

Dialogue Theory for Critical Thinking

DOUGLAS N. WALTON

*Department of Philosophy
University of Winnipeg
Winnipeg, MAN R3B 2E9
CANADA*

ABSTRACT: A general outline of a theory of reasoned dialogue is presented as an underlying basis of critical analysis of a text of argument discourse. This theory is applied to the analysis of informal fallacies by showing how textual evidence can be brought to bear in argument reconstruction. Several basic types of dialogue are identified and described, but the persuasive type of dialogue is emphasized as being of key importance to critical thinking theory.

KEY WORDS: Argument analysis, dialogue theory, informal fallacies, criticism, persuasion, presumption.

Critical thinking as a discipline requires some underlying, central theory of reasoned argument criticism that can be taught to students of the subject. Goals for skills to be taught often stressed in this connection are: (a) empathy — the ability to constructively understand the other side's point of view, and (b) critical detachment — the ability to detect bias, and thereby to avoid being too heavily partisan to attain a balanced perspective in argument.' But how are these goals to be facilitated?

The basic ability required is related to the recognition that every argument has two sides to be considered, the *pro* and *con* of argument. Hence the concept of dialogue is often suggested or alluded to as the root notion. But what is a dialogue? How can it be regulated or structured? And how could dialogue as a theoretical tool be applied to the particulars of a given argument that is being subjected to criticism?

Broad models of reasoned dialogue which look like they should be applicable to argument analysis in critical thinking have recently been advanced, notably by Hamblin (1970), Rescher (1977), Hintikka (1979), and Barth and Krabbe (1982). But each of these models of dialogue has different goals and different rules. Each seems to represent a different conception of how dialogue should be structured as a model of reasoned argumentation, and how strictly the rules should be formulated and applied to the practices of argumentation.

What is needed is a more general outline of the structure of reasoned dialogue, a dialogue theory for argument analysis. Most importantly, what is needed is to see how such a theory could be effectively applied to the

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work of critical analysis of argumentative texts of discourse. For that is the stuff and substance of critical thinking as a working discipline.

1. NORMATIVE RECONSTRUCTION OF ARGUMENTATION

The theory of argument as dialogue is an abstract, normative model which should present a relatively simple but precise set of rules and procedures representing how reasoned dialogue ought to be. This abstract conception of dialogue is, of necessity, an idealization, but one that should be capable of being used to model a given, particular text of discourse, and thereby aid in arriving at an analysis of whether the particular argument can be reasonably judged to be open to criticism. Complementing this theoretical point of view, dialogues can also be studied in a practical or empirical manner, where actual parliamentary debates, courtroom trials, and other texts of argumentative discourse are examined. However, it is in the union between the theoretical and the practical point of view that real progress can be made in evaluating the justifiability of criticisms of argumentation for critical thinking.

It is important to recognize that in studying the informal fallacies and other types of important argument criticisms, we are making normative judgments about whether the argument in question is good or bad, reasonable or unreasonable, open to criticism or not.² These are value judgments, but they can be backed up by precise, theoretical conceptions of what a good argument ought to look like in a particular context of dialogue. Yet these value judgments need to be backed up by evidence from the given, particular text of discourse of the argument being put under scrutiny. There is actual evidence of various sorts that can be brought to bear in argument criticism.

The job of critical analysis of an argument begins with the presumption that there is a given text of discourse. This text may be some ink marks on a piece of paper, or it could be a taped transcript of a speech or debate. Before the would-be critic can get down to the job of making or evaluating some specific criticism of the argument, first he must answer the question "What is the argument?" Characteristically, this question turns out to be non-trivial, for several reasons. One is that an argument is rarely stated in a completely explicit form. Another is that the context of dialogue may be an important factor in making a reasoned determination of whether an argument should be judged open to criticism or not.³

What the critic must do then is to assemble the given evidence in the text and work up a reconstruction of the argument he sets out to criticize. The basic questions of any reconstruction are the following. What are the premises? What is the conclusion? If there are several stages in the sequence of argumentation, how are the premises and conclusions linked

together? If there are several conclusions, what is the ultimate (global) conclusion to be proved by the proponent of the argument? Who is the proponent? What is his position on the issue? Who is his opponent, and what is the opponent's thesis? What is the issue? What type of argument is it supposed to be (inductive, deductive, etc.)? What is the burden of proof? What type of dialogue is it? These are the sorts of questions a critic must ask in order to work up a reconstruction of an argument, prior to the job of assessing the strength or weakness of the argument.

