

# Advances in the Theory of Argumentation Schemes and Critical Questions

DAVID M. GODDEN and DOUGLAS WALTON

DAVID M. GODDEN  
*Department of Philosophy*  
*The University of Windsor*  
*Windsor, Ontario*  
*Canada N9B 3P4*  
*goddendm@uwindsor.ca*

DOUGLAS WALTON  
*Department of Philosophy*  
*The University of Winnipeg*  
*Winnipeg, Manitoba*  
*Canada R3B 2E9*  
*d.walton@uwinnipeg.ca*

**ABSTRACT:** This paper begins a working-through of Blair's (2001) theoretical agenda concerning argumentation schemes and their attendant critical questions, in which we propose a number of solutions to some outstanding theoretical issues. We consider the classification of schemes, their ultimate nature, their role in argument reconstruction, their foundation as normative categories of argument, and the evaluative role of critical questions. We demonstrate the role of schemes in argument reconstruction, and defend a normative account of their nature against specific criticisms due to Pinto (2001). Concerning critical questions, we propose an account on which they are founded in the R.S.A. cogency standard, and develop an account of the relationship between critical questions and burden of proof. Our ultimate aim is to initiate a reconciliation between dialectical and informal logic approaches to the schemes.

**KEY WORDS:** argumentation schemes, burden of proof, critical questions,

**ACKNOWLEDGEMENTS:** An earlier and much abridged version of this paper was presented at the conference *The Uses of Argument* (McMaster University, 18-21 May, 2005) under the title "The Nature and Status of Critical Questions" and appears in the proceedings (David Hitchcock and Daniel Farr (eds.), pp. 476-484; © the authors; circulated only to attendees). Sections 6 and 7 of the current paper are slightly revised adaptations of material presented in this earlier version. The authors would like to thank R.C.Pinto for his helpful comments on earlier drafts of this paper. Research for this paper was made possible by separate research grants from the Social Science and Humanities Research Council of Canada held by each of the two authors. David Godden would also like to recognize the support of the University of Windsor.

## 1. INTRODUCTION

Argumentation schemes<sup>1</sup> are stereotypical patterns of defeasible reasoning that typically occur in common, everyday arguments (Blair, 1999; 2000; Walton, 1990a).<sup>2</sup> A standard account of argumentation schemes describe them as representing different types of

---

<sup>1</sup> For a brief overview of the literature on argumentation schemes see Garrsen 2001.

<sup>2</sup> We agree with Blair (2000) that schemes represent patterns of reasoning or inference. Because they can be used to classify types, or forms, of argument these schemes have come to be called 'argumentation schemes'. We use the term 'schematic argument' to indicate a particular argument whose structure can be represented as being an instance of a given argumentation scheme.

plausible argument which, when successfully deployed, create presumptions in favor of their conclusions and thereby shift the burden of proof to an objector. Associated with each argumentation scheme is a set of critical questions to be used in the evaluation of arguments of the corresponding type. The posing of a critical question has the effect of defeating the initial presumption and shifting the burden of proof back on to the initial proponent.

In recent years, the literature on argumentation schemes has experienced a growth spurt and, despite the considerable theoretical and technical advances being made, we presently stand in danger of losing any cohesion that might have existed in the treatment of this important topic in argumentation. Yet, these advances have also demonstrated that changes in the existing accounts of argumentation schemes may be not only desirable but required.

The pressure for change has principally come from two directions. In applied argumentation theory (particularly in the field of artificial intelligence) various competing models of schemes and their accompanying critical questions are being developed and implemented, prompting important questions about how critical questions should be represented in argument diagrams. We leave this important topic for another occasion.

In the theoretically oriented literature several questions and criticisms have been posed that stand in need of resolution. Significantly, Blair (2001) has put a number of points on the theoretical agenda. These include:

- (i) the ultimate nature of argumentation schemes: Are schemes descriptive or prescriptive? What do schemes represent, patterns of reasoning or types of argument?
- (ii) the proper classification of schemes: How general should the schemes be? How should they be distinguished and classified?
- (iii) the foundation of argumentation schemes: If normative, what is the grounding of their normativity? How do presumptive schemes relate to other forms of reasoning.
- (iv) the evaluation of schematic arguments: What is the role of critical questions in the evaluation of schematic arguments? How should the correct number and kind of critical questions accompanying a scheme be determined?<sup>3</sup>

Also, Pinto (2001a, 2001b, 2003) has raised several important challenges to the standard picture of argumentation schemes. Specifically, Pinto challenges the idea that schemes are especially useful in argument reconstruction (2003), and that they should be seen as normative (2001a, 2001b) because not all *bona fide* instances of argumentation schemes effectively create presumptions in favor of their conclusions. Similarly, Pinto (2003) challenges the standard account of the role of critical questions, arguing that they do not always have the argumentative force standardly accorded to them of shifting the burden of proof back to a proponent.

The purpose of this paper is to bring some of these divergent views into dialogue with one another, and to determine what progress can be made in the theory of argumentation schemes in light of recent developments. Specifically, we propose solutions to several theoretical problems surrounding argumentation schemes. We maintain that argumentation schemes are normative structures of plausible reasoning that

---

<sup>3</sup> It should be noted that Blair himself (1999; 2000; 2001) has contributed significantly to the resolution of some of these issues.

have an important role in both argument reconstruction and argument evaluation. We argue that the critical questions associated with a scheme should be a function of two factors: their function and their foundation. The normative, or theoretical, foundation of critical questions as tools for the evaluation of schematic arguments is that they test one (or more) of the three aspects of argument cogency: relevance, acceptability and sufficiency [R.S.A.]. The function of a critical question is to test a typical or common way in which an argument of a certain schematic-type can fail to meet one (or more) of the R.S.A. criteria. Thus, critical questions are a kind of evaluative *topoi*, providing a list of individually necessary conditions for the success of particular schematic arguments. On the other hand, because they represent only commonplace ways in which arguments of some schematic-type can default, they are not jointly sufficient conditions for the success of a schematic argument. While do not seek to resolve every question surrounding argumentation schemes and critical questions, we hope that the paper will contribute to a working-through of Blair's theoretical agenda, and provide at least provisional answers to some of Pinto's critical points.

## 2. CLASSIFICATION OF SCHEMES

Questions concerning the correct typology of argumentation schemes are pressing because typologies are proliferating - sometimes without any reference to existing typologies - and this development is one of the causes of the fragmentation in the literature. Historically, different typologies can be found in the classical works of *Rhetoric to Alexander* (cf. Braet, 2004), Aristotle, Cicero, Quintilian and Boethius, and the medieval works of Peter of Spain, Abaelard and William of Ockham (cf. Kienpointner, 1987, pp. 280-284). More recently, typologies have been given by Perelman and Olbrechts-Tyteca (1969), Hastings (1963) and Kienpointner (1987; 1992).

Several existing typologies are predominant in the literature today. Hastings (1963, p. 11) sought to distinguish schemes according to "modes," "processes or lines of reasoning by which arguments move from premises to conclusions," Kienpointner (1987) classifies schemes according to the types of their warrant, while van Eemeren and Kruiger (1987, p. 71) classify schemes according to "the way in which arguments ... [are] used in the attempt to convince." The Pragma-Dialectical school recognizes three schemes corresponding to three basic relations that can obtain between premises and conclusions: a symptomatic relation (e.g., argument from sign), a relation of comparison (e.g., argument by analogy), and a causal relation (e.g., causal argument and means-end argumentation) (Garssen 2001, pp. 91-92; cf. van Eemeren and Kruiger, 1987, pp. 73-74, van Eemeren and Grootendorst 1992, pp. 98-99). Van Eemeren and Grootendorst (1992, pp. 98-99) further recognized the role that schemes and questions can play in the dialectical evaluation of argumentation.

Situating himself in the tradition that begins with Aristotle's *Topics* and runs through Hastings (1963) and Kienpointner (1992), Walton (1996) recognizes a wide array of schemes corresponding to common patterns of reasoning employed in everyday argumentation such as argument from sign, argument from example, argument from position to know, argument from expert opinion, argument from cause to effect, argument from analogy, argument from precedent, etc. More recently, Katzav and Reed (2004a, 2004b) have developed a typology based upon different relations of conveyance,

examples of which include the relations of genus to species, sameness of meaning, implication, conserved quantity, and singular cause to effect. Since relations of conveyance represent warrants (Katzav and Reed, 2004a, p. 5), such an approach amounts to classifying arguments according to the type of warrant involved in the argument.<sup>4</sup>

Given this multitude of typologies, it seems that we require some general set of principles by which to enumerate and classify argumentation schemes. From a purely theoretical point of view, we agree with Garrsen (1994, pp. 106-107) that a minimal set of exhaustive, mutually exclusive schemes is desirable, and that the categories required will be a function of the purposes of classification. Walton and Reed (2003, p. 196) propose that a typology should be rich enough to encompass a significant portion of everyday argument types, simple enough to be effectively taught and usefully applied in analysis, fine-grained enough to be effective as an evaluative tool, rigorous enough to be implemented in automated models and clear enough to be integrated into traditional diagramming techniques. We also feel that a typology should reflect distinctions among arguments made at an intuitive, common-sense, or pre-theoretic level by everyday arguers.

