

# Informal Logic and the Dialectical Approach to Argument

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## INTRODUCTION

Undoubtedly, Ralph H. Johnson and J. Anthony Blair are two of the patriarchs of informal logic (IL), and they remain its most recognized exponents. The informal logic movement initially began as a rejection of the tools of formal logic as an effective means of analysing and evaluating everyday reasoning and argumentation. As it developed, IL began to adopt a dialectical conception of its subject matter, and started to utilize the theoretical and methodological tools associated with this approach. This paper explores the influence of the dialectical conception of argument on the development of informal logic. Noting that neither Blair nor Johnson has embraced a dialogic approach to the dialectical, we situate Walton's dialog-based approach in relation to that of informal logic.

## INFORMAL LOGIC: ORIGINAL CONCEPTIONS

In reflecting on the origins of informal logic, Johnson and Blair (2002, pp. 340-352; cf. 1980, p. 5) describe it as arising in the context of three streams of criticism to the existing academic logic program. First the pedagogical critique challenged that the tools of logic should be applicable to everyday reasoning and argument of the sorts used in political, social and practical issues. Second the internal critique challenged the adequacy of existing tools of logic in evaluating everyday argument. Specifically rejected was the logical idea of soundness as either a necessary or a sufficient criterion for the goodness of arguments,<sup>1</sup> as well as a formalistic understanding of validity. Finally, the empirical critique challenged the ideas that formal deductive logic can provide a theory of good reasoning, and that the ability to reason well is improved by a knowledge of formal deduction. As well, Johnson and Blair (2002, p. 355) associate the genesis of informal logic with a renewed interest in the informal fallacies which were also inadequately treated in traditional logic programs of the time.

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<sup>1</sup> cf. Johnson (1995, p. 235) where this rejection is taken as definitive of the informal logic approach.

To meet the needs arising from criticisms of this kind, Blair and Johnson developed the informal logic approach to the study of argument, perhaps the most succinct account of which is given as follows.

By ‘informal logic,’ we mean to designate a branch of logic whose task is to develop non-formal standards, criteria, and procedures for the analysis, interpretation, evaluation, critique and construction of argumentation in everyday discourse. (Johnson and Blair, 1977, p. 148; as quoted in Johnson and Blair, 2002, p. 358; cf. Johnson and Blair, 1980, p. 4; Johnson and Blair 2000, p. 95)<sup>2</sup>

While in the early days Johnson and Blair (1980, 1985) were hesitant to give any further account of IL, by 1987 they felt more confident in offering the following characterization: “We believe that informal logic is best understood as the normative study of argument. It is the area of logic which seeks to develop standards, criteria and procedures for the interpretation, evaluation and construction of arguments and argumentation used in natural language” (Blair and Johnson, 1987b, p. 148).

This characterization of IL as the normative study of argument highlights what is perhaps the most widely recognized contribution of the informal logic approach: the replacement of the standard of soundness (premise truth + deductive validity) with the R.S.A. standard of argument cogency. In order to be good, arguments do not require true premises linked to their conclusions by valid inferences; rather good arguments require premises that are acceptable, premises that are relevant to the conclusion, and premises that provide sufficient support or evidence for the acceptability of the conclusion. Fallacies are explained as being violations of one or more of the R.S.A. criteria.

While having rejected the formalism, the deductivism and the concern with premise truth of traditional logic, it seems that informal logic, at least in its initial conception, remained under the influence of the old logical approach in several other important respects. For example, it seems that IL took a product-based approach whereby the starting place for the project of analysis and evaluation is a piece of text. Further, IL appears to have taken a structural approach to argument analysis: parts of arguments were conceived of as statements (sentences or propositions), rather than speech acts or moves in a language game. Further, the R.S.A. standard was conceived of as objective rather than instrumental and was used to evaluate what might now be called the semantic core of an argument. In its early conceptions, then, IL was not dialectical in the sense we now understand the term.

## INFORMAL LOGIC AND THE SHIFT TO THE DIALECTICAL

A central development in informal logic was to conceive of argument as dialectical. This shift in approach appears to have occurred some time in the mid-eighties, and by 1987 its central point had been fully articulated.