EVIDENCE FOR ARGUMENT EVALUATION

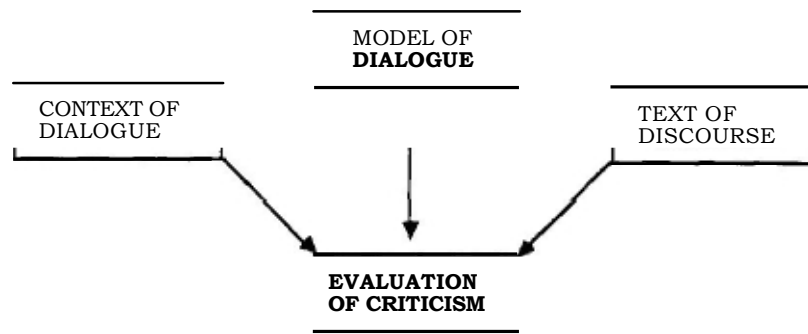


Fig. 1.

The assessment of an argument as open to criticism, or defensible from criticism, involves a normative evaluation, but one that should be based on three sources of objective evidence. First, the given text of argumentative discourse furnishes verifiable evidence of an arguer's commitments. Second, the context of dialogue provides scripts of information in the form of plausible presumptions and inferences. Third, the abstract model of dialogue provides a coherent system of argument rules, conventions and procedures that can be matched to a type of dialogue from the evidence given by the text and context.

The basic problem with the traditional treatment of informal fallacies was that "one-liner" examples were given a superficial and often substantially incorrect analysis, because the three lines of evidence above were largely ignored. The newer approach requires looking at each particular example as an extended sequence of argumentation that needs to be appreciated in its proper context as a type of dialogue with goals and standards of argument that need to be articulated.

INFORMAL FALLACIES

Tradition has it that there are a number of important and characteristic types of errors of reasoning called *informal fallacies*, arguments that often seem influentially plausible and persuasive, but are deeply and systematically erroneous and logically incorrect.' There are two main things wrong with this tradition. One is that many examples of argumentation that come under one or more of the headings of these so-called fallacies turn out, when properly analyzed, to be arguments that are plausible or weak, but not totally worthless or absolutely incorrect. The problem in these cases is that the term "fallacy" is too strong, suggesting an underlying systematic failure or total incorrectness implying rejection, when such a strong evaluation would not be justified. The second thing wrong with the tradition is that, in some cases, arguments coming under the heading "fallacy" actually turn out to be reasonable (correct), even if they may not be deductively valid, or inductively strong.

A good example is the appeal to authority or *argumentum ad verecundiam* (literally, appeal to modesty), traditionally cited as an informal fallacy. It is true that some kinds of appeal to authority, notably appeals to the sayso of an expert, can go badly wrong in argumentation, be inadequately supported and documented, and be abused in various ways.' Even so, some arguments based on expertise can be weak, but are basically plausible and reasonable arguments for arriving at a conclusion. In other cases, an argument based on expert testimony can be basically reasonable. Such arguments, for example, have long been recognized in the courts, and rightly so, as having a legitimate function in shifting a burden of proof.' The growing science of expert systems in AI also suggests that logical inferences based on expert knowledge can be correct and legitimate as a form of reasoning in some cases.'

For these reasons, it is correct to reject the outdated language of informal fallacies and replace it with the language of argument criticisms. A criticism of an argument can be strong or weak, justified or unjustified, biased or adequately supported. But it is only in those extreme cases where a criticism is so strong and decisively overwhelming that the argument it criticizes can be totally refuted as "fallacious." More often, the term "fallacious" is an exaggeration that cannot be reasonably defended, given the evidence of the text of discourse and the tools of argument analysis available to process that evidence properly.