Perhaps the most developed solution to the classification question has been provided by Blair (2000) who holds that schemes are *reason-types* and can be individuated by the types of reasons employed in patterns of reasoning. “A scheme will be the scheme of a reason, and a reason is the smallest self-standing unit of support for a position.” Descriptive schemes provide accurate representations of patterns of reasoning commonly employed by reasoners, even though these reasonings may not be cogent. (Thus fallacies are descriptive reasoning schemes on Blair’s account, but instead of being characteristically good they are characteristically bad). Conceiving of schemes as *reason-types* does not entirely determine the level of abstractness or specificity at which the reasoning should be represented. On Blair’s account, the warrant employed in the reasoning determines the level of specificity of a scheme: “a scheme must represent the particular warrant of the reasoning: the properties of the reasoning that are salient to its (alleged) cogency.” Thus Blair’s account agrees with that of Katzav and Reed (2004a) in that schemes can be distinguished according to their warrant or “relation of conveyance.” Cogent schemes “portray patterns of reasons which can have instantiations that are cogent,” and can thereby be said to represent normative categories of reasoning.

In our view, what is most important is that the aims of classification will determine the relevant classificatory categories. This means that a multitude of different typologies need not compete with one another and thereby pose a problem for a general theory, so long as the different systems serve different ends. In this respect, we agree with Blair’s (2000) conclusion that “[s]ystems of classification are relative to their purposes. Consequently, there can be no ‘correct’ typology of reasoning schemes. The only pertinent question is whether any particular classification successfully or optimally

---

<sup>4</sup> Katzav and Reed (2004a, p.5) write: “Premises represent conveying facts. Conclusions represent conveyed facts. Warrants represent (often not explicitly) the relationship between the conveying facts and the conveyed facts, and they usually have the form of conditionals. The classification of an argument ... makes explicit which relation of conveyance the warrant represents.” Katzav and Reed (2004a) actually provide a tree structure describing different types of relations of conveyance each of which can be instantiated by several specific relations. For example, the conveyance relation of implication is an instance of analyticity which is in turn a species of internal conveyance relation.

fulfills its purpose.” By the same token, a central aim of each classification system is to aid in the structural analysis and evaluation of reasoning and argument. Thus, to whatever extent schemes can provide generalizable answers to the questions of how a particular piece of reasoning works (or is supposed to work), and whether it actually works, schematic classification will be a useful tool to theorists and arguers. The workings of a piece of reasoning are explained by the premises and warrant at work in the reasoning, and it is these features which ultimately provide a piece of reasoning with its rational and evidentiary structure.

### 3. THE RECONSTRUCTIVE ROLE OF ARGUMENTATION SCHEMES

Standardly, argumentation schemes have been assigned a role in the analytical reconstruction of argumentation, as well as its evaluation. In reconstruction it is thought that, by providing paradigms of certain common types of reasoning, argumentation schemes can be used to identify and categorize instances and can thereby help guide the analyst when identifying implicit claims and filling in the gaps in the reasoning of everyday arguers.

This view is challenged by Pinto (2003). By critically analysing an example offered by Walton and Reed (2003) Pinto claims that “we’re able to identify applicable schemes only because we’ve *already* identified implicit premises and an unstated intermediate conclusion. Application of the schemes seems to be to be a consequence, and not a cause, or reconstructing the argument [in a particular way].”

To a point, Pinto is right here. Identifying an argument as being an instance of a particular scheme cannot rely solely on the scheme itself. Instead, the descriptive accuracy of reconstruction will be established by situational as well as textual and contextual features of the argument. Indeed, if Godden (2005) is correct, descriptively accurate reconstructions may well involve knowledge of, or rely on postulations regarding, facts about arguers themselves such as their goals, or intentions. Further, schematic classification of an argument instance might easily require supplying some missing or unstated components of the argument. Clearly, if the schemes have a role to play in reconstruction, it cannot be this.

Yet, this is not to say that the schemes have no role to play whatsoever.<sup>5</sup> Insofar as the schemes actually do capture types of argument commonly employed in everyday argumentation, a worthwhile interpretative strategy is to determine whether there are grounds (explicit, contextual, or situational) for thinking that the argumentative strategy being employed on some occasion is to offer an argument of some common type. Clearly, some kind of preliminary analysis is involved in classifying instances of argumentation according to schematic structure. The schematic categorization of an argument need not involve supplementing it with unexpressed claims. Instead, schematic classification can be based on expressed premises indicating an enthymematic statement of an argument of a certain type, as well as relying on textual cues (such as indicator phrases), and

---

<sup>5</sup> Nor is this to suggest that Pinto (2003) holds that the schemes play no role in reconstruction. Instead, Pinto suggests that the schemes might have a role to play in reconstruction because they supply a set of critical questions which might be used to assess the strength of a reconstructed argument resulting from the addition of unstated premises to a stated argument in determining which of several such reconstructed arguments is most charitably attributed to an arguer.

contextual and situational information. These same factors might also justify supplementing the argument with unexpressed claims. While these claims might form parts of argument schemes, their addition at this stage does not depend on the classification of the argument as being an instance of that scheme. The role of a scheme at this stage of analysis is not to supply missing material to an argument, but to serve as a model for comparison. It is by comparing the argumentative material presented in a case with the known schemes that an argument can be classified as an instance of a certain scheme. The schematic identification of an argument, then, is a kind of interpretative, or hermeneutic, hypothesis which must always be checked against available information throughout the processes of analysis and evaluation.

Once an argument is identified as being an instance of a particular type, the schemes can play a significant role not only in the evaluation of that argument, but also in subsequent stages of its reconstruction. Insofar as the schemes capture all and only those premises and warrants involved in some particular type of reasoning, then the knowledge that a particular argument aims to embody an inference of that type contributes significantly to the structural analysis of that argument. Thus, if an instance of argumentation embodies *some* of the features of a particular scheme, that can give the analyst enough cause to see whether *other* aspects of the scheme can justifiably be used to describe the particular instance under consideration. In this way, knowledge of the schemes can help to rule out particular reconstructions as well. For example, if it is determined that some feature of the scheme cannot reasonably be used to describe some particular instance under reconstruction (e.g., there is evidence that the arguer would reject commitment to it), then that provides grounds for thinking that the arguer might have been using some other argumentative strategy. Alternately, the author of the argument under analysis might be deliberately misusing it, or failing to correctly deploy it, as an instance of some scheme. That is, she might not understand, or might wish to avoid, her commitment to claims involved in the proper use of arguments having this scheme. Thus, even if the claims identified in the scheme are not properly attributable to the author of the argument under analysis, the schematic classification of an argument will aid the analyst and critic in determining on what the structural integrity and argumentative success of such an argument depends. So, in the project of analysis, argument schemes serve as models of comparison during the initial identification of the type of reasoning at work in an argument, and further provide a complete profile of all the required components of the argument once such an identification is made. Finally, we note in passing that argumentation schemes also can play an important role in argument invention (or the generation and composition of argument) (Walton 2005a).

#### 4. NATURE AND NORMATIVITY OF ARGUMENTATION SCHEMES

Another central question in the theory of argumentation schemes concerns whether they are primarily normative or descriptive in nature. We take it as obvious that the schemes can be descriptive of at least some instances of reasoning, and questions regarding the frequency with which such schemes are employed in everyday argument is an empirical one which will not be addressed here (see Hitchcock, 2001). Above, we have shown the role that schemes can have in the primarily descriptive project of argument reconstruction. On the standard account, argumentation schemes are also normative, in

that schematic arguments provide at least provisional support for their conclusions. Walton (1996, p. x) has described the nature of this normativity as a kind of ‘binding’ on arguers capable of creating rational and discursive obligations: “If the hearer accepts the premises of the speaker’s argument, and the argument is an instance of a genuine and appropriate argument scheme (for the type of dialogue they are engaged in), then the hearer must or should (in some binding way) accept the conclusion [at least provisionally].”