While Johnson and Blair were clearly aware of dialectical approaches to the study of argument prior to this point, it is not apparent that they had embraced such an approach as their own. For example, they (1985, p. 183) describe Rescher’s account of rationality

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<sup>2</sup> cf. Johnson and Blair (1994, pp. 10 – 11) for a brief reflection on their developing conceptions of IL. Also see Johnson and Blair (2002, pp. 356-358) where they reject a variety of alternative conceptions of informal logic.

as dialectical, saying “a rational belief ... is one that withstands the rigors of dialectical inquiry, which in turn is just the interplay of argumentation”. Indeed, in their Introduction to *Informal Logic: The First International Symposium* (1980) Blair and Johnson list a dozen attitudes which are offered as characterizing the informal logic attitude. The second of these is “a commitment to the study of argumentation as a dialectical process.” Yet, in this time, there was no explicit move towards changing the character or conception of IL itself. Indeed, in their “state of the discipline” papers of 1980, 1985, and 1987b Blair and Johnson suggest directions for development of informal logic. While they mention looking to the conceptual, theoretical and methodological resources of other disciplines such as formal dialogue theory (1985, p. 192), they do not identify informal logic with any of these alternative approaches.

Yet, by 1987 this had changed and Blair and Johnson endorsed a dialectical conception of the nature of argumentation as their own, embracing it as integral to the informal logic approach.

We have come to see in hindsight how the understanding of argumentation as dialectical in nature was a centripetal force which held together the debris created by the collision of two vectors – the logic we were taught and the logic we found ourselves wanting to teach. ... [Yet] it is only in the last few years that we have been explicitly guided by the conception that argumentation is dialectical. (1987a, p. 41)

How did Blair and Johnson conceive of a dialectical approach? “To say that argumentation is dialectical, then, is to identify it as a human practice, an exchange between two or more individuals in which the process of interaction shapes the product” (1987a, p. 46). More specifically, Blair and Johnson identified four central features as characteristic of a dialectical conception of argumentation.

1. *A product / process link*: “An argument understood as *product* – a set of propositions with certain characteristics – cannot be properly understood except against the background of the process which produced it – the process of argumentation” (1987a, p. 45).
2. *The roles of arguers*: “The process of argumentation presupposes a minimum of two roles [here identified as that of questioner and answerer]” (1987a, p. 45).
3. *The beginning of argumentation*: “The process of argumentation is initiated ... by a question or doubt – some challenge– to a proposition” (1987a, p. 45)
4. *The purposive nature of the activity of argumentation*: “Argumentation is a purposive activity. Each participant has it as his or her goal to change or reinforce the propositional attitude of the interlocutor or of himself or herself” (1987a, p. 46).<sup>3</sup>

What effects did this perspective shift have on the informal logic approach? Not only did the adoption of a dialectical perspective change the view of IL’s subject matter, but also the projects of analysis and evaluation. For example, that the argument product is a result of the process of argumentation leads one to conceive of the parts of argument not as sentences, but as speech acts comparable to moves in a game (1987a, p. 45). This, in turn,

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<sup>3</sup> Subsequent articulations of Johnson’s views (1993; cf. 1996a, pp. 103-114) identify the properties here described as dialectical in nature as belonging instead to a pragmatic conception of argument.

indicated that a purely structuralist approach to argument analysis will be inadequate (Johnson, 1996a, pp. 105-106). Also, conceiving of arguments as directed to others whom they are intended to persuade, “has implications for the standards which arguments should satisfy” (Blair and Johnson, 1987a, p. 45). Specifically, the R.S.A. standards of argument cogency are to be unpacked as dialectical criteria (Blair and Johnson, 1987a, pp. 48-55; Blair 1992). That is to say, they are to be applied against the background of a community of model interlocutors who are knowledgeable, reflective, open and dialectically astute (Blair and Johnson, 1987a, p. 51; cf. Blair 1992, pp 372-373). Standards of argument evaluation are neither absolute and potentially beyond the reach of human judgement, nor are they subjective and relative from one audience to another; rather they are expressed in relation to an ideal audience and are in this sense objective yet fallible.

### CONTRASTING INFORMAL LOGIC WITH DIALOG-BASED APPROACHES

The dialectical conception argumentation remains prominent in Blair (1992) and Johnson (1993). Yet, in their “state of the discipline” papers of 1994, 2000, and 2002 Johnson and Blair did not describe informal logic in terms that prominently highlighted its dialectical dimensions. Blair and Johnson’s endorsement of a dialectical conception of argument as integral to the informal logic approach invites the question of why they did not adopt a dialogic approach of the sort found in the works of Barth, Krabbe, Hamblin, Walton and Pragma-Dialectics.