Contrary to the tradition of fallacies, emotional appeals in argumentation are quite often basically reasonable, or at least commit no fault of reasoned argument.' Appeals to force can be proper in law and diplomacy for example, in some cases. Appeals to popular views or presumptions taken to be widely plausible for a given audience or cultural group, are a legitimate part of reasoned argument in a democratic political system' Appeals to pity for charitable donations and the like can also be persua-

sion of a non-fallacious sort. Of course, emotional appeals of all three sorts can also be badly abused in argumentation, in various ways. One of the most serious sources of misuse of such appeals is that they can be evasions of the issue (failures of relevance).

In reasoned dialogue, relevance is defined by the global issue of the dialogue. If an arguer's questions or assertions become too far removed from the thesis he is supposed to prove in the dialogue, he can be challenged to show how his question or assertion is relevant.¹⁰ The burden of proof should be on the arguer to show relevance if challenged. In some cases, this burden can easily be met. In other cases, it is not adequately met. In still other cases, a mediator must use judgment in ruling on relevance, because it is sometimes hard to anticipate where an argument is leading, if the argument is still being developed, in the middle of a discussion. When a text of argument is complete, however, it is often easier to make judgments of relevance in retrospect.

The traditional fallacy of many questions (complex question) is exemplified by the famous question: "Have you stopped beating your spouse?" However, directed to an acknowledged spouse-beater in a criminal trial, this question could be reasonable. Whether it is reasonable or not depends on the context of dialogue in a particular case." Complex and loaded questions can be problematic in many instances, but there is nothing inherently erroneous or fallacious about a complex question. A *loaded* question maybe defined as a question which contains a presupposition that the respondent is not committed to, or that is contrary to the respondent's position. There is nothing wrong with some loaded questions, in at least some contexts of dialogue, even though overly aggressive use of loaded questions can be subject to criticism in some cases as fault of reasoned dialogue.

Although begging the question (traditionally identified with arguing in a circle) has been considered a fallacy, in some cases an argument that has gone in a circle need not be open to strong criticism simply on the grounds of its circularity. Circular argumentation is properly subject to criticism only in a context of dialogue where there is *a requirement of evidential priority* indicated by the text or context of the argument, meaning that the premises are required to be better established than the conclusion to be proved.'

The traditional *argumentum ad hominem* is often a reasonable argument used to shift the burden of proof against an arguer whose expressed arguments are in practical conflict with his commitments, as expressed through his personal actions. For example, if a parent who smokes tries to counsel his child that he, the child, should not smoke because it is bad for your health, the child has a right to ask: "What about you? You smoke." This *ad hominem* reply queries the practical consistency of the parent's position on the issue of smoking. On the one hand he condemns it as a practice, while on the other he appears to condone or accept it, judging by

his own personal conduct. What we have here is not logical inconsistency, but enough of a *prima facie* case for presumptive practical inconsistency to make the child's challenge a reasonable criticism of the parent's argument. The parent might well have a good reply, and he had better have if he wants his argument to be plausible." Thus although *ad hominem* arguments should be open to severe criticism in some cases, there are many cases where they are basically reasonable arguments that have a legitimate function of shifting a burden of proof in dialogue.

One could draw similar lessons for virtually all of the traditional so-called informal fallacies of the logic textbooks. They can be bad arguments in some cases, to be sure, but in many other cases their reputation as "fallacious" is not deserved, and is based on a simplistic perception of how argumentation in natural language should properly be interpreted, analyzed and criticized. Only by a deeper understanding of the dialogue structure of argumentation can we overcome this simplistic and obstructive point of view, and obtain a more mature understanding of how to criticize an argument fairly, based on an intelligent and empathetic reconstruction of the evidence from the given text of discourse in a particular case.

3. TYPES OF DIALOGUE

There are many distinct types of dialogue. Each is characterized by different goals, and by different kinds of procedural rules that facilitate getting to the goal from an initial situation. Some types of dialogue are more adversarial than others, and the procedural rules are stated more explicitly, and are more strict, in some contexts of dialogue than in others. For example, the criminal trial is a kind of dialogue where the rules of procedure are stated explicitly and are often strictly enforced, even though they typically require interpretation by a judge.⁴ The parliamentary debate is also adversarial, and rules of arguing are stated explicitly, but these rules are less elaborate, less strict, and more loosely enforced in most instances.

From the point of view of informal logic and critical thinking, one of the most important types of dialogue is the *persuasion dialogue* where the goal of each participant is to persuade the other participant of the acceptability of a specific proposition, based on premises that the other participant either already has accepted or can be gotten to accept. One special type of persuasion dialogue is the *dispute*, where the thesis to be proven of the one participant is the opposite (negation) of the thesis of the other. Characteristically, the parliamentary debate and the criminal trial are types of disputes.

A second type of dialogue is the *inquiry*, where the goal is to obtain further knowledge in a particular area, or on a topic. The inquiry seeks proof or evidence, or the establishment of a conclusion based on given

evidence which is accepted in a field of inquiry at the original situation. The inquiry is characteristically a hierarchical and orderly search procedure, akin to what Aristotle called a *demonstration*, where the premises are required to be better known or established than the conclusion which is to be proved. The inquiry seeks established knowledge, a high standard of proof, whereas the persuasion dialogue makes do with plausible commitment, a kind of fallible opinion which is sometimes an acceptable substitute where knowledge is not presently available as a basis for acting or making a decision.

A third type of dialogue is *negotiation*, a kind of interest-based bargaining, where the goal is for the arguer to maximize his own interests, to get the "best deal" possible. Unlike the first two types of dialogue, negotiation has little to do with the weighing of logical reasoning to establish knowledge or to justify ideals, values, or convictions. In negotiation, the disputants compete for goods that are in short supply, and concessions or trade-offs agreed to are bargaining exchanges, not propositions held to be true, provable, or plausible.

If one participant in a persuasion or inquiry dialogue has reason to think that the other participant is secretly or covertly engaged in negotiation rather than persuasion or inquiry argument, the first participant is likely to be highly offended. Indeed, this type of dialogue shift of context is frequently the basis of an *ad hominem* criticism. For example, if two people are arguing about the problem of acid rain, and the participant who has taken the side that acid rain is not a serious problem is found by the other to be on the board of directors of a large industrial corporation that has often been sued for pollution, the other participant may argue that his opponent in the dialogue is untrustworthy or lacks integrity. The criticism in such a case would be a species of a *ad hominem* argument to the effect that the hidden agenda of the one arguer reveals that the arguments he professes are contrary to his own real interests and deeper motivations. In effect, the criticism is that the arguer who purports to be participating in an inquiry or persuasion dialogue is really engaged in an interest-based negotiation."

Contrary to its traditional reputation as an informal fallacy, the *ad hominem* argument is a type of criticism that is sometimes reasonable, and in other cases is itself reasonably subject to criticism as an unfair or inadequately documented attack on an arguer.

Sometimes it is not easy to tell whether a dialogue is a persuasion dialogue or a negotiation. For example, consider a committee meeting where the argument is decided by a vote at the end of the meeting. The vote may reflect the reasoned persuasion of those who attended the meeting and took part in or listened to the arguments on the issue. Or it may be based on the perceived self-interest of the voters.

Aside from the three primary types of dialogue outlined above., there are many other types of dialogue. The goal of a dialogue can be simply to

reach agreement, to carry out an action, to transfer knowledge from one party to another, or to defeat one's opponent by any means. The realization of each of these types of goals involves a different type of dialogue. Also, many types of dialogues can have sub-types. For example, the forensic debate is a type of dialogue that is a sub-type of the persuasion dialogue.

In some cases, the rules that define the goals and permissible moves in a dialogue are explicitly codified and institutionalized so that by entering into dialogue the participants, in effect, bind themselves to the rules. In other cases however, no strict rules may be stated or agreed upon prior to the beginning of a discussion, and it may be left to the participants to articulate or propose rules to facilitate the goals of the dialogue. One test of such a rule is whether the other side will agree to it. Another test is whether the proposed rule will be fair to both sides and will truly facilitate the goals of the dialogue by allowing both sides the capability of making a good case. The opening phases of a discussion are often the best place for reaching agreement on procedural rules of dialogue.

4. COMPONENTS OF DIALOGUE

Any dialogue begins with some difference of opinion or conflict (stasis) which leads to the formulation of an issue to be resolved or discussed. The *issue is a* particular set of propositions which sets the agenda for discussion by formulating what is to be proved or disproved by each participant. The issue should ideally be set in the opening stages of a discussion, because the setting of the issue determines, at the global level, which arguments are relevant and which can be ruled as irrelevant.

One of the simplest types of dialogue is the *dispute*, where there are two arguers, and the thesis to be proved by the one is the opposite (negation) of the thesis to be proved by the other. In a dispute, this pair of propositions to be proved by the opposing sides is the issue of the dialogue. However, not all dialogues are disputes. Characteristically, the dispute is a subclass of the *persuasion dialogue*, where the thesis to be proved by each side must be proved exclusively from the commitments of the other side, according to the rules of inference.

Van Eemeren and Grootendorst (1984) distinguish an initial *confrontation phase of* dialogue where the participants define the goals of the discussion and clarify or agree on some of the rules. These agreements or clarifications, as far as they are known by a third-party critic of the discourse, serve to define the context of dialogue. Such global rules, of five kinds, pertain to the whole dialogue as an ordered sequence.

1. *Two Sides*. In the basic case of dialogue, there must be two participants, each of whom represents one side of the issue to

be discussed. Conventionally, these two participants are called the Proponent and the Respondent.

2. *Moves.* A dialogue is an ordered sequence of moves. Normally, each participant takes a turn in making a move. So a dialogue is really a sequence of pairs of moves where the pair has input from each side. Normally, a pair is a question and a reply to that question.
3. *Commitments.* Attached to each side is a set of propositions called a *commitment-set*. At each move, depending on the rules of dialogue, propositions are inserted into this set or removed from it.
4. *Procedural Rules.* The rules of dialogue define the permissible moves, the types of locutions involved in a move, the regulation of commitment insertion and deletion, and sequences of moves that fulfill the goals of the dialogue.
5. *Goals of Dialogue.* A dialogue must have a specific goal or criterion of success. The goal states which sequences of moves, according to the procedural rules, count as a successful culmination or resolution of the dialogue.

In persuasion dialogue, the goal of the Proponent is to prove his conclusion (thesis) from the commitments of the Respondent. And the goal of the Respondent is to prove his conclusion from the commitments of the Proponent.

PERSUASION DIALOGUE

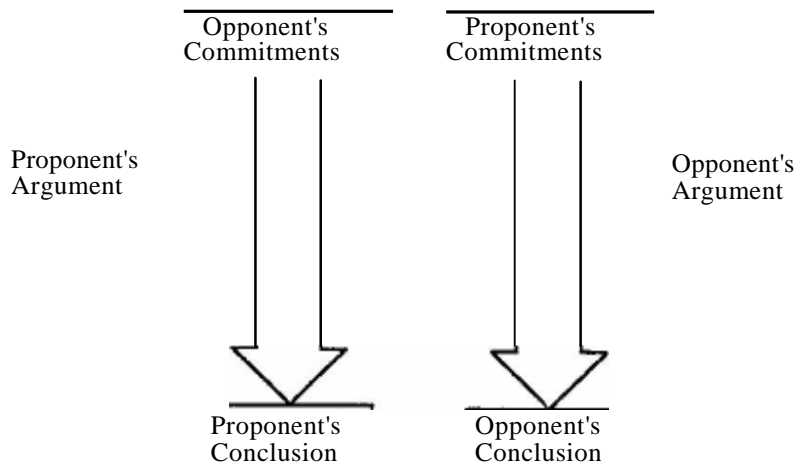


Fig. 2.

Each must take the commitments of the other as premises, and then prove his conclusion by means of the rules of inference of the dialogue.

This goal may not be too easy to carry out, especially if retraction of commitments is allowed. Another difficulty for each side is that the other side may, with reason, be reluctant to incur commitments by making bold assertions or giving direct answers to questions. Accordingly, in a structure of reasoned dialogue, there should be rules that give incentives to answer questions, and generally to take on commitments.

Whoever proves his thesis from the other side's commitments wins the game (fulfills the purpose of the dialogue). Therefore, persuasive dialogue has an adversarial flavor. However, there is another side of it as well. The commitment-set of each arguer defines that arguer's *position* on the issue at any given point in the dialogue. But there can be propositions in that commitment-set that are not known as explicit commitments by the arguer himself, or possibly even by the other participant in the argument. These propositions have been called an arguer's *dark-side commitments*, as opposed to the light-side commitments in his position that he is clearly aware of."

While persuasion dialogue has an adversarial aspect (the goal is to persuade), it also has an educational aspect, namely the revealing of one's concealed and deeper commitments on an issue, which can surface through the course of questioning and answering in a good sequence of dialogue. A sub-goal of persuasive dialogue is the revealing of an arguer's position on an issue. This increment of self-knowledge is the most valuable benefit of high quality persuasive dialogue.

Good persuasion dialogue thrives on the balance between its adversarial and educational goals. Douglas Ehninger realized this when he described good argument as a tension between two drives: (1) a partisan drive to argue for one's side of an issue, and (2) a critical restraint reflecting a commitment to the procedures required to enhance one's understanding of the issue. Ehninger summed this up by describing the ideal arguer as a "restrained partisan. " " A high quality persuasive dialogue can only be achieved by a proper balance or tuning of these two tensions in argument.

How successful a dialogue can be in reaching its goals depends to a large degree on the rules — on how well they are formulated, and how appropriate they are for the context and issue. One important type of rule is that once an assertion is made or a question answered, the concession of the commitment incurred goes on public record. Afterwards, a commitment can be retracted in some cases, but universal retraction is not always possible or easy, depending on the rules."

A commitment is not a belief of an arguer, for the theory of dialogue is not a psychological theory of what an arguer actually believes.¹⁹ Also, a commitment-set is not, in general, required to be internally logically consistent." Third, an arguer is not necessarily committed to all the logical consequences of the propositions he is committed to. Even so, the arguer's

commitments define his position, and therefore mark off a kind of boundary of the arguer's rationality. If he is blatantly inconsistent in his position, he could be open to severe or even devastating criticism.

For example, in classical deductive logic, an inconsistent set of propositions implies any proposition you care to infer. If a dialogue has enough rules of inference to include classical logic, once an arguer sees an inconsistency in his opponent's position, he could immediately deduce his own thesis, and thereby succeed in proving his conclusion.

Of course, a particular dialogue need not contain all the rules of inference of classical deductive logic. But this instance shows how inconsistency in an arguer's commitments can make his position subject to challenge.

There can be many different kinds of structures of dialogue, and in fact the models of dialogue constructed by Hamblin, Rescher, Hintikka, and Barth and Krabbe can be thought of as different *games of dialogue* for different purposes. The notion that a structure of dialogue can even be thought of as a regulated game highlights the idea that, to a certain extent, rules of dialogue can be conventions, agreed to or accepted, or even disputed about, by the participants themselves. This notion of dialogue as a kind of game was well developed in the later philosophy of Wittgenstein.

However, participants in argument are not always free to dispute rules of dialogue. In some instances, a referee, or mediator can set rules for discussion and an agenda.

5. PRESUMPTION AND BURDEN OF PROOF

It is typical of argumentation in persuasion dialogues on controversial issues of practical import in natural language conversation that there is too little relevant factual, scientific, or well-established evidence to enable either side's contention to be proved in a framework of limited time. Indeed, it is this very feature of argument that is often found problematic or objectionable: "You know, the problem with arguments is that they can go on and on, yet the issue is never resolved by a definite outcome, one way or the other." This type of remark does indicate a serious problem with dialogue as a method of argumentation, but fortunately, there are tools to deal with it.

The two basic tools are presumption and burden of proof. A *presumption* is a proposition that is not known to be true, and is open to further inquiry, but that is granted as true by both participants in the dialogue. The purpose of presumption is to shorten an inquiry or dialogue so that there can be some practical prospect of arriving at a resolution of the issue, even if the resolution may be subject to a re-opening of the inquiry, should new knowledge or circumstances arise.

Burden of proof is a device used to set the requirements for fulfillment

of the goal of the dialogue. This device is useful because in practical decision-making with less than perfect information or resources available, argument could go on indefinitely without resolving the issue unless standards for resolution have some practical possibility of being met. *Burden of proof* is most familiar in the context of persuasion dialogue, where it can be defined as the weight or strength of argument required by one side to reasonably persuade the other side. Thus in a persuasion dialogue, it is quite possible that the burden of proof for one side could be higher than the burden of proof for the other side.

Such an inequality is easily understood when it is realized that burden of proof should be set according to the commitments of the participant to whom an argument is directed. If a proposition is widely accepted by an audience, and not subject to doubt or challenge by them, only a slight argument, or perhaps even no argument at all, would be required to persuade. