been essential contributions to twentieth century thought”.<sup>5</sup> Such a quantitative assessment may have a limited value, however, since citations will have been recorded for a great variety of reasons. More important are the qualitative analyses, presented in *Arguing on the Toulmin Model* (2006), of Toulmin’s work and argumentation model. A number of key elements were re-examined, including the understanding and force of *warrants* and the danger of relativism arising from the field-evaluation of arguments. In addition, extensions and applications of the Toulmin model in computer form, for the solution of problems in law and medicine, were proposed. All of this would be in response to Toulmin’s attitude that the last word is never said, and his explicit reservation with regard to the argumentation model that “this form may not be final”.<sup>6</sup>

From the beginning, commentators had found difficulty with warrants; its definition in *The Uses of Argument* was considered less than precise enough, and it was thought that confusion could arise in distinguishing clearly between, for example, a *warrant* and its *backing*. A number of contributors to *Arguing on the Toulmin Model* (2006) took up the question of warrants, with suggestions for the improvement of the model by taking a refined view of the warrant. James B. Freeman, finding difficulty with the concept of “field” as used by Toulmin, questions how the relevance of a warrant as an inference licence can be measured, and proposes an alternative method of justifying warrants, “according to the mode of

intuition which discovers them”.<sup>7</sup> James F. Klump illustrates how, through emphasising the act of warranting, i.e. employing the verbal form of warrant, the Toulmin model can be rendered more forceful through being treated as a functioning, dynamic system.<sup>8</sup> G. Thomas Goodnight purports to satisfy a deficiency in the Toulmin model, i.e. that it lacks a “legitimation warrant”. The need for this arises when relevant but conflicting reasons for a conclusion derive from different fields and one has to justify or legitimate the chosen field.<sup>9</sup> Robert C. Pinto develops a strategy for ensuring the reliability of warrants, acknowledging his debts to Toulmin and Hitchcock,<sup>10</sup> while Olaf Tans wants to demonstrate, despite suggestions that the Toulmin model is “too simple and static” to deal with practical reasoning, it “has more to offer than this line of criticism wants us to believe”.<sup>11</sup> He shows this by using a “more dynamic” reading of the model to analyse a decision of the U.S. Supreme Court, which results in a picture of warrants as “flexible and evolving”.<sup>12</sup>

Dissatisfaction with the efficacy of the Toulmin model as an instrument of *evaluation* of arguments, with suggestions for improvement, are contained in contributions from Bart Verheij, who promotes the use of the software “*Argued*”, and by David Hitchcock, who proposes conditions the fulfilment of which will ensure that good arguments will be produced. These conditions would include having adequate grounds, adequate information, a justified warrant and being justified in the belief that no exceptions apply. Other considerations to receive attention include the *relativism* perceived to be a necessary concomitant of the *fields* within which evaluation will be located in the Toulmin model, the perceived lack of attention to argumentation for and/or against practical decision-making in Toulmin’s thinking, and connections of Artificial Intelligence and Law research with Toulmin’s argumentation model. While developments in the area of A.I. and argumentation are now so extensive as to be beyond the scope of this paper, some of the remarks of Verheij (2009) are worth noting. Claiming that Toulmin’s work has been discovered by Artificial Intelligence, he points to four of Toulmin’s themes that feature in the work of A.I. practitioners: there are more than just two elements in an argument; most arguments are substantial; standards of reasoning and evaluation are

contextual; and the Toulmin's choice of jurisprudence as exemplar of good reasoning is accepted. Having analysed a selection of work in A.I. which incorporated central features of Toulmin's views on argumentation, including Reed and Rowe's *Araucaria*, Verheij concludes, "[i]t has been shown that central points of view argued for by Toulmin (1958), in particular the defeasibility of argumentation, the substantial, instead of formal nature of standards of argument assessment, and the richer set of building blocks for argument analysis are very much alive".<sup>13</sup>

The point of referring to this selection of topics centred on the Toulmin model is intended only to indicate the vibrancy with which the original inspiration is still active; there is no suggestion of blanket endorsement or unwillingness to point up perceived deficiencies. This was in keeping with Toulmin's clear view that any model of argumentation that hoped to reflect a wide range of experiences would have to be regarded as a "work in progress" and be capable of responding to emerging needs. This approach, of seeking to develop and/or improve the Toulmin model, had been in evidence from an early period, and, with an eye to future use, it is worth looking at some of the suggestions made and the likelihood of their adding to the efficacy of the model.

### **Possible Developments of the Toulmin Model**

As recorded earlier, Brockriede and Ehninger (1960) were impressed by the clarity with which arguments could be laid out for analysis and evaluation in accordance with the Toulmin model: "Toulmin has provided a structural model which promises to be of greater use in laying out rhetorical arguments for dissection and testing than the methods of traditional logic".<sup>14</sup> They emphasised their belief in the potentially all-encompassing nature of the Toulmin model, from establishing the facts of a case to arriving at a decision for action. This latter function, i.e. arguments for policy decisions, is significant, as, in *The Uses of Argument*, Toulmin dealt with arguments leading to establishing "facts of the matter", rather than claims for action in the social or political domains. Christian Kock (2006) draws attention to "the curiously subdued part played by practical reasoning, i.e. argument over political and social

*action* in most of Toulmin's theoretical work".<sup>15</sup> Pointing out that Toulmin's "master insight", that we cannot hope for *certainty* in human affairs, was not followed through to deal with decisions for action in *The Uses of Argument*, Kock draws attention to the fact that in the table of warrants supplied by Brockriede and Ehninger, only motivational warrants can be invoked in support of "advocative" (i.e. practical reasoning) claims. On the contrary, according to Kock, there are different types of motivational warrant, and, as Toulmin understood, "necessity" and "certainty" in human decision-making are rarely, if ever, available. A purely rationalist approach, where "pros" and "cons" can be set out against each other, will be ineffective, because there will be no common denominator by which to judge their relative worth. Where there are choices of action available, the warrants for choice may be incommensurate, e.g. the devotees of fox hunting will base arguments on traditions, livelihood, etc., whereas opponents will base their position on warrants invoking values such as animal cruelty. "It is the problem that may arise for anyone facing a practical decision because a certain value or warrant argues for a certain action A, whereas another value or warrant, incommensurate with the first, argues against."<sup>16</sup>

It was this realisation that led Perelman to investigate *how* people argue about values. Both he and Toulmin (1958) made the case that it is precisely because certainty is not available that argument is possible and necessary. Toulmin had adverted to the problem in *Reason in Ethics* (1950), when he pointed out that an ethical decision involves weighing up, "as well as we can", the relative applicability of a "current principle" and "our estimate of the probable consequences".<sup>17</sup> While Toulmin and Jonsen deal at length with the problem of balance and priority in ethical decision-making in *The Abuse of Casuistry* (1988), most attention is still, according to Kock, given to the epistemic, rather than the practical, aspects of argument. Although Toulmin et al. had, in *An Introduction to Reasoning* (1979), made distinctions similar to those identified by Brockriede and Ehninger as regards warrant types for factual arguments, in Kock's opinion, "there is no comparable attempt to distinguish between warrants for practical (advocative) claims".<sup>18</sup>

Kock seems to be suggesting that the Toulmin model contains the potential to

deal with arguments leading to a decision for action, and he proposes a development of the model by having recourse to *Rhetorica ad Alexandrum* for “an inventory of the warrants available for practical reasoning”, i.e. he chooses to read that text in terms of impartiality, rather than as an amoral prescription.<sup>19</sup> He sees it as advocating that options for action about which there is argument, should be seen as more-or-less just, lawful, expedient, honourable, pleasant, easy of accomplishment and, where difficult actions are in question, they should be seen as more-or-less practicable or necessary. This still does not achieve the weighing of incommensurable warrants, but Kock would then apply the further resources of the *Rhetorica*, i.e. the use of rhetorical arguments from analogy, opposites and examples, the resources which “constitute the method of casuistry which Jonsen and Toulmin explored” in *The Abuse of Casuistry*, and which Toulmin has, in effect, “advocated from the start of his career”,<sup>20</sup> even if it is only later that he realised fully that rhetoric is not merely a way of “gaining adherence to one’s point of view; in arguing about issues, ethical or otherwise, the use of rhetorical resources is both legitimate and necessary”.<sup>21</sup>

Toulmin, in Kock’s opinion, would have come to that conclusion earlier if he had considered the variety of warrants and the lack of a common denominator to decide the outcome in arguments for action. The use of rhetoric is justified in such circumstances by the fact that there may be several legitimately held opinions about an issue, and each protagonist is entitled to use legitimate means to gain support. By the nature of the situation, there will be no knock-down argument if incommensurable, multi-dimensional warrants are operative in deciding on an action policy. A fully rationalist approach would, for example, reduce discussions on global problems to a single “cost-benefit” warrant, and the limitations and artificiality of this approach are obvious. An approach based on the *Rhetorica*, with its system of multiple warrants, “has, even now, a realism and a practical applicability which argumentation theory, along Toulmin’s lines, or otherwise, would do well to attend to”.<sup>22</sup>

Considering the evolution of Toulmin’s thoughts on argumentation from *The Place of Reason in Ethics*, through *An Introduction to the Philosophy of Science* and *The Uses of Argument*, to *The Abuse of Casuistry*, it seems likely that he would

consider the suggestions by Kock as an enhancement of the model of argumentation developed in *The Uses of Argument*.

As we saw previously (ch.4), attempts to “improve” or “complete” Toulmin were made from an early stage, following the publication of *The Uses of Argument* (1958). Suggestions by Trent (1968), for example, were seen to be potentially very complicated.<sup>23</sup> “Cumbersome to an unacceptable degree,” could also be said of later suggestions for modification of the Toulmin model by Dale Hample. In *The Toulmin Model and the Syllogism* (1977), he declares his intention to follow Toulmin “in concentrating on function, not form”.<sup>24</sup> He is, nevertheless, committed to the syllogism as the defining standard: “I only claim that all arguments must satisfy – whatever their form – the *functions* of premisses and conclusions”.<sup>25</sup> This preconception means that Toulmin’s designation of major and minor *premisses* as *warrant* and *data* respectively, with quite distinct functions, has to be reversed, and the model he has developed will be judged by the criterion of the syllogism, which he was endeavouring to leave behind. In this case, as in others, there is a clear tension between the desire to fashion a watertight theory of argumentation and the development of a working instrument for the advancement of arguments as they are likely to occur in real life. In seeking to compensate for the structural inadequacies which he perceives to be inherent in the Toulmin model, Hample concludes: “[b]y explicitly considering some additional functions ... data for the rebuttal, a warrant for the backing-warrant relation, backing and rebuttal arguments for the data, and qualifiers for everything ... the structure becomes more complex and more candid”.<sup>26</sup> He realises that the new model would be impracticably complicated (“more like the work of a drunken spider”), and backs away from it, recommending instead that the basic model consist of two premisses, a claim and qualifiers, and that this structure would also be applied to a backing and rebuttal which would be subsidiary parts of any argument.

As Hample does not provide an instantiation of his suggested model, it is difficult to assess its efficacy. It certainly has lost the relative simplicity and portability of the Toulmin model. Also absent is sufficient appreciation of the attitude which Toulmin brings to the construction of a new way of arguing; he is

finding a way out of the dictation by *form*, where this is not adequate to the context of substantial arguments. While a complete theory, with a matching argument structure, may not have been achieved in *The Uses of Argument*, Toulmin is well aware of this. In the *use* of argument, with a grasp of the field in question, with careful choice of language and clear-sightedness in regard to purpose, Toulmin saw the effectiveness of the model.

Even before Hample's suggestions for improving the model, A.L. Lewis (1972) had embarked on a reappraisal of the work of Toulmin in the wake of the negative reception accorded to *The Uses of Argument* by logicians such as L.C. Cooley (1959), H.N. Castaneda (1960) and J.L. Cowan (1964). In his review, Lewis wants (1) to examine the responses of logicians and rhetoricians to *The Uses of Argument* and (2) to indicate areas where re-evaluation and more comprehensive knowledge of Toulmin's ideas seem necessary.<sup>27</sup> In the event, his comments under (2) provide an insight into the reasons for Toulmin's work on argumentation surviving the attacks of the aforementioned logicians. Briefly surveying the history of the relationship between dialectic and rhetoric since Aristotle, Lewis points out that in the sixteenth century, under the influence of Petrus Ramus and Omer Talon, the status of rhetoric, by being detached from the disciplines of *inventio* and *dispositio*, was severely impoverished. Part of Toulmin's achievement, according to Lewis, was to show, by privileging the *substantial* argument, that the resources of rhetoric had a legitimate, indeed an essential, role to play in argumentation. The substantial argument, as Toulmin presents it, is, in the opinion of Lewis, "audience-centred, situational and field-dependent ... all of these phrases apply to rhetoric".<sup>28</sup> A narrowly conceived logic will not be capable of dealing with a large portion of argumentation where rational assessment will require "experience, insight, and judgment".<sup>29</sup> Lewis' commentary is valuable for the appreciation it displays of Toulmin's purpose in *The Uses of Argument*. Lewis believes that, contrary to the opinion of some logicians, Toulmin was not out to create another paradigmatic argument structure which would provide some automatic means of showing *validity* or *invalidity* of arguments which would be "neatly categorised".<sup>30</sup> He quotes Toulmin to the effect that the latter was intent on provoking discussion, rather than

producing “a systematic treatise”, and Lewis makes it clear that there is no claim that *The Uses of Argument* contains a complete system of logic.<sup>31</sup>

A major insight in Lewis’s review is that many students had focussed on chapter three of the Toulmin work, i.e. the “Lay-out of Arguments”, without fully appreciating the underlying vision and philosophy. The “Lay-out of Arguments”, as Lewis sees it, represents a preliminary formulation of argument in such a way that it is comprehensible, coherent, free from obvious inconsistency; it has to do with the initial formalities of argument stating. The rational merits of the argument can then be assessed on the basis of “field, situation and audience”.<sup>32</sup> Lewis believes that some rhetoricians, as well as some logicians, have used or evaluated the model without appreciating these considerations; “the use of the six-term model without a thorough understanding of the philosophy creates the same inflexible system that Toulmin decries”.<sup>33</sup> If, he says, Lewis’s own approach is taken, the Toulmin model may be seen as “a flexible and useful tool which helps a person assess some substantial arguments”, a reasonably modest appraisal.<sup>34</sup> However, such an approach has important implications: to evaluate informal arguments, a student/critic must, in addition to having some knowledge of logic and rhetoric, be familiar with “the appropriate principles of semantics, psychology and epistemology as well as the field under study”.<sup>35</sup>

Lewis did not seek to expand or improve the Toulmin model. What his reappraisal succeeded in doing, however, proved to be more important. He has helped to disseminate understanding of what Toulmin was trying to achieve. While he did not deflect all negative criticism, the Toulmin model has been more broadly accepted in terms suggested by Lewis’s critique, not as an inflexible logical paradigm, but as a template for setting out arguments in a candid and cogent manner so that their merits can be evaluated on the bases now commonly accepted in informal logic, i.e. relevance and adequacy.

Another significant reaction to the Toulmin model, in terms of modification and/or development, was that of James B. Freeman (1991) in his comprehensive account of informal logic structures in the final decade of the twentieth century.<sup>36</sup> Acknowledging that his approach “owes a very distinct debt to Toulmin’s work”,<sup>37</sup>

he nevertheless concludes that a certain dismantling of the Toulmin model is necessary, and claims to have succeeded in providing an argument structure which “straightforwardly mirrors the structure of real-life arguments”.<sup>38</sup> While Toulmin would have shared this goal, there are significant differences in their approaches. Freeman sees argument as the outcome of a dialectical process, and an essential objective is to diagram arguments so it can be seen clearly how they hang together. Freeman argues for his claim that warrants are not suitable as a category for analysing arguments as products, that Toulmin’s backing, as distinct from warrant, is an unacceptable element, and, if warrants are to receive backing, why not data? Toulmin, he points out, makes no place for this. He finally comes to the conclusion that there should be premisses and conclusions, modalities and rebuttals, although he disagrees with Toulmin, who considered the modal qualifier to be a part of the conclusion.

Freeman’s approach seems to be dominated by preoccupation with *diagramming* of arguments. Toulmin’s layout was intended as an aid to clarity. It purports to provide what Freeman claims to have done, i.e. offer a method of identifying separate elements of a real-life argument in natural language. However, it was never to be taken as a series of boxes whose mere “filling in” would represent success; in fact, Toulmin did not regard it as being necessarily complete. For Freeman, the emphasis is more on the logical mechanics of dialectical argumentation, whereas, for Toulmin, the point of the project is the presentation and evaluation of substantial arguments.

As regards evaluation, Freeman claims that the dialectical process, the asking of questions, will constitute an evaluation process: if presented with an argument in discursive text, the evaluator will ask

- (a) should the premisses have been accepted?
- (b) what relation have the premisses to the conclusion?
- (c) are the premisses weighty enough to support the conclusion?,

which encompass the criteria for evaluation commonly accepted in contemporary

informal logic.

One might ask, however, how qualified the evaluator would have to be to answer such questions comprehensively, given the unlimited range of situations within which they might arise. Freeman points out that with formal deductive logic the use of the correct form goes a long way towards evaluation. But the “correct form”, the diagram as Freeman presents it, will not, in itself, do more than identify premisses, conclusions and, perhaps, modalities and rebuttals. Estimating their worth, weight or relevance is a different challenge. Toulmin developed the concept of “fields”, which would identify the forum in which particular arguments would be situated. Evaluation of these arguments would be on the basis of best knowledge and practice within these fora. Toulmin did not concede that only experts could participate in argumentation; “[t]his is not to say that only physicists familiar with the latest theories can discuss the principles of that logic”, but he is assuming familiarity with at least the elementary principles.<sup>39</sup> He does insist, however, that “in physics as in other disciplines e.g. political philosophy, ethics etc. more attention needs to be paid to the actual state of the substantive subject at the present time and to the course of its historical development”,<sup>40</sup> and no estimate or critique of the Toulmin model should omit his earlier injunction: “[i]n logic as in morals, the real problem of rational assessment – telling sound arguments from untrustworthy ones – requires experience, insight and judgement”.<sup>41</sup> While both Toulmin and Freeman seemed to have the same goal in view, it is not clear that “dismantling” the Toulmin model would represent progress.

The foregoing examples of attempts to “improve” or “complete” the Toulmin model illustrate the fact that, since its production, while subjected to regular critique and suggestions for modification, it has never been ignored. In more recent times, it has been found to be much more than merely relevant, and Keith and Beard (2008), displaying the high regard in which they hold the model, have demonstrated a way in which it can be “completed”, in an organic manner that is not a violation of the original; i.e. through allowing it to evolve as a system of non-monotonic reasoning.<sup>42</sup>

From the vantage point of the twenty-first century, Keith and Beard place the understanding of “warrant” in the context of the totality of Toulmin’s work. In

*Reason in Ethics* (1950), Toulmin recognised that, rather than pursuing a general theory of argument, he would have to “work towards a model of multiple and local modes of reasoning”.<sup>43</sup> Toulmin, according to Keith and Beard, influenced by the prevailing analytic philosophy, began *Reason in Ethics* with the assumption that there is some core logic at the heart of arguments in mathematics, science, ethics and aesthetics. He realised, however, that this is not the case, and that it was necessary to undermine the notion that geometry should be taken as the model of rationality. Furthermore, even in science, reason varies with the “activities and interests of those formulating arguments”. *The Uses of Argument* (“basically a study in the philosophy of probability”) is an attempt to illustrate, “in Wittgensteinian fashion”, by focussing on a more commonsense attitude, the variety of types of argument “that are hidden by a mathematical account”.<sup>44</sup> As Keith and Beard see it, Toulmin wants to have it both ways; he wants a formal system which will give secure inference, while at the same time accommodating the practical demands of arguments in use: “[i]n a very real sense warrants are what explain the apparent similarity of arguments in terms of form (across the spectrum of contexts and uses) while recognising that they must be evaluated locally”.<sup>45</sup> Keith and Beard acknowledge that there remains widespread confusion and diversity of opinion as to what warrants are, and what they do, and they want to answer the question, “What would a more thorough theoretical account of warrants look like?”.<sup>46</sup> Others have likened warrants to the classical *topoi*, and this is, according to Keith and Beard, a useful insight as it looks to *rhetoric* as a resource for the development of Toulmin’s work in *The Uses of Argument*. But it does not provide a systematic theory. Such a theory, continuing the Toulmin project, will, on their initiative, be based on the concept of non-monotonic reasoning.

According to John L. Pollock (2008), the long tradition in philosophy, whereby good reasoning had to be deductive, is now “thoroughly discredited”.<sup>47</sup> There are various kinds of non-deductive reasoning which justify our acceptance of conclusions, albeit provisionally or defeasibly. Inductive reasoning, whereby we regularly justify conclusions based on generalisations, is considered reasonable, even though new information or insight may necessitate modification or retraction. This is defeasible reasoning, exemplified by:

This is an A and the probability of an A being a B is high;  
so we can infer (defeasibly) that this is a B. <sup>48</sup>

Without this kind of reasoning, Pollock claims, “no sophisticated cognizer, operating in a somewhat unpredictable environment, could get by”.<sup>49</sup> Defeasible or non-monotonic reasoning differs from deductive reasoning in that the former is revisable; i.e. if we conclude, justifiably (with reservations) on the basis of an adequate number of observations (e.g. swans are white), we will have to revise that conclusion if a contrary instance (e.g. a black swan) presents. However, this does not invalidate the original observations or data. In the case of monotonic (deductive) reasoning, invalidation of the conclusion will constitute an attack on one or more of the premisses.

A reliance on a non-monotonic form of inference, which for Toulmin would replace a monotonic system, i.e. formal deductive logic, would require as great a degree of rigour and precision as possible in the layout of an argument. Separating out six elements of an argument or inference structure was intended to provide as candid as possible an outline of the function of each element and, therefore, of the acceptability of the conclusion.

Keith and Beard characterise it as a “default model”; “the inference goes through unless there is reason to think otherwise”,<sup>50</sup> and they provide some examples of:

*Default Inference:*

(1) Prototype: (A feature is true of a type unless there is a confounding fact.)

Tweety is a bird.		Tweety is a bird.
Birds fly.	But	Tweety has a broken wing.
So, Tweety flies.		So, Tweety doesn't fly.

(2) Presumption: (Presumptions indicate, based on practice and experience, rather than category, how an inference should be made.)

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Tom has the book,  
So, it's Tom's book

But

Tom has the book  
Gene says that Tom took it without asking.  
So it may not be Tom's book.

Other examples which Keith and Beard use are “Best Guess”, where a decision must be made from partial information in a particular context and “Probability” interpreted in a subjective or Bayesian mode; the inference will be justified on the basis of a personal judgment based on experience, but something unexpected may intervene.

Keith and Beard analyse an example of Toulmin's “defeasible inference” showing that the default argument types may be interchangeable, but with a slightly different outcome:

Petersen is a Swede. Hence, Petersen is not Catholic.

(a) *Prototypically*, Swedes are Lutheran.

(b) The majority of Swedes are Lutheran... Petersen is *probably* Lutheran.

(c) One could presume that a Swede was a Lutheran until counter-evidence was produced.

Toulmin maintains, according to Keith and Beard, that the argument about Petersen requires a warrant that states a prototypical inference, “Swedes are Lutherans”, and that “this inference is justified by (has as its backing) the probabilistic evidence that 98% Of Swedes are Lutherans”.<sup>51</sup> But they demonstrate that each of the default inferences re Petersen's religion may apply depending on the context in which it becomes an issue or has relevance.

As has been pointed out, various attempts to “improve” or “complete” the Toulmin model, by redefining or elaborating its different elements (sometimes to the point of being excessively cumbersome), the intention, generally, has been to provide a fail-safe arrangement so that conclusions become indubitable. In the nature of things, this is contrary to what Toulmin was attempting to achieve, and Keith and Beard claim, with justification, that their suggestions are different. Non-monotonic

(defeasible) reasoning theory will not do violence to Toulmin's view of argumentation; it "is a natural and systematic enrichment of Toulmin's project."<sup>52</sup> This claim by Keith and Beard arises from their appreciation, not just of Toulmin's writing on argumentation, but of how rationality informs his work from *The Place of Reason in Ethics* (1950) to *Return to Reason* (2001). Rather than concentrate on the diagrammatic aspects of the Toulmin model (part of their motivation is to discourage the treatment, in pedagogical circles, of the Toulmin model as a mechanical instrument), they identify with his view of Cartesian epistemological foundationalism and his espousal of the Deweyan dissipation of the "dream of certainty". Looking at reality from a Toulminian perspective, they are able to surmise what would be a natural development of his work – an exercise that Toulmin had invited. The outcome of the Keith and Beard treatment has been an enhanced appreciation of what Toulmin was attempting to achieve with *The Uses of Argument* (1958).

It is not easy to say what changes Toulmin himself might have made to the original model; the re-issue of *The Uses of Argument* in 2003 contained no re-writing of the original. He has, however, given some hints as to how he thought worthwhile development might proceed. In the preface to the re-issue, he remarks that, having taken note of Otto Bird's account of the relationship between Toulmin's work in *The Uses of Argument* and the Medieval Topics, he would "point to Aristotle's contrast between "general" and "special" topics as a way of throwing clearer light on the varied kinds of backing relied on in different fields of practice and argument".<sup>53</sup> In *Logic, Rhetoric and Reason: Redressing the Balance* (1992), Toulmin informs us that if he were rewriting the book, he "would broaden the context, and show that it is not just the warrants and backing that vary from field to field ; even more it is the *forums* of argumentation, the *stakes* and the contextual details of arguing as an activity".<sup>54</sup> None of this represents a row-back from his earlier position; in fact, it suggests an increased emphasis on contextuality in all its dimensions, including time, place, occasion, participants. It seems that he might also have incorporated insights from Wittgenstein's "language games", Austin's illocutionary utterances and Searle's speech acts. For contemporary analysts of

argumentation, he insists, “the task of reason is no longer seen as capturing universal and unchanging aspects of creation, but as mapping the varied activities in which language is put to work in different forums and on different occasions”.<sup>55</sup> This represents a dynamic approach to the use of language and argument, and would suggest that Keith and Beard are correct in their assessment that the non-monotonic, (defeasible) logic approach to argumentation is a natural, commonsense development of the Toulmin method. Toulmin had, in a way, anticipated that progression in *The Uses of Argument*. He recognises that his use of *rebuttal* had been “discussed by Professor H.L.A. Hart under the title of defeasibility”, where he had shown its applicability to fields other than the jurisprudential.<sup>56</sup> As Toulmin recalls,

Sir David Ross, one of those who “remain wedded to the traditions of formal logic”, discussed rebuttals in the field of ethics, recognising that there must be exceptions to moral rules, but, “being committed to the traditional pattern of argument-analysis he has no category of presumptive arguments or of rebuttals in terms of which to account for this necessity”.<sup>57</sup>

Just as it seems likely that Toulmin would have appreciated the perspective provided by Keith and Beard, there is a possibility that he would have been content to incorporate a technical innovation, an additional component for the Toulmin model suggested by G. Thomas Goodnight (1993).<sup>58</sup> Toulmin had emphasised the importance of the *backing* of warrants: “[t]his backing of our warrants is something which we shall have to scrutinise very carefully”,<sup>59</sup> as the nature of the backing will vary as determined by the field in question. On the assumption that the Toulmin model is to be seen as relevant to the arguments of public speakers, specialised fields and everyday discourse, Goodnight insists that there must be a justification for the choice of backing which will demonstrate clearly the connection between *backing* and *warrant*. This justification he refers to as a “*legitimation inference*”,<sup>60</sup> and he regards this development as a “recuperation” of the Toulmin model. Goodnight

grants that in many arguments the connection will be clear, and that the nature of the choice of backing will be uncontentious, e.g. arguments in science will be backed by relevant material from that field, and legal arguments will be backed by jurisprudential considerations. Even where there are multiple relevant fields from which backing might be chosen (e.g. Harry might be legally, statistically and politically likely to be British), there will be no conflict, because all the evidence points in the same direction. But difficulties may arise when possible backings point in different directions. In such cases, the backing chosen should be justified by a *legitimation inference* which will demonstrate that the backing chosen is “relevant, authoritative and proper”.<sup>61</sup>

Goodnight illustrates his view of the legitimation inference by citing the practical decision of appointing a named senator as Secretary of Defence. As Goodnight sees it, senators based their decision on different criteria: (a) a presumption, sanctioned by tradition, in favour of appointing the nominee; (b) acting in good conscience; and (c) judging the competence of the nominee. Arguments on both sides of each of these criteria were forthcoming, based both on legal and political standards. While the political milieu does not always provide the context for the “best”, i.e. the most reasonable and well-supported arguments to prevail, the case outlined by Goodnight illustrates the value, in certain circumstances, of a “legitimation inference” to link a chosen *backing* to an operative *warrant*. In the law court, or other forum where critical discussion would be controlled, the opportunity would be available, and the obligation would be underlined to justify such a choice. A routine tribunal on planning permission for building would expect to hear good argument for and against aesthetic standards and economic development in the light of prevailing circumstances. The challenge for the arguer is to render her position “determinative”. Of course, the attempt will always be made to choose a warrant which is clearly sanctioned by the field in question, “or pertinent to social knowledge, institutional rules, public consensus or the constraints of the natural world”,<sup>62</sup> according to Goodnight. In certain circumstances, however, well-made arguments may establish hitherto unrecognised connections between *data* and *backing*. This will both need and justify the inclusion of a legitimation inference

between backing and warrant.

In *The Uses of Argument* (1958), Toulmin had indicated that, in an argument, the specification of *data* was a response to the question, “What have you got to go on?”, while the nomination of a warrant answered the question, “How do you get there?”.<sup>63</sup> The *legitimation inference* as outlined by Goodnight would respond to what might be a very natural question such as, “Why are you so sure about that particular route?”. This would graft organically to the existing model, and would be available for complex issues where stakes were high. It does no violence to the original, would add complexity only when the matters to be determined demanded such, and it seems reasonable to believe that Toulmin would have appreciated its efficacy.

### **The Toulmin Model in Action: Argument Construction, Analysis and Evaluation**

The traditional syllogism is undoubtedly the most widely recognised contribution made by Aristotle to the exercise of reasoning/argumentation, yet Aristotle was well aware that humans do not ordinarily advance their arguments by way of the tripartite syllogism. Such a structure may be used as a template to test the formal validity of arguments that have been advanced after they have been reconstructed in accordance with the formal layout. As Aristotle shows, claims can be advanced and supported in various ways. Good arguments, however, apart from providing substantial credible support for a claim, will also be set out in a clear manner so that the claim is easily identified as such, and the support is so distinguishable as to be easily evaluated by the appropriate criteria. Given the frequency with which the process of argumentation is exercised, it is legitimate to speculate whether there is *natural* disposition to present and argue for one’s claims, with the maximum likelihood of success, in a format that is replicable. If such did exist, it would have the merits of clarity referred to above and, in order to accommodate the variety, complexity and comparative untidiness of human experience, it would have to embrace the universal as well as the particular. Furthermore, in the context of a rhetor seeking to convince by rational argument, such a format would have to allow for the support emanating

from the ethos of the rhetor, as well as providing opportunities for the imagination and emotions of the addressee/s to be engaged, in addition to their cognitive capacity.

Toulmin considered that the format of argumentation which he devised, or perhaps extracted, from experience, fulfilled, substantially, the conditions outlined above, and a *narration* of the process of the Toulmin model inclines one to agree: a *claim* is made and support (*data*) for it is advanced; the support, in itself, is not controversial, but one must show why it supports this claim; a chosen *warrant* will show how this support is relevant and sufficient to justify the use of this support and its establishment of the claim. Recourse to scientific, legal, or other factual information (*backing*), will show why this warrant justifies the claim. However, since we are aware that, in the nature of things, we make claims based on incomplete information, and that the covering warrant may not be universal in its application, we enter a caveat (*rebuttal*) indicating possible exceptional circumstances when the claim might not be upheld, and we signal this by a *qualification*. (It is “likely,” “unlikely,” “possible,” “highly probable,” etc..) Psychologically, this seems satisfying, and a reflection of best practice in the construction of a case that we wish to make in support of a claim. Even though Toulmin says that his method is justificatory, i.e. the *claim* comes first, and the *data* and other elements follow (thus positing a dialectical encounter), once the structure had been formulated, it became available for use by a rhetor. How one arrives at a claim is irrelevant; the manner of its justification may very well be different just as the testing of a scientific hypothesis will be quite independent of the manner in which the hypothesis emerged. The Toulmin model, therefore, can be used not only in a justificatory manner, but also probatively by showing that certain facts, because of some inferential warrant, lead to some conclusion. The layout of an argument, as Toulmin designed it, provides the kind of clarity needed to assess its cogency. Others, as outlined above, have sought to “improve” it by removing perceived ambiguities, uncertainties etc., the usual result being increased complexity and difficulty of applicability. As it stands, and viewed as a non-monotonic, defeasible system, the Toulmin model allows the arguer, while controlling the main elements, to introduce

convincing or illuminating examples and sub-arguments where necessary. She can also anticipate possible objections and, while engaging the various capacities of an audience, gain credibility from the candour and perspicuity of the presentation.

While such assertions seem convincing in the light of the foregoing analysis of Toulmin's overall approach to reasoning, it is essential to keep in mind that Toulmin's primary interest was in the *uses* of argument. The crucial test of the Toulmin model will, therefore, be its effectiveness as an instrument for the construction of arguments and the analysis and evaluation of arguments advanced by others. While the Toulmin model has been associated, because of the arguments used in *The Uses of Arguments*, with establishing "facts-of-the-matter", it will be shown that it is not limited to this function, but can also be useful as a heuristic in arriving at policy decisions. Furthermore, it will be shown that the model can be useful in carrying arguments that involve speech acts other than constative utterances.

### **Argument Construction: Decision Making**

The formulation of arguments in favour of, or against, policy decisions leading to action was an integral part of political life since the times of the Greek polis. In contemporary circumstances, it is no less a feature of political, legal, social commercial and professional life in general. Arguments about public policy arise because there are choices to be made, and a specific choice will be supported by cogent argument. William Dunn (1981) is quite explicit in asserting that every policy argument has six elements, and these correspond to the six elements of the Toulmin model.<sup>64</sup>

For Toulmin's "data", Dunn substitutes the more wide-ranging "policy-relevant information", and with this as "the point of departure in all policy arguments", he argues to a policy *claim* by way of *warrant*, *backing*, *rebuttal* and *qualifier*.<sup>65</sup> The "policy relevant information" may be statistical or the result of expert opinion, or even encapsulate a *need* as established by a previous argument (e.g. we need more nuclear-power generated electricity for economic growth). For Dunn, a warrant will allow the proponent of a policy argument to move from policy-

relevant information to a policy claim, exemplifying the permissory function identical to Toulmin's understanding of the warrant. Further, Dunn emphasises the centrality of the warrant by expanding the definition to the effect that "carrying the policy information to a policy claim is to provide a reason for accepting the claim".<sup>66</sup> While, according to Toulmin, *backing* for *warrants* can be expressed in the form of categorical statements quite as well as can the data, Dunn sees backing as any kind of support for the warrant, e.g. scientific laws, expert opinion, ethical principles, whatever can be seen "to add persuasiveness to an argument that has not been well accepted".<sup>67</sup>

The *rebuttal*, as Dunn sees it, opens up the possibility of considering alternatives and provides "a systematic means for criticising one's own claims, assumptions and arguments".<sup>68</sup> This may bring to the surface differences of terms of reference underlying approaches to policy decisions and, perhaps, ensure that personal or institutional bias is exposed and neutralised. Dunn allows for development of the Toulmin structure (e.g. various backings for warrants, mutually supportive warrants, as well as backing for a rebuttal where this adds clarity to the layout of the argument), but, to echo a phrase used by Keith and Beard, does no violence to the original. Dunn's summary of the process, "[t]he structure of policy arguments illustrates how policy analysts may use reason and evidence to advocate solutions for policy problems", seems fully justified.

The following is an instantiation of the Toulmin model as used by Dunn to lay out an argument in favour of greater investment in the production of electricity by the use of nuclear power:

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### Dunn's Lay-out of a Policy Argument

(D) Policy- relevant Information → (therefore) → (C) Policy Claim

Nuclear power is two to three times more efficient than Conventional power sources (Qualifier) The government should probably invest in the construction of nuclear power plants.

(W) Since → (R) Unless

The production of nuclear energy is the only way to ensure the continuing growth of the economy solar energy can be developed on a large scale

↓ ↓

(B) Because

(Backing) for rebuttal

Arab countries can continue to embargo oil. Other sources of energy are limited. This the conclusion of a panel of experts.

(Public Policy Analysis: An Introduction; William Dunn (1981), p.43.)

The potential fecundity of the Toulmin model, in its basic or developed form, for arriving at conclusions of the foregoing kind, is apparent from its employment by Dunn in his analysis of political and corporate decision-making. The layout encourages, or demands the detailed scrutiny of, the objectives and the means to achieve them. Untested preconceptions are exposed and relevant factual information of a supportive or rebutting nature are identified, as is the degree of confidence with which one ought to commit to a particular claim/conclusion.

### **Arguments Derived from, or Leading to, Speech Acts other than Constatives**

Formal deductive logic, working with propositions, produced arguments leading to conclusions in the form of assertions, in the indicative mood, that could be measured

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in terms of true/false. Even arguments for or against a proposal for action could be reconstructed to fit the assertive pattern, e.g.

“(A) The time is right. Your forces are superior. → (so) Attack the enemy!”

might be reconstructed in propositional form as

“(B) The time is right. Your forces are superior. → (so) This is a good time to attack the enemy.”

This process of reconstruction would have been seen as the normal method of translating the original into propositional form, and thus rendering it fit to be contained within the propositional logical structure. Clearly, however, the hortatory strength of (A) is diluted in (B). The former exemplifies good reasons leading to a conclusion that is imperatival. The Toulmin model, for example, would accommodate such an argument in the following manner:

Data: The time is right. Your forces are superior. →(so) Conclusion:

Attack the enemy!

↓

(since)

Warrant(implicit) : One should attack from a position of strength

The question of inference from uses of language, other than the assertive followed from J.L. Austin’s treatment of speech acts in *How to do Things with Words* (1962). Here, he had pointed out that sentences do not merely describe “facts of the matter”, and he laid particular emphasis on the use of language with a performative function, i.e., “doing by saying”, e.g. “I *appoint* you Chief Justice”; “I *promise* to defend the constitution”; or “I *resign* my position”. Such illocutionary speech acts, where the import of what is said is an *action*, frequently take place in the context of formal and/or ritualistic surroundings. Certain “felicity” conditions must be fulfilled, e.g.

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the occasion, time, place, personnel and intention must be in accordance with legal/conventional, widely recognised norms. Since such utterances are not propositions, traditional logic would not consider them capable of initiating inference, or as inferred conclusions. The Toulmin model would, however, accommodate arguments based on such speech acts. The taxonomy of performatives, derived from Austin and Searle, as set out by Bach and Harnish, is useful in illustrating this.<sup>69</sup> Their distinctions are exemplified by the following:

<b>Constatives</b>	<b>Directives</b>	<b>Commissives</b>	<b>Acknowledgements</b>
affirming	instructing	agreeing	apologising
claiming	admonishing	inviting	congratulating
informing	begging	promising	thanking

The following argument, employing a directive, could be analysed under the rubric of the Toulmin model:

You have been most diligent and successful in running your section of the business.  
Take over as chief executive of the entire company.

**Data/Grounds :**

You have been most diligent and successful in running your section of the business.

**Claim/Conclusion**

→ (therefore) Take over as chief executive of the entire company!



(since) **Warrant** (Implicit)

He who is diligent and successful with subsidiary responsibilities is likely to be competent at a higher level. (This is defeasible.)

For some, the conclusion, “Take over”, should be rephrased so as to take an indicative, rather than an imperative, form, e.g. “I wish you to take over”. This,

however, would be to mistake the force of the original. The present form, proceeding on the basis of “good reasons”, reaches a conclusion, but its imperatival form also includes implications of exhortation and challenge.

Under the heading, “Acknowledgements”, Bach and Harnish include “apologising”. In circumstances where Austin’s “felicitous” conditions were fulfilled, the *act* of apologising could form the *data* from which an argument could be advanced. In a court of law, for example, a defendant apologises for his behaviour. The judge is satisfied that there is remorse, i.e. the apology is a sincere act, not a mere statement. His pronouncement could take the form of a rational argument in Toulmin form:

(D) You have apologised → (therefore) (C) I suspend your sentence.  
 ↓  
 (W) since  
 Remorse should be acknowledged and rewarded.

Another example of such an argument, with a claim/conclusion in the form of a *Performative*, would be the following:

(D) You have helped me greatly → (therefore) (C) I *promise* to repay you.  
 ↓  
 (W) since  
 One good turn deserves another.

Caveats could be entered in either of these cases, which would be a form of rebuttal that would render the conclusion conditional, or even void; e.g. in the latter case, I might enter the proviso, “I promise to pay you *if I am in a position to do so*”.

A more formal, if implicit conclusion, arrived at after the completion of established rituals, including specification of place and personnel, would follow from a declaration by the duly accredited official “I pronounce you man and wife”.

(D) I pronounce you man and wife → (therefore) (C) I confer great benefits on  
you.(*implicit*)



(W) since

The constitution and legislation privilege married people in terms of inheritance, etc.

### **Evaluation of Arguments**

The Toulmin model has been faulted because of the fact that it is not shown in *The Uses of Argument* (1958) as a method whereby arguments can be analysed and evaluated. Keeping in mind that evaluation, i.e. the assessment of an argument in terms of its effectiveness in the establishment of a claim or winning adherence to a point of view, will depend on the *substance* of support within the relevant field, it is legitimate to look at the structure from the point of view of its *analytic* efficiency. How useful, in other words, is the model when the task is to scrutinise a text, with a view to deciding whether it advances a claim; what exactly the claim is; what support, if any, is offered and; is that support adequate to render the claim worthy of acceptance? If, as speculated earlier, the Toulmin model reflects a natural disposition of argument, one could expect that some of its elements would play a part in “opening up” an argument with a view to its evaluation, whether the field in question is politics, science, ethics or aesthetics. Given the multiplicity of argumentative presentations that actually take place in public addresses, journals, newspapers, books and by way of electronic media, it is unlikely that all arguments would conform totally to any one pattern. Nevertheless, the listener, or, more commonly, the reader, must bring some apparatus to the reception of argument which will facilitate the analysis and ensuing evaluation. Considering that Toulmin was primarily interested in the *use* of argument, it would seem necessary to approach real arguments with a view to subjecting them to scrutiny using as template, the pattern of the Toulmin model. In such a test, it is vital that the pattern be seen to emerge from the text, rather than being imposed on it. This can only be a matter of judgment, and be open to correction. The following passage from *There is a God*, by Anthony Flew, is a useful illustration:

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Over the last three hundred years, empirical science has uncovered immeasurably more data about the physical world than could ever have been imagined by our ancestors. This includes a comprehensive understanding of the genetic and neural networks that underlie life, consciousness, thought and the self. But beyond saying that that these four phenomena operate with a physical infrastructure that is better understood than ever before, science cannot say anything about the nature or origin of the phenomena themselves. Although individual scientists have tried to explain them as manifestations of matter, there is no way possible to demonstrate that my understanding of this sentence is nothing but a specific neural transaction. Granted, there are neural transactions that accompany my thoughts – and modern neuroscience has pinpointed the regions of the brain that support different kinds of mental activity. But to say that a given thought is one specific neural transaction set is as inane as suggesting that the idea of justice is nothing but certain marks of ink on paper. It is incoherent, then, to suggest that consciousness and thought are simply and solely physical transactions.<sup>70</sup>

A reasonable analysis of the above, in accordance with the Toulmin model, could be the following:

**Claim:** It is incoherent (then) to suggest that consciousness and thought are simply and solely physical transactions.

**Data:** (But) beyond saying that these four phenomena, (i.e. life, consciousness, thought and the self) operate with a physical infrastructure, science cannot say anything about the nature or origin of the phenomena themselves.

**Warrant:** (*Implicit*) Because the physical sciences have made so many discoveries over the last three hundred years, without explaining the nature or origin of non-physical phenomena, we can take it that no physical explanation is forthcoming.

**Backing:** Over the last three hundred years, empirical science has uncovered

immeasurably more data about the physical world than could ever have been imagined by our ancestors, (including) a comprehensive understanding of the genetic and neural networks that underlie life, consciousness, thought and the self.

**Rebuttal:** (Rhetorical device: potential rebuttal, anticipating possible objection with a view to introducing a counter-rebuttal): Granted, there are neural transactions that accompany my thoughts – and modern neuroscience has pinpointed the regions of the brain that support different kinds of mental activity.

**Counter-Rebuttal:** (But) to say that a given thought is one specific neural transaction set is as inane as suggesting that the idea of justice is nothing but certain marks of ink on paper.

**Modal Qualifier:** The tone of the claim implies *certainty* on the part of the arguer, making it unnecessary to include any particular phrase.

Apart from very minor changes through reconstruction, which in no way departed from the sense and intention of the arguer, this arrangement of the argument in a candid layout facilitates evaluation of the argument itself. The claim is basic to a larger argument that this arguer wants to make; laying out this element in the manner of the Toulmin mode indicates that large arguments can be presented as a series of smaller arguments, which can receive the detailed analysis that they need.

In the case of the argument displayed above, issue might be taken with the claim even if the data is accepted, the warrant (implied) may be called into question; three hundred years is a very short time in terms of the history or presumed future of the universe, and it would be imprudent to conclude that the future will have equally little to say about the nature and origin of life, consciousness, thought and the self. On the other hand, Colin McGinn is of the opinion that “[t]he question of the relationship of mind and body is perfectly genuine, but our minds are not equipped to solve it”,<sup>71</sup> and his explanation for this claim might have formed a warrant for the earlier argument: “it is just that our brains are not cut out to handle questions of this class”.<sup>72</sup> The important point, however, is that Flew’s argument, laid out in accordance with the Toulmin pattern, is analysed systematically and laid open to acceptance, refutation or further elaboration.

### **Summary**

In this chapter, present-day estimates of the status of the Toulmin model of argumentation within the informal logic movement have been highlighted by reference to *Arguing on the Toulmin Model* (2006). Various contributions to the conference on which this publication was based are testimony to the continuing interest in the model as more than an historic stepping-stone. Specifically, the Toulmin layout of argument was seen to be serviceable in the development of AI.

The chapter also explored suggestions as to how the Toulmin model might be modified in order to increase its effectiveness, since a facility for reliable argumentation is essential to healthy democratic society. Particular attention was given to Keith and Beard's attempt to revise the manner in which the Toulmin model is regarded by placing it in the category of non-monotonic, defeasible reasoning.

As the Toulmin model was specifically designed for *use*, examples were given of the model in action in the construction of arguments leading to decisions, and in the analysis and evaluation of arguments. The adaptability of the model was illustrated by examples of its use in the formulation of arguments derived from a variety of speech acts.

## Chapter 6

### Chapter 6 Notes

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## Conclusion

This study has had a narrow focus, i.e. the extent to which the Toulmin model of argumentation retains a relevance and usefulness in the current state of development of informal logic/argumentation theory, and a consideration of the circumstances which have contributed to this result. Given the number and variety of Toulmin's publications from mid-twentieth century to the first decade of the twenty first century, a comprehensive analysis of his life work would have led one in many directions and would have included a critical analysis of details of aspects of his work which would have distracted attention from the main achievement under review. This polymath found his way from the study of physics through to philosophy, philosophy, history and sociology of science, and the history of ideas in general. In addition, he has written about the technologies associated with the physical sciences and has published material on many aspects of ethics, particularly as applicable to medical, bio-medical and ecological concerns.

A central concern of all his work has been the deployment of reason in pursuit of understanding, and the breadth of his commentary has been informed by references to literature (Renaissance, nineteenth century, twentieth century poetry and fiction); the political and social history of various periods; economics in theory and practice; and contemporary conduct of international affairs, including the influence of non-governmental organizations in modern global controversies. His commitment to the centrality of reason in the practical experiences of everyday life was exemplified by his membership of the U.S. National Commission for the Protection of Human Research Subjects in the nineteen-seventies. The outcome of the deliberations of this commission reinforced his conviction that agreement following rational debate was possible without recourse to deductive reasoning on the basis of *a priori* principles. He was impressed by the ability of those from widely differing backgrounds to reach decisions on specific disputed cases, and this led him, with A.R. Jonsen, to producing *The Abuses of Casuistry* (1988), a revitalising of *casuistry*, a system of ethical reasoning that had been dormant for centuries. A selection of the Toulmin publications will serve to indicate the scope and depth of

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this philosopher's range of interest and achievement: *The Place of Reason in Ethics* (1950), *Introduction to the Philosophy of Science* (1953), *The Uses of Argument* (1958), The Ancestry of the Sciences trilogy (with Jean Goodfield) dealing in turn, in the course of the nineteen sixties, with the development of *astronomy, the nature of material things*, and the concept of *time*; the ambitiously planned *Human Understanding* (1972), *An Introduction to Reasoning* (1979), *The Abuse of Casuistry* (1988), *Cosmopolis* (1990), *Return to Reason* (2001). These were, perhaps, the more notable productions, but there were, in addition, other analyses of scientific and philosophical issues, e.g., *Foresight and Understanding* (1961) and *Knowing and Acting* (1976), as well as regular journal articles, conference papers and interviews dealing with aspects of the physical and social sciences and the social, philosophical and historical background to all of these concerns.

It is clear that Toulmin's main objective through his many publications has been the application of reason to experience and challenges facing humankind, and in his late work he has been making the case for a society underpinned by a tolerant rationality balanced by reasonableness. This vision owed much to his view of the Renaissance humanism reflected in the work of writers such as Montaigne, and he saw it as essential to "binding the wounds" inflicted, literally, by world wars and, metaphorically, by the *pursuit of certainty* which became dominant from the seventeenth century onwards, and was seen as futile by the late twentieth century.

Because of the wide range of his preoccupations, it has always been difficult to identify the areas in which to locate his chief claims to expertise; should the academy consider him principally as an ethicist, a philosopher of science, an historian of science or an argumentation theorist? His work in all of these areas is worthy of attention, but it is necessary also to do justice to the academician who was determined to bring the fruits of his academic reflection to bear on the demanding problems experienced in the course of human living.

However, the very extensive range of his interests was a feature that raised questions concerning some of the detail of his work in certain areas. It was difficult to accept that a single person could achieve and display professional competence and the meticulous scholarship that is expected in each of the disciplines to which he

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turned his attention during sixty years of authorship. His style, lucid and engaging, largely eschewing technical language in philosophy, was not universally favoured by professionals in the fields about which he chose to write. To his credit, it was noted that he took pains to elucidate his writing on science by examples that were intelligible to the non-scientifically trained.

Covering such a wide range of topics, and offering speculative commentary on, for example, some aspects of scientific history, Toulmin left himself open to challenge by specialists in the area in question. Reviewing *Human Understanding* (1973), which had been planned as the first of a three-part comprehensive analysis, Cohen, having subjected Toulmin's version of scientific development to detailed criticism, claims, convincingly, to have identified a number of flaws. These strictures extend from alleged misrepresentation or misquotation of others' work, to factual errors concerning the contemporary political world and a misreading of the then current state of organisation in the discipline of psychology. It is not necessary for present purposes to decide whether such faults are critical weaknesses in the Toulmin case for an evolutionary philosophy of science – Cohen subjects it to intense scrutiny on other grounds – but it does encourage a reader to approach other work by Toulmin with a sharpened focus.

As *The Uses of Argument* has been the Toulmin text at the centre of this study, it is appropriate, as part of the conclusion, to refer to infelicities and/or inconsistencies that have been identified in his treatment of argumentation but were not treated at length in the body of the study. This will contribute to a more balanced estimate of his achievement, while not taking from the thesis that the Toulmin model of argumentation remains relevant to, and serviceable to, the contemporary theory and practice of argumentation. It should be borne in mind that Toulmin was not unaware of some areas in which *definition* was not absolute, and that the case made for some features of the model was not totally watertight. Reference to some inconclusive aspects of the Toulmin model will contribute to a more complete picture of his project, and emphasise the durability of the model in spite of potential vulnerabilities.

It is commonplace to refer to the model of argumentation developed in *The*

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*Uses of Argument* as a “jurisprudential” model. This arose from Toulmin’s own remarks in the text to the effect that one might say that logic is generalised jurisprudence (p.7), and he appears to make it clear the analogy with jurisprudence will be kept in mind in the course of considering the rational process (p.8). In order, he says, to lay out arguments with “complete candour”, a pattern at least as sophisticated as that demanded by the law will be needed (p.96). His main point seems to be that the “proper order” for the layout of an argument can be derived from the practice of the law, although he does concede that there will be different procedures in different kinds of cases, e.g. civil and criminal. If Toulmin were seeking examples of “proper order”, he might have looked to many aspects of his observation and experience, from the procedure involved in ceremonial occasions to the meticulous organisation and methods followed by scientists in their efforts to verify an hypothesis. In the event, the analogy with the law was not invoked to elucidate a detailed comparative working out of the argumentation scheme, although he does refer to the work on *defeasibility* by H.L.A. Hart as a forerunner of the rebuttal element of the Toulmin model of argumentation. Indeed, when, in *The Uses of Argument* (p146) Toulmin came to make his case against the adoption of the analytic syllogism as the paradigmatic form of argument, he announced that he would proceed in the manner of a scientist by stating an hypothesis and seeking its verification. While this will be followed by the passing of judgment on contemporary logicians, this usage owes less to jurisprudence than to the ordinary employment of the language of evaluation.

Since, therefore, the references to the law and the reiteration of the common opinion that *The Uses of Argument* is based on a jurisprudential model would lead one to expect a fully integrated system, with the example of legal procedures providing the solid basis and intricate architecture for the Toulmin model, there is a measure of surprise that this does not happen. Such surprise, however, is dissipated by Toulmin’s own clarification in an interview with Gary Olson, in which he corrects what had been, he says, a mistaken impression for many years: “[f]or the record, I didn’t base *The Uses of Argument* on a jurisprudential model. I wrote the book almost entirely and then at the very end it occurred to me that as a way to add a

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bit of clarity to the exposition, the comparison with jurisprudence would do no harm ... it wasn't in my mind when I was first working up the content of the book" (*JAC* vol.13, 1993). Taken together with the fact that the chapter on "Probability" in *The Uses of Argument* had been published earlier, this lends support to the view that *The Uses of Argument* is not a fully thought out theory of argumentation. Of course, Toulmin had never claimed that it was, but it is arguable that closer attention to some detail would have rendered it less vulnerable to criticism. The creative insertion of a putatively illuminating analogy at the end of the process of constructing a philosophical argument could be seen as something of a distraction, especially as it did no work that could not have been done by Toulmin's more natural affinity with methods and procedures employed by scientists.

Toulmin's discursive style of presentation, particularly engaging to the non-specialist, was less than satisfying to those looking for strict definition, i.e. precise delimitation of some of the basic concepts in the model of argumentation developed in *The Uses of Argument*. As he did not reply in specific terms to charges of imprecision, there remain some unresolved questions about what it was, exactly, he intended, or whether such terms as "warrant" or "field" could ever have been given as precise a definition as one would expect from a scientist. We must remember that the five essays which constitute *The Uses of Argument* were regarded by Toulmin as "trial balloons" designed to draw the fire of others, it being understood that he did not believe that he was offering the final word. Nevertheless, since warrants were the central feature of the argumentation model, it would be reasonable to expect a stricter definition than "rules, principles, inference-licences or what you will instead of additional pieces of information" or "general, hypothetical statements which can act as bridges", which can, however, be expressed as indicative statements (p.98). The solution is confused, rather than clarified, by the suggestion that a sentence in English may be a "datum" in one situation and a "warrant" in another, and "even, perhaps, in some contexts, do both these things at once" (p.99). A willingness to look beyond the grammatical surface and share Toulmin's commitment to the function of each of the elements will serve to alleviate the uncertainty. There remains, however, scope for the logician to be negatively critical of the potential for

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confusion, and Toulmin might have done more to anticipate this.

The reference to “candour” in the preceding paragraph identifies another feature of Toulmin’s treatment of argumentation, about which there was less than complete satisfaction. A specific purpose, as stated by Toulmin, in designing a new layout of arguments, was to provide greater candour in order to render the task of analysis and evaluation more efficacious. Common usage of “candid” or “candour” carries some suggestion of openness or some degree of sleight-of-hand where this quality is lacking. When Toulmin refers to “complete logical candour” (p.96), it might be thought that there is some suggestion that logical systems which he is intent on replacing are somehow complicit in obfuscation. This impression is heightened by his reference to “apparently innocent forms used in syllogistic arguments” which “turn out to have a hidden complexity” (p.108). However, it is not obvious that, as he maintains, “Swede can be taken almost certainly not to be Roman Catholic” is a more candid statement than, “The proportion of Swedes who are Roman Catholics is less than 2%”. Clearly, he intends the former to function as an inference warrant based on factual information, but it impresses more by its greater generality than by its greater transparency. If all that Toulmin had in mind was clarity and transparency in strict linguistic terms, then the six-part layout of the Toulmin model, with each element clearly delineated, was likely to improve on the tri-partite syllogism, and Toulmin’s objective was on the way to achievement.

Other features of the Toulmin model also invite alternative viewpoints, and have the capacity to leave unanswered questions. One can make strict demands in terms of definition and demarcation, or allow a willing suspension of same. The latter implies that one must approach the Toulmin model with a disposition to share in the overall thrust of the Toulmin art of argumentation. When, for example Toulmin refers to “fields of argument”, we can intuitively grasp his intention. We realize that this concept is crucial to deciding where to find support for a claim that is being advanced. Toulmin does offer examples of different “fields”, asserting that, in general, arguments will belong to the same field when the data and conclusions belong to the same logical type. There is, however, a natural inclination to conflate “fields” with “disciplines”, “professions” or “spheres of interest”, so that the extent

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of the range of fields seems unlimited and the concept seems to lose some of its efficacy. As it is a determinant in setting the criteria for the evaluation of arguments, it would be desirable to have a firmer grasp of its extent and limits. Difficulties may arise in deciding on whether an issue in dispute belongs to an agreed field of any kind, or to which of a possible variety of fields an issue should be assigned. Since Toulmin was intent on providing for the conduct of all kinds of argument, including those arising in mundane experience, it must be assumed that, on occasions, warrants would derive from shared social understanding or generally accepted sources of common sense. As with other aspects of the Toulmin model, elaboration of the concept of “field” with worked examples were provided in *Introduction to Reasoning* (1979).

Toulmin’s treatment of “backing”, which the fields will provide for warrants, also gave rise to some uncertainty. The reader can comprehend Toulmin’s intention when providing for backing in the six-part argumentation model: some categorical factual information will be evinced in support of the particular warrant chosen when inferring a claim. However, Toulmin sometimes uses what was intended to be a technical term within the model, i.e. “backing” for a warrant in the looser sense of more generalised support which, in the first instance, would be data. This has resulted in difficulty for some in distinguishing “data” from “backing”. Prior to the development of the model, Toulmin had used “data” and “backing” as synonymous in *Philosophy of Science* (p.18). However, when, in *The Uses of Argument* (p.103), he exemplifies the core of a good argument as one in which “D-ish facts really do suffice as backing for C-ish claims”, “backing” seems to be confused with “data”. On another occasion, as pointed out earlier (p.63), in the preface to the re-issue of *The Uses of Argument* (2003), Toulmin, refers to “the varied kinds of backing relied on in the different fields of practice and argument”. Here, he is making a connection with the Aristotelian *topics* which are generally seen as the counterparts of *warrants*, and it is clear that the use of backing in this context is non-technical and is intended to convey the general notion of “support”. Variations in the use of terms at the centre of the model could have been avoided without loss to the Toulmin method of procedure.

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The unresolved questions raised are not, of course, to be classed with the major criticisms by such as Castaneda, Cowan and others, as detailed earlier. In those instances, the very basis of Toulmin's approach to logic was being called into question, and they have already been responded to by the provision of the context within which Toulmin was working and the parameters of his achievement. Clearly, some of the criticisms were justified; Toulmin, for example, chose to concentrate on the traditional categorical syllogism as representative of what needed to be revolutionised. While he was aware of all the other forms of logic which had been developed through the nineteenth and twentieth centuries, he did not subject them to scrutiny, and did not acknowledge that these developments themselves represented dissatisfaction with the perceived inadequacies of the traditional syllogism. Because of the project which he had in mind, Toulmin could disregard the developments in mathematical/symbolic logic as being even less relevant to real life argumentation than the categorical syllogism, but he would, no doubt, have garnered credibility for his stated need for a revolutionary approach to argumentation by dealing with them in some detail, even if a definite treatment were neither possible nor necessary. He was not writing a history of logic and he was not intent on modifying existing systems in accordance with their conventions. A broader approach to existing conditions would have deflected criticism, but in the event, in spite of the shortcomings referred to above, Toulmin achieved substantially what he set out to do.

This study, *Between Logic and Rhetoric: Toulmin's Theory of Argumentation*, has promoted and supported the contention that the Toulmin model of argumentation has been a significant contribution to the theory and practice of argumentation and continues to be relevant to the evolving project of informal logic/argumentation theory.

The study proceeded by identifying Toulmin's approach to *reasoning* in various fora, particularly, to begin with, in ethics and science, followed by a close analysis of *The Uses of Argument* (1958). While Toulmin's academic grounding was in physics, he had, from an early stage, extended his range of interests to include history and philosophy of science, ethics, literature and art, a reflection of his

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admiration for the humanistic breadth of vision as it flourished before what has come to be known as the “Age of Modernity”. This diversity of interest and resulting insight, illuminated by his technical work in the strict discipline of reasoning, contributed to the enduring value of his work in the field of argumentation.

Characteristically, Toulmin differed from predecessors and contemporaries in his approach to ethics; rather than trying to arrive at an uncontested *definition*, he chose to analyse the *function* of ethics, and thus identify the path by which acceptable ethical decisions might be reached. If, as he believed, the function of ethics is to facilitate the maximal harmonization of society, then it is the role of reason to show how this is to be achieved. However, this demands elucidation of the *kind* of reasoning that is appropriate to ethical matters; in this regard, Toulmin rejects the notion that reason can be applied only to the use of language that is *descriptive*. Reflecting the view of Wittgenstein concerning the multiple uses of language, he maintains that since there are diverse uses of language, this will necessitate a diversity in the use of reasoning. No one logical test will be adequate to cater for all the complexities of moral reasoning. This insistence on diversity, the rejection of the view that reasoning can be reduced to a single theory, would be central to the subject of his most influential work on the *uses* of argument.

This diversity in reasoning, i.e. the variety of inference methods, is, according to Toulmin, apparent even within science. In *The Philosophy of Science*, Toulmin emphasises the difference in the kind of inference used by the natural historian and the physicist. While the former may arrive at conclusions by induction through enumeration, this is not the process employed by the latter. Nor, he maintains, are the substantial inferences that occur in the physical sciences based on a syllogistic structure. Inferences will more likely be made on the bases of models and mathematical calculi, and inferences will be drawn in accordance with the standards applicable to the matters being investigated.

This concentration on forms of inference was brought to a new level of analysis in Toulmin’s *The Uses of Argument* (1958), and this study has sought to identify the employment of good reasoning in the positions adopted by Toulmin to the various features of argumentation which he addresses, e.g. concepts of

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probability, analytic and substantial arguments, fields of argument and modal qualifiers, culminating in the six-part layout of arguments which has come to be known as the “Toulmin Model”. The efficacy of this system has been justified, in spite of some inconclusive issues detailed earlier, as has the main epistemological implication as outlined by Toulmin: substantial arguments, the kind with which Toulmin is concerned, must not be judged by analytic criteria, e.g. entailment. Substantial arguments are to be evaluated in accordance with the standards appropriate to their particular field.

Having presented an analysis of Toulmin’s views of reasoning and inference, the present study attempted to place his work in the broader context of argumentation and the emerging movement in informal logic. The favourable comments by pre-eminent theoreticians and practitioners of informal logic, for example, van Eemeren, as well as the collective endorsement of contributors to *Arguing on the Toulmin Model* (2006), have been cited as supports for the claim concerning Toulmin’s continuing relevance. Those commendations and earlier affirmations by such as Brockriede and Ehninger, Lewis and rhetoricians in the schools of Communications, were earned in spite of initial denunciations by logicians such as Castaneda and Cowan.

It became clear, however, that the earlier criticisms were, at least, in part reactions to what was mistakenly considered to be a work “in logic”, as traditionally understood, notwithstanding the fact that Toulmin had been specific, in the opening of *The Uses of Argument*, that he intended to deal with problems “about logic”. His purpose, that is, was not to assume the apparatus of traditional, formal deductive logic and submit it to refinement and/or modification. Rather, his objective was to identify the problems which arose when one tried to apply traditional logic to everyday arguments. It was this determination to develop a system that would be applicable to a wide range of experience that put him at odds with orthodox logicians. What was regarded as “anti-logic” by practitioners of formal logic was received favourably by those who wanted a means of constructing substantial arguments in all areas of life, social, professional and political, in which alternative or multiple opinions might be possible, and where certainty or “necessity” of

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outcome is not normally available. Furthermore, as formal deductive logic is value-neutral, its inferential value, bound by rigid rules, is predictable and certain of outcome to the point of tautology; but it cannot result in new knowledge or lead to new insights by rational reflection on real situations.

It is this deficiency which has motivated the informal logicians cited in this study to fashion a theory and instrument of argumentation, and define the conditions within which it would be most likely to produce acceptable results. In the course of this project, a revival of attention to rhetoric and a renewed analysis of traditional fallacies was incorporated into the development. Toulmin did not specifically highlight these elements in *The Uses of Argument* (1958) (attention to fallacies followed in *Introduction to Reasoning* (1979)); his main objective was to refute the then current headline that inference was either “deductive or defective”. The positive response to his intervention by practitioners in the schools of Communication was to surprise him. Clearly, the conditions were auspicious in that there was an increasing impatience, among those who wished to apply good argument techniques to practical affairs, with the perception that formal deductive logic was in touch with no reality outside itself. The Toulmin model, with its apparent ease of use, commended itself especially in colleges in North America where there had been a tradition of competition in rhetoric and argumentation.

As claims were advanced by, for example, Otto Bird, that Toulmin’s model of argumentation, with the *warrant* as its centrepiece, was derived from the medieval Topics, this study examined the model in the light of the tradition of *Topoi* outlined by Aristotle and transformed by the middle ages as a result of work by Cicero and Boethius. While Toulmin, at a later time, acknowledged the similarity between the Aristotelian basis for argument and his own, and that if he were rewriting *The Uses of Argument* he would incorporate a further insight from Aristotle, it is clear that his detailed appreciation of Aristotle’s work on argumentation came after *The Uses of Argument*. His recognition of the centrality of the *warrant* owed much to the concept of “inference licence”, i.e. the basic notion that the establishment or acceptance of one fact allows us to conclude or claim another due to the shared acknowledgement of a general state of affairs. It was Toulmin’s recognition of the relevance of this

## Conclusion

reality in his own time, and his building of a structure around it to maximise conviction, that set the Toulmin model of argumentation apart. Toulmin, like Aristotle, was concerned to devise a method of presenting arguments in favour or against claims which are based, as many real arguments are, on respected opinions or incomplete information. While not capable of guaranteeing *certainty*, such arguments are capable of earning *acceptability* and are commonly used in significant areas of personal, social, public and professional life. It was a worthy project, therefore, to set out a method by which arguments in these categories could be rendered “worthy of acceptance” or “more worthy of acceptance” as a result of the candour of their layout and the weight and relevance of the supports provided. Toulmin and Aristotle shared the same objective; in form they were philosophers of their time.

For some, the model, without its underpinning philosophical outlook, was to be a substitute for formal deductive logic; for others it was to enjoy an uneasy co-existence; but in the course of the last half century, the Toulmin model has become a benchmark in the discipline of argumentation. It may still be seen as a work in progress – Toulmin made it quite clear that he was not saying the last word on the matter – and suggestions for its refinement and improvement, as detailed in the foregoing study, have been advanced. Nevertheless, it stands as a vehicle for claim-making and claim-supporting which purports to encapsulate the most natural mode of reasoning and, therefore, to be likely to have the widest usage. Toulmin had invited successors to add to the model he had fashioned; Verheij’s remarks, quoted in this study, show how the Toulmin model provided a suitable basis for developing computer programmes for employment in argumentation. As Toulmin had deliberately espoused the cause of natural language argument, there may be a question as to whether this was the development he had in mind. It seems clear, however, that he would have seen this as timely, a response to the current way of the world. He would still be credited with having provided the template for subsequent programming: a candid lay-out of substantial argument in which the separate elements are transparent and open to question and acceptance/rejection, and which responds to human experience, as regards the features which it includes.

## Conclusion

This feature of the model, i.e. its accurate reflection of the human method of making a case, is of central importance in any evaluation of the reasons for its continuing importance. While Toulmin ascribed the adoption of his model to, among other things, the fact that he used clear, natural and, for the most part, non-technical language, it can be shown that the sequence in the Toulmin model commends itself as a natural embodiment of the human need and inclination to argue. Typically, a claim is advanced and, if challenged, is supported by “adequate reasons”. This elementary enthymeme is the basis of the Toulmin model. In many instances, especially in a very closed psycho/social environment, this two-part system would complete the transaction. In a more diverse company, however, the “adequate reasons” might have to be justified by some nomological pronouncement, which, on occasion, would need support. As there is always the possibility, in an uncertain world, that one has “missed something”, or that new information or insight may become available, it will be prudent to enter a caveat and so “hedge” the claim/conclusion by some modal limitation. The design, as Toulmin developed it, exhibits an organic evolution of the basic structure in accordance with rationally anticipated possibilities.

Toulmin could not have foreseen the extent to which there would be a growing receptivity to his prescription for argumentation. On the one hand, the world of the “post-modern”, with its increasing distrust of arbitrary decision-making and dogma, and its demand for participation at all levels of society in Western liberal democracies, needed a method of constructing cogent arguments on all matters affecting citizens, and of evaluating the arguments of those who would be in positions of leadership. On the other hand, the increasing dominance of the computer provided scope for the use of the Toulmin system to be used in the development of programmes for use, for example, in the solution of medical and legal disputes.

In spite of the acknowledged variety in the nature and uses of argument, it is clear that informal logic will continue to seek a more unified theory and to enunciate protocols for the conduct of fruitful argumentation. In a world that has awoken from the “dream of certainty” which characterised modernity, it seems very likely that the Toulmin vision and model of argumentation will continue to be influential.

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