In 1994, Johnson and Blair (pp. 10-15) took up this issue situating informal logic in relation to critical thinking, dialogue logic and argumentation theory. There, they characterize the difference between dialogue logic and informal logic as follows:

The dialogue logician assigns to logic the task of prescribing rights and duties in the transaction of a rational dialogue. The informal logician assigns to logic the task of developing the criteria or standards for use in the evaluation of arguments.

(Johnson and Blair, 1994, p. 13; cf. Johnson, 2000, p. 291)

A key difference here seems to be that the norms of dialogue logic are procedural, while the norms of informal logic relate to the product.<sup>4</sup> Johnson and Blair (1994, p. 13) write that “Like argumentation theorists, dialogue logicians seek to present and justify the rules according to which the activity [of arguing] can be carried on in a rational fashion.”

This difference is expanded upon by Johnson (1995, p. 238; 2000, pp. 309-320) who explains the difference between the pragma-dialectical and the informal logic approach as “differences in their respective objects of attention.” He writes, “PD’s rules were devised to guide a *process* of critical discussion in which the antagonist can always ask the protagonist to provide support if she does not accept the proposition put forth. IL envisages a finished (to some degree) *product*, where the arguer is typically absent” (Johnson, 1995, pp. 238-239). Informal logic is a text-based, product-oriented approach to argument where the normative component is fulfilled by providing a set of criteria for

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<sup>4</sup> Yet, even on this point there is some ambiguity. In 1993, Johnson wrote that “The task of informal logic, as I understand it, is to develop the normative theory which will allow us to assign rights and duties in the practice of argumentation” (1993, p. 204). Here it would seem that either informal logicians have the same task as dialogue logicians, or the task of the dialogue logician is consequent to the task of the informal logician.

the evaluation (or production) of an artefact (namely an argument). By contrast, Pragma-Dialectics is a speech-based, process-oriented approach, where the normative component is provided by a set of rules for conducting a certain activity (namely a critical discussion) (Johnson, 1995, p. 235).

#### BLAIR'S OBJECTIONS TO A DIALOGUE-BASED APPROACH

Blair (1998) also speaks to the difference between informal logic and dialogue-based approaches claiming that “dialogue is not an adequate model for all types of argument” (p. 325).<sup>5</sup> Blair challenges a view that he attributes to Walton (1996, pp. 40-41) that “dialogue is a necessary condition for argument, [and] that arguments always occur in a context of dialogue” (Blair 1998, p. 326). Differences in the composition and level of engagement of audiences mark categorical differences between solo and duet arguments. Further, Blair claims that regulative norms for dialogic arguments may not properly apply to, or be effective in evaluating, solo arguments. Blair (1998, p. 336) writes “rules which may make sense for engaged dialogues, do not necessarily apply to solo arguments. Yet, no one proposes that there are no norms that apply to solo arguments. Other norms are needed, as are other grounds of those norms than the need to maintain a fruitful engaged dialogical interaction between or among the participants.”

It would seem that, according to Blair, different approaches are required depending on whether arguments – even when conceived of as dialectical artefacts – are produced as a result of an active dialogue, or as the result of a rational engagement with a distant, passive, imagined or heterogenous audience. Not all arguments are best studied as dialogues. In his most recent work, Blair seems to have moved towards a more pluralistic view. In 2003 Blair proposed the beginnings of a ‘philosophy of argument’ according to which appropriate evaluative norms are relative both to the various uses to which argument can be put, as well as the perspective of the evaluator (i.e., logical, dialectical, or rhetorical).

#### JOHNSON'S MANIFEST RATIONALITY AND THE DIALECTICAL TIER

While noting several deep similarities between his own theory of argument and dialogue-based approaches, Johnson also maintains that there are crucial differences. Central among these similarities is the characterization of the practice of argumentation as teleological (goal-directed) and dialectical (involving two or more minds) (1995, p. 242). “However,” Johnson writes, “my theory of argumentation includes a third characteristic not shared by PD [Pragma-Dialectics]: argumentation is manifestly rational.” (1995, p. 242; cf. 1993, p. 207; 2000, pp. 316-317).

Perhaps to highlight the difference between his own and a dialogue-based approach, Johnson characterizes his own theory as a pragmatic theory of argument (1996a; 2000), though each of the dialectical features identified above play an integral role in shaping the theory itself. Perhaps most significant among these influences is Johnson's (2000, pp. 164-173 and *passim*) thesis that argument not only has an illative core (where the central reasons supporting a claim are set forth), but also a dialectical tier

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<sup>5</sup> The concerns with dialogue-based approaches raised by Blair (1998) are similar to those raised by Govier (1998).

(where known or anticipated objections are dealt with). According to Johnson, unless all known – in addition to actual – objections are addressed in making the case for a position, the rational acceptability of the position itself will not be transparent to all concerned, and the manifest rationality of the process of arriving at that position will be undermined. While it is not possible to deal with Johnson's mature theory of manifest rationality at length here, it is important to observe that, while he seeks to incorporate the essentially dialectical features of argumentation into it, his method for doing so does not involve treating arguments as dialogues.

#### WALTON'S CONCEPTION OF THE DIALECTICAL

Having sketched out Blair and Johnson's conception of the dialectical, and its influence on their respective approaches to the study of argument, we now proceed to place those views in relation to those of Walton, specifically pertaining to a dialogic approach to the dialectical. In broad terms, the four characteristics of a dialectical approach specified by Blair and Johnson (above) agree with our own conception.

For instance, we agree that argumentation is essentially a purposive activity, and that this characteristic is an important defining indicator of dialectical argumentation. We also agree that dialectical argumentation is based on the notion of a dialogue in which there are, in the simplest case, two participants or agents. However the concept of dialogue employed in IL is a normative rather than a descriptive model; it is quite possible for deliberating agents to examine the pros and cons of a possible course of action being considered. In this case there is no actual dialogue, in the sense of two separate persons engaged in a back and forth process of verbal or written communication with each other. Still, argumentation of this sort can be analyzed using a dialectical model.

Further, argument-as-product cannot be fully understood except against the background of the process which produced it. Yet, based on what they have said above, Blair and Johnson do seem to be advocates of a process model of argumentation. On Walton's view argumentation in any context of dialogue has a beginning point and an endpoint, and he agrees with the Amsterdam view that argumentation in a context of dialogue always goes through four stages, a confrontation stage, an opening stage, an argumentation stage and a concluding stage.

#### DIALOGIC APPROACHES TO THE DIALECTICAL

A perennial question is whether argument always has to occur in the context of dialogue, or whether it is possible to have argument, and also to analyze and evaluate an argument apart from the context of dialogue. Blair has challenged a two-part view that he attributes to Walton (1996 pp. 40-41) that dialogue is a necessary condition for argument, and that arguments always occur in a context of dialogue (Blair, 1998 p. 326). It appears that in some of his writings Walton has claimed that arguments always occur in a context of dialogue, while in other places it looks like what he proposes is not consistent with this claim.

The definition of an argument Walton has offered implies that in order to be an argument something must always occur in a context of dialogue. An argument (Walton

1990, p. 411) is defined as “a social and verbal means of trying to resolve, or at least contend with, a conflict or difference that has arisen between two parties engaged in a dialogue”. According to this definition, an argument necessarily involves a claim that is advanced by one of the parties, typically an opinion that the one party has put forward as true, and that the other party questions. Hence according to this definition, an argument necessarily involves a dialogue, because it requires two parties, one of whom has put forward a claim, and a second party who questions that claim. In other instances Walton has written that an argument does not have to occur in dialogue. For example, in (Walton 1990, p. 412) we find that an argument can occur in dialogue or not in dialogue. How can this apparent contradiction be resolved?

### PRODUCT-BASED AND PROCESS-BASED APPROACHES

An argument can be analyzed as a process or a product. Most of us who take logic are familiar with analyzing and evaluating a given argument as a set of propositions founding a text of discourse, one of which is chosen as the conclusion while the others represent premises supposedly supporting that conclusion. We are very familiar with the tools used in the typical logic course to analyze and evaluate such an argument. An argument diagram can be constructed showing an interpretation of the inferences from sets of premises to conclusions as one argument is connected to another. We can use rules from deductive logic, and inductive forms of reasoning, as well as argumentation schemes that aren't either deductive or inductive, to evaluate the strength or weakness of such an argument. Such an analysis represents the view of argument as product.

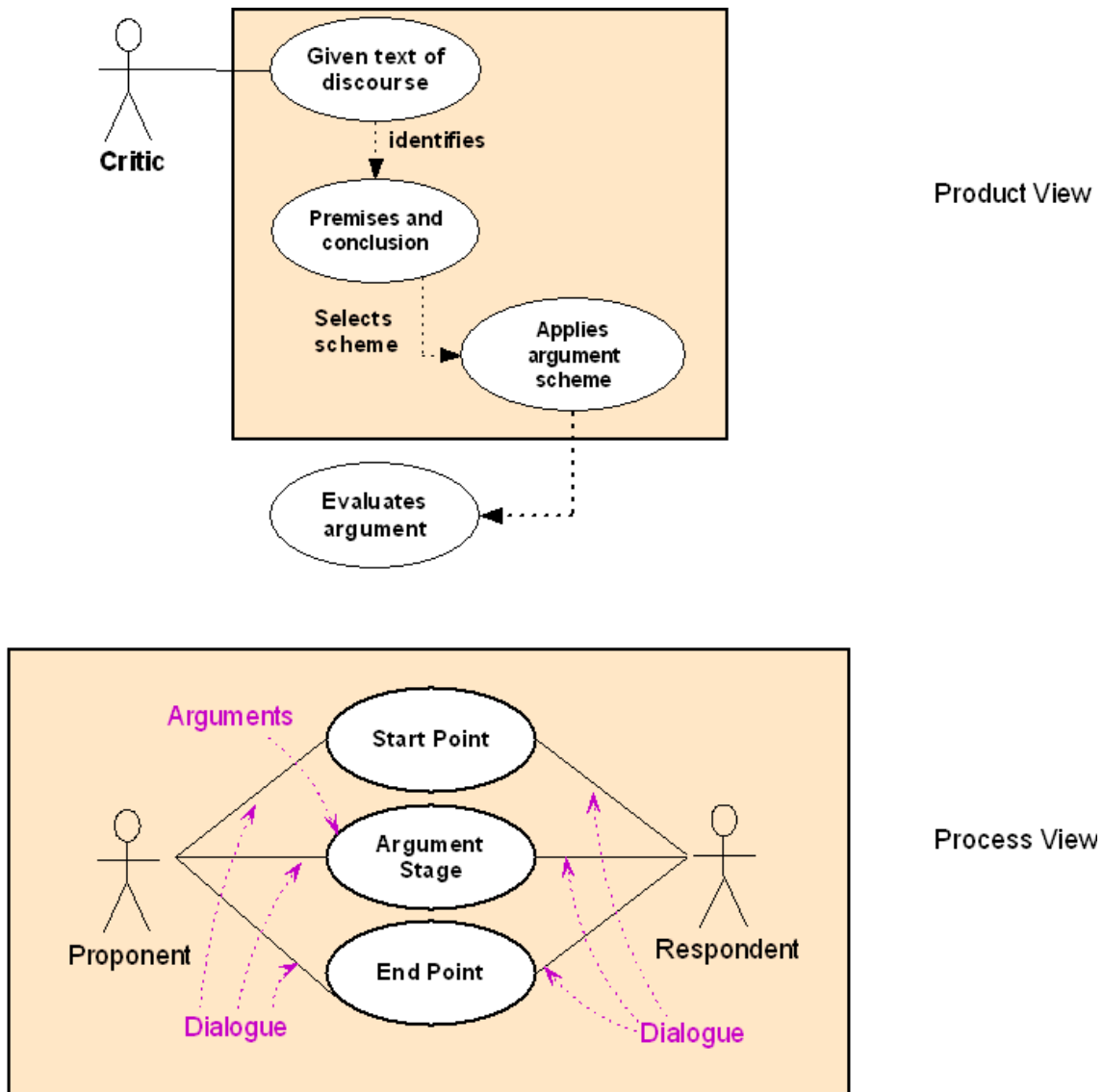
We can also analyze an argument, in a deeper way, by seeing it as a process. The product model sees an argument as a static entity, whereas the process model sees it as a dynamic entity that moves through different stages towards a collective goal, based on collaborative conversational postulates that govern how moves are made during the process (Reed and Walton, 2003). You can choose to analyze and evaluate an argument in either way. The view of argument as product represents the standard view that has been dominant in logic for so long. The view of argument as process represents the view that has emerged in recent argumentation studies and is now widely gaining acceptance.

It would seem that informal logic has often appeared to be based on and to support the process view, but there have been many instances where leading theorists of informal logic have felt that it represents a product view. Johnson (2000, p. 291) wrote “it is possible to see dialogue logic as having its focus on the process of arguing, whereas informal logic is focused on the product.” The problem is that even though typically in informal logic we begin by seeing an argument as a product, the task very rapidly, and sometimes even immediately, becomes one of viewing the argument as a process. Even to identify a passage and classify it as an argument, as opposed to a different speech act like explanation, one has to draw a distinction on the basis of how the proposition put forward has been advanced as part of a dialogue. In an explanation, it is presumed that the proposition being explained is accepted by both parties to a dialogue as a fact, and is not in dispute. By contrast, in an argument it is presumed that there is doubt or disagreement about the proposition. For if there is no doubt or disagreement, why bother bringing forward an argument? Thus from the very beginning, the task of argument analysis, which involves classifying something as an argument, as opposed to some other speech

act like an explanation, presupposes a context of dialogue in which that speech act has been used.

In theory then, there are two points of view. One is a product point of view that sees an argument as a designated set of propositions, and has no need to go into matters of the context of dialogue. The other is a process view that sees an argument as a sequence of reasoning moving forwards through the characteristic four stages towards a goal. The process view is much richer, especially if there can be different types of dialogue, with different goals. The differences are illustrated in figure 1.

Figure 1: The Product and the Process Views of Argument Compared





## THE PROCESS VIEW AS AN APPROACH TO FALLACY THEORY

One value of the process view, as shown by Hamblin (1970) and others, is that it is much more useful as a tool for studying informal fallacies. One of the most significant motivations to move toward the dialectical tier in informal logic is the study of fallacies. Walton defines fallacies as typical kinds of arguments, or moves in argumentation that appear to be reasonable, but are often erroneous, or even used as tactics of deception to get the best of a speech partner unfairly (Walton, 1995).

Hamblin (1970) proposed that formal systems of dialogue, which he called dialectical systems, could be used to model the kinds of argumentation typical of the various fallacies. Hamblin's motive in studying dialectical structures was directed to a core concern of informal logic since the time of Aristotle. He wanted to use dialectical structures as normative tools to judge the worth of common arguments associated with the various informal fallacies. Greek philosophers like Plato and Aristotle attached much importance to the subject they called "dialectic". Aristotle saw applied logic (especially the study of common arguments and fallacies) as based on a question-answer model of conversational argument. Thus advocating going beyond the product view by employing a dialectical tier is not all that new.

So, while it is possible to do quite a bit in logic by sticking to the more conservative product view of argument, it is possible to do quite a bit more by moving from the simpler and narrower product view to the more complex and deep process view. Both viewpoints are useful, but we would argue that the process view is of greater potential usefulness as applied to real instances of argumentation in everyday texts of discourse, and especially to the study of fallacies.

Why then define an argument as a social and verbal means of trying to resolve a difference of opinions? For as was pointed out above, this definition can be shown to be a process view that makes essential reference to the notion of dialogue. The reason is that this process view represents a deeper and fundamentally more revealing definition of the notion of argument than can be achieved by exclusively employing the product view.

Even since his early work on fallacies, Walton has defended employing the process view, and argued that the notion of dialogue is extremely useful for the analysis of argumentation and fallacies. Thus the dialectical definition quoted above still represents the one we advocate today. However we concede that it remains possible to define the concept of an argument in a narrower or more minimal way. It's just that we do not advocate of this definition. Although an argument can occur in dialogue or not in dialogue, dialogue is a necessary condition for argument in the fuller sense of the term that is most fundamental and important for informal logic.

## POINTS OF CONTACT BETWEEN PRODUCT AND PROCESS-BASED APPROACHES

It can be said that the product model represents what Johnson calls the illative core of an argument whereas the process model represents the dialectical (dialogue-sensitive) concept of argumentation, where the dialectical concept essentially involves the use of an argument, or other speech act, in a context of dialogue. But two points of clarification are needed.

The first concerns argumentation schemes. From a product point of view argumentation schemes can be seen simply as forms of argument, including familiar deductive forms like *modus ponens*. However, the standard way of evaluating argumentation using schemes involves applying sets of critical questions matching the scheme. This mode of evaluation is essentially dialectical, because the speech act of asking a question is dialectical, and cannot be accommodated, at least straightforwardly, in the product view. However, some recent work has suggested that it may be possible to accommodate the asking of critical questions on something like a product view (Walton and Gordon, 2005). On this analysis, some critical questions are treated as presumptions of an argument, while others are treated as exceptions to a rule in an argument. If this analysis is successful it might have the consequence that the asking of critical questions can be dealt with exclusively within the product view of argument. The issue is a complex one that has not been resolved with any unanimity yet. But it indicates that the borderlines between the illative core of an argument and its dialectical context have not yet precisely been determined at all points.

The second point of clarification has to do with the participants in a dialogue, and how they should be defined in dialectical theory. Johnson and Blair (1987a, p. 46) define the dialectical approach as one that identifies an argument as a human practice, an exchange between two or more individuals in which a process of interaction shapes the product. This picture could be broadened to include dialectical argumentation between two computers or between a human user and a computer. In a dialogue containing argumentation, the proponent and the proponent should be equated with what are called agents in computing. New technologies in the computer field, especially in artificial intelligence, are now widely based on the possibility of communications between entities that can act autonomously, reason together, ask questions, and exchange information (Wooldridge, 2002). For example, you might have an agent that searches the internet, collecting certain kinds of information, and then processes it into a format you can use for some purpose. In order to collect this information, the agent will have to ask questions of other agents. Goal-directed communication between agents, or among groups of agents engaged in projects that require teamwork is increasingly important for many applications in electronic commerce and information retrieval. The study of dialogic-argumentation is proving to be central to this subject. Thus dialectical argumentation is typically a human practice, but can also involve conversational exchanges between agents that do not actually have to be human beings.

## CONCLUSION

By and large, we are deeply sympathetic with the conception of the dialectical presented by Johnson and Blair. Clearly, it has deeply influenced their approach to the study of argument, though it has not brought them all the way to a dialog-based methodology. Criticisms of the dialogue approach often amount to saying that not all arguments can be studied, or not all arguments are best studied, from a dialogue perspective. Sometimes a product-based approach is our best, or only, bet given the information we have about the situation of a particular argument. We do not deny this, and agree that several different perspectives can be taken in the study of argument. Yet, we emphasize that our understanding of the nature, purpose, workings and success of argument is deeply

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enriched by adopting a dialogic perspective wherever possible. Indeed, in many cases a dialogic approach is necessary because without a dialogic understanding of the process of argumentation, an impoverished and inaccurate picture of the argument product will result.

### REFERENCES

- Blair, J. Anthony. 1992. "Everyday argumentation from an informal logic perspective," in William L. Benoit, Dale Hample and Pamela J. Benoit (eds.), *Readings in Argumentation*. Berlin & New York: Foris, pp. 357-376.
- Blair, J. Anthony. 1998. "The limits of the dialogue model of argument," *Argumentation* **12**, 325-339.
- Blair, J. Anthony. 2001. "'Argument' and 'Logic' in logic textbooks," in Hans V. Hansen, Christopher W. Tindale, J. Anthony Blair, Ralph H. Johnson, and Robert C. Pinto (eds.), *Proceedings of the Fourth OSSA Conference: Argumentation and its Applications*. Windsor, Ontario: OSSA.
- Blair, J. Anthony. 2003. "Towards a Philosophy of Argument," in J. Anthony Blair, Daniel Farr, Hans V. Hansen, Ralph H. Johnson and Christopher W. Tindale (eds.), *Informal Logic @ 25: Proceedings of the Windsor Conference*. Windsor, Ontario: OSSA.
- Blair, J. Anthony and Ralph H. Johnson. 1987a. "Argumentation as dialectical," *Argumentation* **1**, 41-56. Reprinted in Johnson, (1996).
- Blair, J. Anthony and Ralph H. Johnson. 1987b. "The current state of informal logic," *Informal Logic* **9**, 147-151. Reprinted in Johnson, (1996).
- Govier, Trudy. 1998. "When they can't talk back: The non-interactive audience and the theory of argument," in John Hoaglund (ed.), *The Philosophy of Argument*. Newport News, Virginia: Vale Press, pp. 183-201
- Hamblin, Charles. 1970. *Fallacies*. London: Methuen.
- Johnson, Ralph. H. 1987. "Logic naturalized: Recovering a tradition," in Frans H. van Eemeren, Rob Grootendorst, J. Anthony Blair and Charles A. Willard (eds.), *Argumentation Across the Lines of Discipline: Proceedings of the Conference on Argumentation 1986*, Dordrecht: Foris, pp. 47-56. Reprinted in Johnson (1996).
- Johnson, Ralph H. 1993. "Dialectical fields and manifest rationality," in Erik C.W. Krabbe, Renée José Dalitz and Pier A. Smit (eds.), *Empirical Logic and Public Debate: Essays in Honour of Else M. Barth*, Amsterdam & Atlanta: Rodopi, pp. 201-210.
- Johnson, Ralph H. 1995. "Informal logic and pragma-dialectics: Some differences," in Frans van Eemeren, Rob Grootendorst, J. Anthony Blair and Charles Willard (eds.), *Proceedings of the Thirs ISSA Conference on Argumentation, Volume I: Perspectives and Approaches*, Amsterdam: SicSat, pp. 237-245.
- Johnson, Ralph H. 1996. *The Rise of Informal Logic: Essays on Argumentation, Critical Thinking, Reasoning and Politics*, John Hoaglund, ed. Newport News, VA: Vale Press.
- Johnson, Ralph H. 1996a. "Argumentation: A pragmatic perspective," in John Hoaglund, ed. *The Rise of Informal Logic: Essays on Argumentation, Critical Thinking, Reasoning and Politics*, Newport News, VA: Vale Press, pp. 103-114.
- Johnson, Ralph H. and J. Anthony Blair. 1977. *Logical Self-Defense*. 3<sup>rd</sup> edition, 1993. Toronto: McGraw Hill Ryerson. (First United States edition: New York: McGraw Hill, 1994).
- Johnson, Ralph H. and J. Anthony Blair. 1980. "The recent development of informal logic," in J.A. Blair and Ralph H. Johnson (eds.), *Informal Logic: The First International Symposium*. Inverness, Calif.: Edgepress, pp. 3-28. Reprinted in Johnson (1996).
- Johnson, Ralph H. and J. Anthony Blair. 1985. "Informal Logic: The past five years: 1978-1983." *American Philosophical Quarterly* **22**, 181-196.
- Johnson, Ralph H. and J. Anthony Blair. 1994. "Informal logic: Past and present," in Ralph H. Johnson and J. Anthony Blair, eds., *New Essays in Informal Logic* Windsor, ON: Informal Logic, pp. 1-19. Reprinted in Johnson (1996).
- Johnson, Ralph H. and J. Anthony Blair. 2000. "Informal logic: An overview," *Informal Logic* **20**, 94-108.
- Johnson, Ralph H. and J. Anthony Blair. 2002. "Informal logic and the reconfiguration of logic," in Dov M. Gabbay, Ralph H. Johnson, Hans Jürgen Ohlbach and John Woods (eds.), *Handbook of the Logic of*

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- Argument and Inference: Turn Towards the Practical*, Amsterdam and New York: Elsevier, pp. 340-396.
- Reed, Chris and Douglas Walton. 2003. "Argumentation schemes in argument-as-process and argument-as-product," in J. Anthony Blair, Daniel Farr, Hans V. Hansen, Ralph H. Johnson and Christopher W. Tindale (eds.), *Informal Logic @ 25: Proceedings of the Windsor Conference*. Windsor, Ontario: OSSA.
- Walton, Douglas. 1990. "What is reasoning? What is an argument?" *Journal of Philosophy* **87**, 399-419.
- Walton, Douglas. 1995. *A Pragmatic Theory of Fallacy*. Tuscaloosa: University of Alabama Press.
- Walton, Douglas. 1996. *Argument Structure: A Pragmatic Theory*. Toronto: University of Toronto Press.
- Walton, Douglas and Tom Gordon. 2005. "Critical questions in computational models of legal argument," in Paul E. Dunne and Trevor Bench-Capon (eds.), *IAAIL Workshop Series, International Workshop on Argumentation in Artificial Intelligence and Law*, Nijmegen: Wolf Legal Publishers, pp. 103-111.
- Woolridge, Michael. 2002. *An Introduction to Multi-Agent Systems*. Chichester: John Wiley & Sons.