Yet, a satisfactory explanation of the source of the normativity of schematic arguments is more difficult to come by. Justifying schematic arguments is an important task because, until recently, many common but defeasible forms of argument were identified as fallacious. Yet it has been shown that, in many instances, arguments of these types are not fallacious but instead provide provisional support for their conclusions. A completely systematic justification of defeasible schematic arguments is ruled out by their non-monotonicity and the situational determination of their acceptability (Blair 1999, p. 56; Pinto 2001b, p. 111). Hence, Walton (2005b) has argued that schematic arguments require not only a systematic but also a pragmatic justification. Walton writes: “The pragmatic dimension requires that such arguments need to be examined within the context of an ongoing investigation of dialogue in which questions are being asked and answered” (2005b, p.8). Thus critical questions play an integral role in the evaluation of individual schematic arguments, and because of this they also function in the overall justification of argumentation schemes.

Yet, even when this is accepted, the issue of whether the argumentation schemes represent “patterns of *good* reasoning” (Blair, 2000, emphasis added) remains open to question (Pinto, 2001a; 2001b). Perhaps the most developed answer to this question is provided by Blair (2001, p. 376) and is worth quoting at length. Blair writes:

What is the source of the probative force of a ‘valid’ inference or argument using such a scheme? The short explanation, I take it, lies in the irrationality of accepting the premises but rejecting the conclusion of such an inference or argument in those particular circumstances. ... In the case of deductive validity, the reasoning or arguing derives its normative force or cogency from the fact that the truth of the premises of such a scheme on that occasion guarantees the truth of the conclusion. Thus, to accept the premises, and yet to refuse to accept the conclusion, is irrational by virtue of being strongly inconsistent. ...

In the case of presumptively cogent reasoning or argument, it is plausible to understand the probative force of the scheme in question in those circumstances in a similar fashion. The reasoning or argument derives its cogency from the fact that to accept the premises and grant the validity of the inference using that scheme yet deny the plausibility of the conclusion, under the circumstances – without suggesting that any conditions of rebuttal exist – is pragmatically inconsistent. Given a strong presumption, to refuse to accept the conclusion without denying the evidence or finding a rebutting condition implies believing that there is some rebutting condition or circumstance for which there is no evidence. The skeptic in such a case is holding that the less plausible is the more plausible.

We find that Blair’s explanation contributes significantly to an understanding of the schemes as normative patterns of reasoning and structures of argument. Yet, this account

does not specifically address the challenges raised by Pinto. In the remainder of the section we consider and attempt to answer these concerns.

#### 4.1 Pinto's Argument Against the Normativity of Argumentation Schemes

The view that schemes are normative in nature has been challenged by Pinto (2001a, 2001b). Pinto argues that, since not every instance of a recognized argument scheme should be presumed to be a good presumptive argument – even accepting that good presumptive arguments can be defeated in special circumstances – we should conclude that argument schemes are not themselves normative (Pinto 2001a, p. 101). Pinto's reasoning goes like this: schematic arguments can fail for at least two categorically different kinds of reasons.

- (a) Schematic arguments can fail because the *inference involved is itself somehow defective* – that is, the information presented *within* the argument itself is somehow unable to establish a presumption in favor of its conclusion.
- (b) Schematic arguments can fail because of other considerations beyond the argument itself – that is, because new information external to the argument itself somehow defeats the inference at work in the original schematic argument.

Of the first kind of problem, Pinto lists the unacceptability of one or more of the premises, and a variety of reasons whereby the warrant (or unexpressed generalization at work in the inference) might be challenged. A schematic argument having problems of this type suffers from some internal defect; it fails to create a presumption in favor of its conclusion, and thereby fails to shift the burden of proof to an objector. Importantly, as Pinto recognizes, problems of this first type are not specific to non-deductive arguments.<sup>6</sup>

Of the second kind of problem, Pinto (2001a, pp. 102-103; emphasis removed) lists *underminers* (“additional facts that undermine the inference [at work in the schematic argument]”) and *overriders* (“additional evidence that overrides the inference in question, by supporting the negation of its conclusion”).<sup>7</sup> A schematic argument having problems of this second type might initially create a presumption in favor of its conclusion, but subsequently default when new information that somehow defeats the initial inference comes to light. Clearly, the second set of problems relates to the non-monotonic nature of schematic arguments.

It is their susceptibility to problems of the first sort that prevent argumentation schemes from marking normative categories of argument. Pinto's claim is that, since some schematic arguments can have problems of the first sort, these arguments will fail to initially establish presumptions in favor of their conclusions, despite their being an instance of some recognized scheme. Because not all schematic arguments successfully establish presumptions in favor of their conclusions, the schemes themselves should not

---

<sup>6</sup> We hold that terms such as ‘deductive’ and ‘presumptive’ indicate standards of evidence against which arguments can be measured, not types of arguments. (They can also properly be used to indicate classes of arguments meeting the relevant standard of evidence.) In this paper, the terms are loosely used as if they named types of argument which, roughly, aim to meet the relevant standard of evidence. We take the general sense of this usage to be familiar.

<sup>7</sup> The names ‘underminers’ and ‘overriders’ are suggested by Pinto's text, though he does not use them himself. These faults appear similar to Pollock's (1970) undercutting defeaters and rebutting defeaters (Hitchcock, 2005).



be viewed as normative categories of argument (2001a, pp. 103-104; cf. 2001b, pp. 109-111). Instead, Pinto (2001b, p. 111) argues that

the normative force and authority of any particular type of evidence or argument doesn't derive from the fact that it exemplifies a recognized 'normative' argument scheme. Its normative force is grounded in pragmatic considerations of the sort ... that would justify the use of *this* sort of evidence in *this* sort of context to settle *this* sort of question. The *schemes* can't be what provide the validation of presumptive reasoning, because the use of a particular scheme on a particular occasion itself always *stands in need of validation or justification*.

For Pinto, the theoretical value of argumentation schemes does not arise from the mistaken view that they are normative in nature, but comes instead from their association with a set of critical questions which can guide a respondent in evaluating a schematic argument. On Pinto's (2001a, p. 104) view, "it isn't the schemes that do the evaluative work, it's *we* who do the evaluative work."

#### 4.2 A Response to Pinto's Argument

While we agree with Pinto's analysis that arguments having the first kind of defect fail to create presumptions in favor of their conclusions and fail to shift the burden of proof to their objectors, we disagree that argumentation schemes thereby fail to be normative categories of argument. In the first place, a consequence of Pinto's argument is that deductively valid argument forms should not be seen as normative either.<sup>8</sup> Since arguments that are instances of deductively valid forms can also have problems of type (a) (they can have false premises or rely on a warrant that is circular), not all instances of valid argument forms will successfully establish, or provide good reasons for, the truth of their conclusions. Since the normativity of argument schemes and valid argument forms stand or fall together on Pinto's argument, argumentation schemes can remain "formal pragmatic structure[s] that ... [are] the counterpart[s] to logical forms of inference in semantics" (Walton 1996, p. x; cited in Pinto 2001a, p. 100) despite Pinto's criticisms.

A further rejoinder to Pinto's critique focuses specifically on type (a) problems with the warrants in schematic arguments. Pinto (2001a, p. 102) observes that warrants (or unexpressed generalizations) in schematic arguments can be susceptible to challenge for at least three reasons (i) the warrant might be unreliable, (ii) the warrant might be reliable but insufficient, failing to provide sufficient support to create a presumption, and (iii) the warrant might be reliable and sufficient in some contexts, but inappropriate for the context at hand. Of these, the first two seem to uniquely affect non-deductive arguments (whose warrants can provide varying degrees of inferential support), while the last seems common to both deductive and non-deductive arguments.<sup>9</sup>

Thus the unique problems for argument schemes as normative structures stems specifically from their non-monotonic and non-formal nature. In the first place, the warrants of formally deductive arguments are exceptionless and are thereby universally sufficient and reliable. Yet, the unexpressed generalization in a schematic argument

---

<sup>8</sup> This is a consequence Pinto seems willing to concede (2001a, p. 104; 2001b, p. 110 fn.20).

<sup>9</sup> Importantly, Pinto (2001a, p. 104) holds that problems of types (i) and (ii) can be raised against deductive and inductive arguments as well as presumptive ones. If this is so, it seems to us that they occur in different ways in non-deductive arguments than they could in deductive ones.

always subject to exception, and thereby is only generally reliable in normal circumstances. Further, the warrants of formally-valid deductive arguments are content-independent, while the warrants operative in schematic arguments are not formal, but are content-specific. Their strength will depend not only on their having some schematic interpretation, but moreover on the contingent and factual connection between the things being related in the warrant. This has two important consequences for schematic arguments:

(1) The warrants involved in schematic arguments can vary in terms of their probative support or inferential strength. Some connections just aren't as strong as others, and because of this some reasons aren't as strong as others.

(2) The warrants involved in schematic arguments stand in need of backing of a categorically different sort than those involved in formal deductive arguments. The backing for such warrants can be more a matter of science than of logic, and might even require substantial empirical evidence.

Pinto's criticism of the normativity of argument schemes draws our attention to the important point that the fitness of non-deductive, presumptive warrants cannot be taken for granted as often are the warrants in deductively valid arguments. Nor can any *a priori* list of presumptive warrants be provided. Instead, they must be tested for their reliability and sufficiency just as premises must be tested for adequacy.

That said, the general form of a presumptive reasoning scheme can be expressed as  $P_1, \dots, P_n \vdash \textit{Presumably}, C$ . To suppose that the warrant in some argument is either (i) generally unreliable or (ii) reliable but generally insufficient to establish a presumption is to suppose that the argument does not meet the general form of any presumptive reasoning scheme.<sup>10</sup> On the other hand, to suppose that some particular schematic argument fails because some specific exceptional or countervailing circumstance comes to light is to suppose that the presumption is defeated, not that it doesn't arise.

We feel that it is important to retain a conception of both schematic arguments and instances of valid argument forms as normative categories of argument. The second category marks a class of arguments having no counter-example, and whose warrants are truth-preserving. This is an important standard of evidence (Godden, 2005) which, though it may not be appropriate to all argumentative circumstances, is worthy of distinction as a standard which arguments can either meet or fail to meet. Similarly, the category of schematic arguments marks a class of arguments having no known counter-example (relative to some information state), and whose warrants are presumption-establishing in normal circumstances and in the absence of defeating evidence or countervailing considerations. This too is an important standard of evidence which, though it may not be appropriate to all argumentative circumstances, is worthy of distinction as a standard which arguments can either meet or fail to meet. Neither category is exhaustive of arguments meeting their associated standard, yet all arguments belonging to these categories meet the corresponding standard of evidence.

Pinto's critique seems to require that, in order for a scheme or form to be considered normative it must, on its own, be sufficient to determine the cogency of an

---

<sup>10</sup> To use Pinto's example of red spots being an indication of measles, and arguments relying on this sort of warrant as instances of argument from sign: if the warrant is found to be generally unreliable or generally insufficient, then red spots are not a sign of measles, and arguments relying on this warrant cannot be instances of scheme argument from sign.

argument – that is, an evaluator must be able to correctly judge an argument cogent merely by its having a certain formal or schematic structure. Yet Pinto holds – and we agree – that evaluative norms should be situationally appropriate. This seems to lead him to a position where no norms can ever be specified *a priori*, without considering facts about the argumentative situation. Since neither deductive forms nor presumptive schemes incorporate situational considerations, they cannot, on their own, determine the goodness of a situated argument.

We agree with Pinto (2001b, p. 111) that the application of a particular standard of evidence as an evaluative standard for some argument on a particular occasion itself stands in need of justification, that this justification will involve pragmatic considerations, and that as a result the evaluation of argument, and the normative (i.e., probative or persuasive) force of arguments deployed in particular circumstances, cannot be determined by the form or scheme of the argument alone. Indeed, in our view, the evaluation of situated argument is best approached dialectically. But these considerations are independent of the claim that standards of evidence constitute normative standards. As such, arguments meeting particular standards of evidence have normative properties, even if those normative properties are insufficient or inappropriate to the situation at hand.

Perhaps the best way to think about argument schemes is to think of them as the counterparts to informal fallacies. While not every instance of a fallacious type of argument is itself fallacious (there can be legitimate and acceptable employments of *argumentum ad hominem* for instance), not every instance of an argument scheme a good presumptive argument. Nevertheless, argument schemes represent a species of argument that are standardly capable of presumptively establishing their conclusions, if only in a defeasible way.

## 5. EVALUATION OF SCHEMATIC ARGUMENTS

Schemes are also normative in the sense that instances of a given scheme can be evaluated using similar measures, namely the critical questions. By instantiating a stereotypical pattern of reasoning, schematic arguments are subject to stereotypical errors of reasoning that can be associated with them. Because of this, they can be evaluated with questions general to arguments of their schematic-type.

The argumentative role of critical questions is explained in relation to argumentation schemes. To each scheme a certain number of critical questions are attached. These questions have a role in the evaluation of arguments with the relevant scheme, but their precise function and foundation have not been agreed upon. Originally, the critical questions evolved as did the schemes themselves, and they seemed to have a heuristic - even pedagogical - role, acting as a guide for arguers in their evaluation of arguments of certain recognizable types. Given that the schemes represented stereotypical patterns of reasoning used in commonplace, defeasible arguments, it intuitively seemed that the critical questions accompanying a scheme should capture the stereotypical kinds of errors or defeaters that might pertain to reasoning of that type. Yet, Blair (2001, p. 370) has recently challenged this heuristic course of development of critical questions by asking for a more rigorous and definitive specification of the correct number and kind of critical questions to be associated with each argumentation scheme.

### 5.1 Theoretical Foundations of Critical Questions

It is our position that the critical questions associated with a scheme should be a function of two factors: their function and their foundation. The general function of critical questions is to assist in the evaluation of reasoning of a specifiable type. If critical questions are to have this role, they must be founded in the general principles of the evaluation of inferences and arguments.

Johnson and Blair's (1977) well-known theory of argument evaluation for informal logic and argumentation theory claims that an argument is cogent if and only if (i) its premises are rationally acceptable, (ii) its premises are relevant to its conclusion and (iii) its premises provide sufficient reason to accept the conclusion.<sup>11</sup> These three R.S.A. criteria are sometimes augmented with a fourth criterion: (iv) that there are no known better reasons for an opposite conclusion, which we here treat as an aspect of sufficiency.<sup>12</sup> These criteria combine to test the adequacy of premises and the link between premises and conclusion. Searches for underminers (undercutting defeaters) and overrides (rebutting defeaters) can be seen as applications of the sufficiency criterion of cogency, the latter of which explicitly tests condition (iv).

Our thesis is that the normative theory informing the critical questions approach to the evaluation of schematic arguments is not opposed to - but rather derives from - the R.S.A. standard of argument cogency. Critical questions are not supplied as an alternative to the R.S.A. standard; rather they are best seen as an application of it to arguments of particular types - arguments that involve distinctive patterns of reasoning - deployed in unique dialectical circumstances. Thus, the legitimacy of a critical question derives from the fact that it tests some aspect of its target argument against one of the R.S.A. criteria. Questions are scheme-specific because they address some general way in which arguments of some particular schematic type can fail to meet the R.S.A. standard. Such

---

<sup>11</sup> Johnson and Blair (1977; 1994) call this the R.S.A. test, while Govier (2005, pp. 63-76) calls it the A.R.G. (acceptability, relevance and good grounds) condition of argument cogency. Following Johnson and Blair we will call this the R.S.A. test for argument cogency.

It has been argued by Siegel (in conversation) and Govier (1999, 119) that the relevance condition is redundant because it is presupposed by sufficiency. Blair (2004, 146-147) has responded by proposing that relevance is a condition for being a premise - that is, for being part of the argument. Yet, when evaluating an argument the issue of relevance will still have to be considered, if only to determine whether a claim is to be counted as a premise (e.g., to be assessed for acceptability). Further an otherwise cogent argument with one irrelevant premise does not seem to be so seriously flawed as to cease to be an argument, let alone a relatively good one. Vorobej (2006, 47-53) addresses this issue by adding a *compactness* condition to the R.S.A. criteria. So while relevance may be theoretically redundant, it does not seem to be practically so. To our thinking it remains an important tool for argument evaluation which requires independent consideration when assessing argument cogency.

Govier (1999, 119) has also argued that the R.S.A. standard may be "so open-ended that it provides no guidance at all for judging cases." One might respond to an objection that R.S.A. is too vague to count as a normative standard by conceding that the specific standards of acceptability or sufficiency must be determined, in part, by situational facts. Alone, the R.S.A. criteria cannot help an assessor to determine which standards are appropriate to the situation. Nevertheless, they are informative in specifying the general nature of each evaluative criterion, and they provide guidance in generally specifying how any argument can be assessed for cogency.

<sup>12</sup> While (iv) can be seen as an element of (iii), it is often both pedagogically and theoretically valuable to distinguish the two.

an account agrees with Blair's (2000, p. 25) thesis that "the critical questions associated with a reasoning scheme are generated by knowledge of the types of circumstances in which there are exceptions to what is normally good reasoning."

Consider, for instance, the argument from expert opinion (Walton 2002, pp. 49-50; 1997b, 211-225).

### ***Argument from expert opinion***

*Major Premise:* Source E is an expert in subject domain S containing proposition A.

*Minor Premise:* E asserts that proposition A is true (false)

*Conclusion:* A is true (false)

### **Critical questions:**

1. *Expertise Question:* How credible is E as an expert source?
2. *Field Question:* Is E an expert in the field that A is in?
3. *Opinion Question:* What did E assert that implies A?
4. *Trustworthiness Question:* Is E personally reliable as a source?
5. *Consistency Question:* Is A consistent with what other experts assert?
6. *Backup Evidence Question:* Is E's assertion based on evidence?

Each of these critical questions tests some component of the R.S.A. criteria. The *expertise question* tests the sufficiency condition of the inferential strength between premise and conclusion by asking whether an undermining condition applies. In this case, issues of bias or lack of credibility would give reason to doubt the accuracy of E's testimony despite her being an expert in the relevant subject field S. The *field question*, raises issue with the acceptability of the major premise in the inference. An obvious way that this type of premise could fail is that the supposed expert is either unqualified, or is only qualified in some unrelated field of knowledge. In some versions of the scheme from expert opinion, where the domain of expertise is not explicitly stated in the major premise, the *field question* would challenge the relevance of the premise, and raises a point that could potentially undermine the inference. The *opinion question* challenges that acceptability of the minor premise. Similarly to the credibility question, the *trustworthiness question* also tests the sufficiency condition by raising an issue that could potentially undermine the inference. If the expert's reliability can be called into question, this would give some reason to doubt the accuracy of her testimony despite her expertise in the field. The *consistency question* tests the overall sufficiency of the inference by raising an issue that could both override and undermine it. If the testimony of the selected expert does not concur with the prevailing opinion of other experts in the field then (i) the reliability of the expert's testimony could be called into doubt thereby undermining the inference, and (ii) the contrary opinions of other experts could provide good grounds for an opposite conclusion thereby overriding the inference. Finally, the *backup evidence question* challenges the sufficiency of the inference. Roughly, it is checking to see whether there is a rational basis for the expert's opinion in this case – whether the expert has specifically looked into the matter at issue, or whether she is simply 'giving an

opinion'. The absence of an adequate rational basis for the expert's opinion would potentially undermine the inference.

We have seen, then, that the critical questions applying to the argument scheme from expert opinion all serve to raise issue with some aspect of the cogency of such arguments under the R.S.A. standard. Accepting that the foundation of the critical questions is to be found in the fact that they each test some element of the R.S.A. cogency criteria, it might be argued that there is no need for any additional evaluative tools such as critical questions, and that they should be dispensed with entirely. After all, any argument that passes the R.S.A. test will be a good argument. (NB: This would equally well justify dispensing with the schemes entirely as well.) In spite of this, we still feel that critical questions have an important role in the dialectical evaluation of schematic arguments. As we said above, we hold that the critical questions associated with a scheme should be determined by two factors: their foundation and function. Having established their theoretical well-foundedness, the question of whether critical questions should be employed as tools of argument evaluation becomes a utilitarian one. We feel that the unique function of critical questions justifies their continued usage as distinct set of evaluative tools.

Since argumentation schemes are stereotypical pattern of defeasible reasoning, schematic arguments are subject to stereotypical errors of reasoning that can be associated with them. That is, there may be typical, or common ways in which the A.R.G. cogency conditions could apply to arguments of a given schematic type that would not typically apply to other common types of argument. Blair (1999, p. 56) described the function of critical questions as evaluative tools in this way:

the role of ... [critical questions] is to remind its user of the types of circumstances that typically derail reasoning of the pattern represented by the scheme. The critical questions function as a check-list to help determine whether any of the standard types of excepting conditions that should cancel the default represented by the scheme are presented in that particular instance of its employment.

We note in passing that taking this approach towards the provenance of critical questions helps to supply an answer to Blair's question concerning the correct number and kind of critical questions that apply to some given scheme. But more to the point, we hold that this account of the function of critical questions (which we take to roughly coincide with that of Pinto, discussed below) gives them a unique and important role in the dialectical evaluation of plausible argument.

## 6. THE EVALUATIVE ROLE OF CRITICAL QUESTIONS

While critical questions clearly function in the evaluation of schematic arguments, their exact role is unclear, especially in the context of an argumentative dialogue. Sometimes critical questions are described as if they were necessary conditions for the acceptability of any schematic argument. Blair, for instance, writes that critical questions "are questions that must be answered appropriately if any substitution instance of a reasoning scheme is to be cogent" (Blair, 2000). At other times, critical questions are said to function "like a traditional topic as a memory device" "offer[ing] the user ... a choice among strategies for probing into the weak points in an argument" (Walton and Reed,

2003, p. 202).<sup>13</sup> Which description more accurately portrays their actual role in the evaluation of argument?

Walton (1996) conceived of the questions as pedagogical tools, with a heuristic role in the dialectical evaluation of argument (Walton, 2003, p. 31). So conceived, critical questions play the second role more than the first. On the other hand, the effect of raising a critical question is to temporarily defeat the target argument, at least until the question has been satisfactorily answered. So, at the very least, it is a necessary condition for the acceptability of a schematic argument that all questions posed be satisfactorily answered.

Yet this is only a partial answer to the question of the actual role of critical questions in the evaluation of schematic arguments. Is the answering of all critical questions posed a sufficient condition for acceptability? Is it necessary that critical questions be posed at all?

### 6.1 *Is there a burden of questioning?*

Let us consider the second question first. Is it incumbent on arguers presented with schematic arguments to pose the relevant critical questions?<sup>14</sup> If critical questions give acceptability criteria for schematic arguments, then it would seem that there is a burden upon respondents to pose critical questions of schematic arguments before accepting their conclusions. Similarly, if one is not willing to accept or concede a standpoint at issue, it would seem that there is some obligation to raise objections to any supporting argument. On the other hand, if questions are simply heuristic devices designed to help critics find objections, then it is perhaps not necessary that they be asked as part of the evaluation of schematic arguments. So, part of the answer concerning whether there is a burden of questioning is given by the nature of critical questions themselves.

Several points bear on the answer to this question. First, once critical questions have been posed, it is incumbent on the proponent to satisfactorily respond to those critical questions in order to preserve the acceptability of her argument. So, it is a necessary condition of argument acceptability that, in principle, the critical questions could be answered, if posed. In practice, though, this requirement will be counterbalanced by several more practical considerations.

First, the rules governing commitment and retraction will have a bearing on the decision to raise questions. Some frameworks of dialogue (law, for example) operate with a notion of inference whereby an inference permits, rather than requires, the drawing of a conclusion from certain premises.<sup>15</sup> In dialogues with a permissive notion of inference,

---

<sup>13</sup> At times, Blair describes the role of critical questions with language similar to that used by Walton and Reed, as for instance when he says that “[t]he critical questions function as a check-list to help determine whether any of the standard types of excepting conditions that should cancel the default is present in the given case” (Blair, 2000).

<sup>14</sup> This question has already been addressed by Walton (2003) in the context of legal argumentation.

<sup>15</sup> In the context of a critical discussion (van Eemeren and Grootendorst, 1992) or a persuasion dialogue (Walton and Krabbe, 1995) it is clear that a dialogue participant is rationally and dialectically obliged to concede (i.e. accept) any conclusions reached in accordance with the rules governing the dialogue. As such, should a dialogue participant be unwilling to make this concession, he is under considerable obligation to raise objections to the argumentation by which that conclusion was reached. In a permissive persuasion dialogue (Walton and Krabbe, 1995), where retraction is possible the participant might be able meet this rational obligation by retracting some previous commitment(s).

dialogue participants are not obliged to accept a claim that has been argued for by an opponent, even though that argument provides some support for the claim and the argument itself has passed without challenge. Under these sorts of conditions it may not be necessary to question, or otherwise object to, an argument even though one is unwilling to accept its conclusion. Similarly, considerations such as whether, and under what conditions, a respondent is able to retract his commitment to a claim once it has been admitted into a dialogue will certainly have a bearing on whether, and to what extent, a respondent ought to raise questions about any given argument.

In addition to these factors, there will be practical considerations such as whether it is better just to press ahead with the dialogue and return to the critical questions only if it is deemed necessary or important at a later stage. Further, there will be strategic considerations that will help to determine whether critical questions ought to be raised. Such considerations might include: the significance of the particular claim at issue in the overall context of the dialogue and the mass of evidence involved, or whether there is a better way of objecting to the schematic argument, for instance by providing a stronger argument for an opposing claim.

In any real situation, then, the issues guiding critical questioning will be informed by a number of considerations, practical as well as strategic. So, there is a sense in which critical questions do provide necessary criteria for the acceptability of schematic arguments. But, it is not a necessary condition of every schematic argument that it in fact answer each associated critical question in order that its conclusion be accepted.

## *6.2 Do critical questions provide sufficient criteria for acceptability?*

Let us now turn to the question of whether the critical questions give sufficient conditions for the acceptability of schematic arguments. Several factors have a bearing on the answer to this question. One of the problems involved in the evaluation of defeasible argumentation schemes is the problem of completeness (Walton, 2001, pp. 159-160; Walton and Reed, 2003, p. 203). Is the evaluation of an argumentation scheme ever sufficiently complete so that its conclusion should be accepted? And if so, when?

A first point to consider is that the schemes under consideration are non-monotonic. That is, the probative weight provided to a conclusion by the reasons is always subject to defeat in light of new information. In view of this, the answer to the completeness problem seems to be that the evaluation of any defeasible argumentation scheme can never be closed in any final sense, but can only be closed in some local context, in relation to some specified body of information. Within the global context in which it may be subject to new information which might bring about its failure, a defeasible argument provides some, though not conclusive, evidence in support of its conclusion. In the absence of any reasons to the contrary, these reasons provide sufficient grounds for the provisional acceptance of the conclusion. As a result, the argumentative effect of this type of argument is to shift the burden of proof to any objector. It is for this

---

By contrast, in law, while disputants cannot ignore facts entered into evidence, they can ignore arguments made by opposing counsel from those facts to other conclusions. The reason for this is that the jury, or fact-finding body in the case, is permitted to draw conclusions from the facts entered as evidence on the basis of their own best rational lights (rather than required to draw the conclusions proposed by the disputants).



reason that Walton described argumentation schemes as presumptive in nature (1996; forthcoming). Their effect is to create a presumption in favour of their conclusions.

A second aspect of the problem is whether the critical questions alone provide sufficient criteria within this more limited context, i.e. for the provisional acceptance of a conclusion, relative to a fixed body of information. The answer here seems to be that, while the questions contribute to the assessment of schematic arguments, they are not exhaustive of it. Critical questions apply the R.S.A. cogency criteria in which they are theoretically grounded, but they do not constitute a comprehensive application of them. Instead, their function is to capture a set of typical ways in which arguments of a particular schematic-type might fail to meet the R.S.A. criteria. As such, even if all critical questions are satisfactorily answered there may be other factors affecting the cogency of a particular schematic argument, or the acceptability of its conclusion. Ultimately, as Walton has argued (forthcoming) “[t]he solution to the completeness problem is that ... [schematic arguments] should never be regarded as complete and closed to further questioning, until the dialogue itself has been closed. Only at that point is all the relevant evidence on both sides of the issue weighed up.”

### 6.3 *The completeness problem*

Another dimension to the completeness problem can be framed in terms of the asking of critical questions themselves (Walton, 2001, pp. 159-160; Walton and Reed, 2003, p. 203). That is, in the context of a dialogue, when, if ever, is a respondent obliged to stop asking critical questions of an argument and concede the standpoint at issue? Should there be a procedural rule that puts an end to the process of critical questioning, and if so, what should determine that point?<sup>16</sup>

Part of the answer to this question depends on whether the critical question has been satisfactorily answered. If ever a question cannot be satisfactorily answered, then the questioning can be halted, because the target argument will have been diffused. But, to get a more theoretically robust answer to the completeness problem, it is worthwhile to consider some of the other argumentative features of critical questions. Suppose that a question has been given a preliminary answer. Can the questioning proceed with sub-questions, or with different questions? Here again the answer seems to be dialectical (Walton, forthcoming), and will ultimately be explained in terms of the burden of proof (Walton, 1988).

In these terms, the question of completeness is linked to the issue of whether there is a burden attached to posing critical questions. If we are right on this point, then the ultimate answer to the completeness problem is that, for any specific question and the argumentation which follows directly thereto (i.e., is devoted to settling the matter of whether the question has been satisfactorily answered), the questioning process (like the larger process of raising objections) halts whenever a local burden of proof cannot be met.

## 7. CRITICAL QUESTIONS AND BURDEN OF PROOF

---

<sup>16</sup> This problem has also been addressed by Walton (forthcoming).

In the end, the answer to the completeness problem must fall back on the notion of burden of proof. There is a burden upon the proponent to satisfactorily answer all critical questions relevant to the schematic argument posed by a respondent. There may or may not be an obligation on the part of a respondent to raise, or to pose such questions. But, in many cases, having received some response from the proponent to the question, it will be incumbent on the respondent to show that the answer is not adequate. That is, posing the question defeats the argument until it is satisfactorily answered. But, as Pinto (2003) has observed, in many cases, a satisfactory answer to the critical question will not require the introduction of new information, reasons or argument into the dialogue. In many cases, the answer can be perfunctory, or the question might simply prompt a reflection on the part of the proponent regarding the considerations made in reaching her standpoint. Yet, answering the question is sufficient to restore the initial presumptive status of the standpoint supported by the schematic argument, and shift the burden of proof back to the opponent. The only condition under which this move fails is if the answer is not satisfactory. But, we claim that it is the job of the questioner to show this. The point is that, eventually, it will fall to the questioner, not the proponent, to introduce new evidence into the dialogue. This accords with the argumentative effects of presumptive arguments, which shift the burden of proof to the respondent.

It is not the job of the answerer (i.e. the proponent) to show that her answers are satisfactory. Rather, the burden is on the questioner to show that an answer is unsatisfactory. This raises the important question of whether there is a burden of proof attached to questioning.

### *7.1 Is there a burden in questioning?*

When the issue of critical questions was first discussed in the literature, the prevailing view was that no burden of proof attached to asking critical questions. It is commonly accepted that parties making assertions incur a burden of proof to successfully defend their assertions with acceptable reasons, and that they bear an obligation to retract those assertions that they cannot successfully defend. Yet, such a burden is not commonly associated with asking questions. In the first place, it was tacitly held that there was no burden on the part of a respondent to pose any critical questions. And secondly, it was thought that 'to ask an appropriate critical question in a dialogue shifts the burden of proof back onto the side of the proponent of the original argument to reply to this question successfully' (Walton, 1996, p. 15). Recent developments have challenged both of these views.

As mentioned above, Walton (2003) has recently argued that there may be a burden to question – that is to raise critical questions – in certain types of dialogues, or in certain argumentative circumstances. In the second place, Pinto (2003) challenged the standard view concerning the role of critical questions and their effect on the burden of proof in schematic arguments, claiming that in many cases the posing of critical questions by a respondent may not actually shift a burden of proof back to a proponent. Subsequently, when trying to specify how critical questions can be represented in models diagramming the structure of argument schemes, it was proposed that certain critical questions might best be seen as having a burden of proof attached to them (Walton and Reed, 2003; Prakken, Reed and Walton, 2004). In what follows, we set forth this new

approach to the role of critical questions in argumentation schemes, and show how it addresses Pinto's challenges.

Prakken, Reed and Walton (2004), and Walton and Reed (2003) have argued that, since different critical questions relate to their associated schematic arguments in different ways, sometimes there is a burden of proof attached to raising a critical question while in other cases there is not. For example, if a critical question is addressed to some assumption at work in the argument as an implicit premise, then there is no burden of proof attached to raising questions about the acceptability of those assumptions. These critical questions seem to function normally, automatically shifting the burden of proof back to the original proponent of the argument, without themselves bringing any burden of proof back to the questioner. On the other hand, some critical questions appear to instead raise *allegations* against an argument. That is, in order that the questions have the critical force they do, they themselves rest on some implicit claim which serves as an objection to the argument. As a result, it would seem that some critical questions do not automatically shift the burden of proof back to the proponent. Rather, some critical questions seem to have a positive burden of proof attached. In summary, some critical questions represent 'additional assumptions of the argument ... while others function as starting points for finding rebuttals' (Walton and Reed, 2003, p. 208). While the former have no burden of proof attached, the latter do.

### *7.2 Analysis of a sample scheme: Practical Reasoning*

Walton, Reed and Prakken based their conclusions on the analysis of the scheme from expert opinion. To show how this new account might accommodate Pinto's (2003) criticisms of the standard one, we consider how this analysis applies to the scheme of practical reasoning as given below (Walton, 1990b, p. 48; Walton 1997a, p. 165).

#### ***Practical Reasoning: Necessary Condition Schema***

(N1) *Goal Premise*: My goal is to bring about *A*.

(N2) *Alternatives Premise*: I reasonably consider on the given information that bringing about at least one of [ $B_0, B_1, \dots, B_n$ ] is necessary to bring about *A*.

(N3) *Selection Premise*: I have selected one member  $B_i$  as an acceptable, or as the most acceptable necessary condition for *A*.

(N4) *Practicality Premise*: Nothing unchangeable prevents me from bringing about  $B_i$  as far as I know.

(N5) *Side Effects Premise*: Bringing about *A* is more acceptable to me than not bringing about  $B_i$ .

*Conclusion*: Therefore, it is required that I bring about  $B_i$ .

#### **Critical questions**

1. *Alternative Means Question*: Are there alternative means of realizing *A*, other than *B*?
2. *Acceptable/Best Option Possible Question*: Is *B* an acceptable (or the best) alternative?
3. *Possibility Question*: Is it possible for agent *a* to do *B*?

4. *Negative Side Effects Question*: Are there negative side effects of *a*'s bringing about *B* that ought to be considered?
5. *Conflicting Goals Question*: Does *a* have the goals other than *A*, which have the potential to conflict with *a*'s realizing *A*?

In the case of argument from expert opinion, whether there is a burden attached to questioning can be determined according to whether the question acts to challenge an implicit assumption, or whether it serves as a starting point for objections. Let us see whether this test applies to the scheme of practical reasoning introduced above.

Here, it would seem that the test criteria cannot be applied in a clear-cut way. In the first place, each critical question is clearly associated with some premise explicitly stated in the argument. So, it would seem that none of the questions have a burden attached to them.

This is correct to a point, since these questions can be posed in a relatively innocuous manner, where they do not have a refuting or objecting function, but simply serve to probe a bit further into the argument. As such, while the proponent has a burden to answer each question asked, this burden can be met in a relatively perfunctory way. For instance, as Pinto (2003) suggests, with the alternative means question the proponent might respond simply by saying something like "No. I can't think of any alternative means of realizing *A* other than those given in the list of *B*" or "Well, those are all of the options I can think of. Can you think of any others?" On the standard account, by responding to the question, the proponent has met her burden, and the presumptive status of her original argument is restored.

We can see that, if the question is to serve as an objection in any further sense something else must happen. Namely, it must be shown that the proponent's answer is unsatisfactory. Yet, as we have stated above, it is the responsibility of the respondent to show this. In this case this would be done by finding examples of alternatives not considered in the initial argument. Indeed, in the latter answer above, the proponent explicitly shifts the burden of proof associated with the question back upon the questioner by inviting him to come up with alternatives not initially considered. Such alternatives would have the force of objections and would go towards showing the unacceptability of the move from the alternatives premise to the selection premise in the initial argument.

This reveals the second sense in which a question can be posed, namely as an objection to the argument. Here, the question is asked in a rhetorical voice, whereby a negative answer is implicit in the question. For example, in the alternative means question, it is assumed that there actually is some alternative means that has not been considered by the proponent in her initial argument. Yet, this implicit assertion on the part of the respondent comes with a burden of proof attached. As such, if the question is to serve as an objection in this stronger sense, there is some burden in questioning.

In examining the practical reasoning scheme, it seems that each of the critical questions can be posed either in a weak sense (as a means of probing further into the argument) or in a strong sense (as a challenge, or objection to the argument). Further, whether the question has a burden attached depends on how it is asked. If it is asked in the weak sense, then it functions normally in shifting the burden back on the proponent. As Pinto rightly points out, posing a critical question in this way does not put a proponent under an obligation to do anything which furthers the argumentation in any substantive

way, e.g., by making a new assertion. As such, it may be inappropriate to say that a burden of *proof* is shifted back to the proponent. Nevertheless, an argumentative or dialectical burden is shifted and failure to meet this burden can require the retraction of the argumentation under question. Posing the question in this way obliges a response, and it obliges the proponent to reflect on her position and her confidence in the claims she makes therein. Importantly this alone may be enough to diffuse the initial argument if, for instance, the proponent realizes on reflection that there are several options which she had not initially considered, or that her confidence in one of her assertions was misplaced or has faltered.

On the other hand, if the question is to go further and act as an objection then it has a positive burden of proof attached to it. This can be explained in several ways. First, it is the dialectical responsibility of the questioner to show that the proponent's answers to the questions are unsatisfactory. Second, in serving as an objection there will generally be some implicit assertion at work in the question giving it its force as an objection. Yet, assertions (even implicit ones) come with positive burdens of proof attached.

So, the issue of whether there is a burden of proof attached to questioning can be explained in terms of how the question functions in the argument. Questions which expose and challenge implicit assumptions in an argument, or simply seek to probe a bit further into an argument do not come with any burden of proof attached. But, questions which act as "starting points for finding rebuttals", or as rhetorical questions served to introduce an objection come with a positive burden of proof attached. Thus, we agree with Pinto's (2003) "other account" of critical questions whereby

the function of critical questions is to guide a critic or respondent who is looking for evidence that would cancel the force of the argument. The "burden" of finding overriding or undermining evidence does not lie with the proponent; it lies with the respondent. And the critical questions are signposts pointing the respondent in directions where such evidence might lie.

It is crucial to recognize this as an important and common function of critical questions which effectively changes the standard account of how they affect burden of proof in argumentative dialogues. It remains the burden of a proponent to satisfactorily answer all critical questions posed. But, when questions can be answered in a perfunctory way, without making any new assertions, the burden of showing that such answers are unsatisfactory will fall to the questioner (i.e., respondent), and it will be his job to introduce new and defeating evidence into the dialogue. This effectively places a burden of proof on the questioner.

On the other hand, we hold that Pinto's "other account" describes only one of the functions that critical questions can have in an argumentative dialogue. As such, we disagree with Pinto's (2001b, p. 112) conclusion that "their function is [solely] *heuristic*, and that the mere *posing* of such questions has no *normative* force." Sometimes, critical questions can function normally: they have no burden of proof attached, and posing them temporarily defeats an argument (until they are satisfactorily answered). Further, we disagree with Pinto's (2003) conclusion that "critical questions occur, not in the dialogue itself, but in the reasoning of a respondent who is searching for a way to counter an argument made by a proponent." Even critical questions which serve as signposts for new and potentially defeating counter-evidence can be meaningfully posed in a dialogue, and they serve to map out a set of standard dialogic moves available to an arguer.

## 8. CONCLUSION

While we have by no means provided a comprehensive account of argumentation schemes and critical questions, we have sought in this paper to propose a number of solutions to some of the outstanding theoretical issues surrounding them. We endorse Blair's (2000) account of schemes as reason-types, whose purpose is to represent structural patterns of defeasible reasoning commonly employed in argument, and whose classification will depend to a significant extent on the evidentiary structure the reasoning – the reason-types and the “relation of conveyance” (Katzav and Reed, 2004a) at work in the inference. We further endorse an account of argumentation schemes as normative categories of argument, and sought to show how such a view can be maintained in the face of important criticisms. We have demonstrated the reconstructive role of argumentation schemes, and the evaluative role of critical questions. On the latter issue, we maintain that the questions associated with a scheme can be determined by their foundation and their function. We have proposed an explanation of the theoretical foundation of critical questions as evaluative tools: namely that they apply some element of the R.S.A. standard of cogency. We maintain a standard account of the dialectical function of critical questions and attempted to show how this account is partly consistent with, and partly resists the criticisms of, Pinto's “other account.” In attempting to work through some Blair's (2001) theoretical agenda, we hope to have advanced the theory of schemes and critical questions by beginning to reconcile a straightforwardly dialectical account of them with an account founded more squarely in the informal logic approach. Ultimately, these approaches are not at odds with one another, but share a common tradition, a common set of theoretical, analytical and evaluative projects, and common views about the nature and foundation of good argument.

Many important projects remain in the theory of argumentation schemes, and we close by remarking on three of them. First, we recognize the desirability of greater cohesion in the classification of argumentation schemes, and a comparison and reconciliation of the existing typologies. The different typologies set forth by Walton, Pragma-Dialectics, and Katzav and Reed (2004a) are prime candidates for such a project. The first steps towards this goal have been taken by Walton, Reed and Macagno (2007), who realized that some schemes fit under others as subspecies of them. For example, argument from consequences is a very general scheme. Other schemes, like those for the slippery slope argument or practical reasoning, sometimes fit under the more general category of argument from consequences. Their (2007) treats over sixty schemes, offering a classification system which fits all of them into the system.

Second, the desire to implement argumentation schemes in computerized models of artificial reasoning requires a standardization and formalization of the schemes and their accompanying critical questions. Part of this project involves standardizing the variables and constants used in stating the schemes general, abstract structures. Also required here is a standardized account of the operation of critical questions so that their effects can be modeled in artificial systems. Our present work contributes to this second project which Verheij (2003) has also considerably advanced.

Finally, another project is to study how schemes developed for use in everyday conversational argumentation can be adapted to model their application in specific

contexts such as law or medicine. For example argument from expert opinion is very important in law, but special legal rules for admitting and evaluating expert testimony have been developed in the courts. Schemes evidently need to be modified for application to legal reasoning, and some research on this project is now underway.

## REFERENCES

- Blair, J. Anthony. (1999). Presumptive reasoning / argument: An overlooked class. *Protosociology* 13, 46-60.
- Blair, J. Anthony. (2000). A theory of normative reasoning schemes. In Hans V. Hansen, Christopher W. Tindale, and Elmar Sveda (Eds.), *Proceedings of the Third OSSA Conference: Argumentation at the Century's Turn*. St. Catherines, ON: OSSA.
- Blair, J. Anthony. (2001). Walton's argumentation schemes for presumptive reasoning: A critique and development. *Argumentation*, 15, 365-379.
- Blair, J. Anthony. (2004). Argument and its uses. *Informal Logic*, 24, 137-151.
- Braet, Antoine C. (2004). The oldest typology of argumentation schemes. *Argumentation*, 18, 127-148.
- Eemeren, Frans H. van and Tjark Kruiger. (1987). Identifying argumentation schemes. In Frans H. van Eemeren, Rob Grootendorst, J. Anthony Blair and Charles A. Willard (Eds.), *Argumentation: Perspectives and Approaches*, pp. 70-81. Dordrecht: Foris.
- Eemeren, Frans H. van and Rob Grootendorst. (1992). *Argumentation, Communication and Fallacies*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Garssen, Bart. (1994). Recognizing argumentation schemes. In Frans H. van Eemeren and Rob Grootendorst (Eds.), *Studies in Pragma-Dialectics*, pp. 105-111. Amsterdam: Sic Sat.
- Garssen, Bart. (2001). Argumentation schemes. In Frans H. van Eemeren (Ed.), *Crucial Concepts in Argumentation Theory*, pp. 81-99. Amsterdam: Amsterdam University Press.
- Godden, David. (2005). Deductivism as an interpretative strategy: A reply to Groarke's defense of reconstructive deductivism. *Argumentation and Advocacy*, 41, 168-183.
- Govier, Trudy. (1999). What is a good argument? In John Hoaglund (Ed.), *The Philosophy of Argument*, pp. 107-122. Newport News, VA: Vale Press.
- Govier, Trudy. (2005). *A Practical Study of Argument*, sixth edition. Toronto: Thomson/Wadsworth.
- Hastings, A. (1963). *A Reformulation of the Modes of Reasoning in Argumentation*, PhD dissertation, Evanston, IL: Northwestern University.
- Hitchcock, David. (2001). Sampling scholarly arguments: A test of a theory of good inference. In Hans V. Hansen, Christopher W. Tindale, J. Anthony Blair, Ralph H. Johnson, Robert C. Pinto (Eds.), *Proceedings of the Fourth OSSA Conference: Argumentation and its Applications*. Windsor, ON: OSSA.
- Hitchcock, David. (2005). Good reasoning on the Toulmin model. *Argumentation*, 19, 373-391.
- Johnson, Ralph H. and J. Anthony Blair. (1977). *Logical Self Defense*, 1<sup>st</sup> edition. Toronto: McGraw-Hill.
- Johnson, Ralph H. and J. Anthony Blair. (1994). *Logical Self Defense*, 3<sup>rd</sup> edition. Toronto: McGraw-Hill.
- Katzav, J. and C.A. Reed. (2004a). On argumentation schemes and the natural classification of arguments. *Argumentation*, 18, 239-259.
- Katzav, J. and C.A. Reed. (2004b). A classification system for argument. In Department of Applied Computing, University of Dundee Technical Report.  
<http://babbage.computing.dundee.ac.uk/chris/publications/2004/ClassifyingArguments.pdf>, retrieved October, 2005.
- Kienpointner, Manfred. (1987). Towards a typology of argumentative schemes. In Frans H. van Eemeren, Rob Grootendorst, J. Anthony Blair and Charles A. Willard (Eds.), *Argumentation: Across the Lines of Discipline*, pp. 275-287. Dordrecht: Foris.
- Kienpointner, Manfred. (1992). *Alltagslogik, Struktur und Funktion von Argumentationsmustern*, Stuttgart –Bad Cannstatt: Frommann-Holzboog.
- Perelman, C and L. Olbrechts-Tyteca. (1969). *The New Rhetoric: A Treatise on Argumentation*. Notre Dame/London: University of Notre Dame Press.
- Pinto, R.C. (2001a). Argument schemes and the evaluation of presumptive reasoning. In *Argument Inference and Dialectic*, pp. 98-104. Dordrecht: Kluwer.
- Pinto, R.C. (2001b). Presumption and argument schemes. In *Argument Inference and Dialectic*, pp. 105-112. Dordrecht: Kluwer.

- Pinto, R.C. (2003). Commentary on C. Reed and D. Walton 'Argumentation schemes in argument-as-process and argument-as-product. In J.A. Blair, D. Farr, H.V. Hansen, R.H. Johnson and C.W. Tindale (Eds.), *Informal Logic at 25: Proceedings of the Windsor Conference*. Windsor, ON: OSSA.
- Pollock, John L. (1970). The structure of epistemic justification. *American Philosophical Quarterly*, monograph series 4, 62-78.
- Prakken, Henry, Chris Reed and Douglas Walton. (2004). Argumentation schemes and burden of proof. In F. Grasso, C. Reed, and G. Carenini (Eds.), *Working notes of the 4<sup>th</sup> international workshop on computational models of natural argument (CMNA 2004)*. Valencia: CMNA.
- Reed, Chris and Douglas Walton. (2003). Argumentation schemes in argument-as-process and argument-as-product. In J.A. Blair, D. Farr, H.V. Hansen, R.H. Johnson and C.W. Tindale (Eds.), *Informal Logic at 25: Proceedings of the Windsor Conference*. Windsor, ON: OSSA.
- Verheij, Bart (2003). Dialectical argumentation with argumentation schemes: An approach to legal logic. *Artificial Intelligence and Law*, 11, 167-195.
- Vorobej, Mark. (2006). *A Theory of Argument*. New York: Cambridge University Press.
- Walton, Douglas. (1988). Burden of proof. *Argumentation*, 2, 233-254.
- Walton, Douglas. (1990a). What is reasoning? What is an argument? *Journal of Philosophy*, 87, 399-419.
- Walton, Douglas. (1990b). *Practical Reasoning: Goal-Driven, Knowledge-Based, Action-Guiding Argumentation*. Savage, MD: Rowman and Littlefield.
- Walton, Douglas. (1996). *Argumentation Schemes for Presumptive Reasoning*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Walton, Douglas. (1997a). Actions and inconsistency: The closure problem of practical reasoning. In Ghita Holmstrom-Hintikka and Raimo Tuomela (Eds.), *Contemporary Action Theory*, Vol. 1. Dordrecht: Kluwer.
- Walton, Douglas. (1997b). *Appeal to Expert Opinion*. University Park, PA: Penn State UP.
- Walton, Douglas. (1999). *Slippery Slope Arguments*. Newport News, VA: Vale Press.
- Walton, Douglas. (2001). Abductive, presumptive and plausible arguments. *Informal Logic*, 21, 141-169.
- Walton, Douglas. (2002). *Legal Argumentation and Evidence*. University Park, PA: Penn State UP.
- Walton, Douglas. (2003). Is there a burden of questioning?, *Artificial Intelligence and Law*, 11, 1-43.
- Walton, Douglas. (2005a). An automated system for argument invention in law using argumentation and heuristic search procedures. *Ratio Juris*, 18, 434-463.
- Walton, Douglas. (2005b). Justification of argumentation schemes. *Australasian Journal of Logic*, 3, 1-13.
- Walton, Douglas. (forthcoming). Presumptions, critical questions and argumentation schemes. In Hans V. Hansen and Fred Kauffeld (Eds.), *[Title Unknown; Edited Collection on Presumption]*, Penn State University Press.
- Walton, Douglas and Eric Krabbe. (1995). *Commitment in Dialogue: Basic Concepts of Interpersonal Reasoning*, Albany, NY: SUNY Press.
- Walton, Douglas and Chris Reed. (2003). Diagramming, argumentation schemes and critical questions. In F.H. van Eemeren et al. (Eds.), *Anyone Who Has a View: Theoretical Contributions to the Study of Argumentation*, pp. 195-211. Dordrecht: Kluwer.
- Douglas Walton, Chris Reed and Fabrizio Macagno. (2007). *Argumentation Schemes*. New York, Cambridge University Press.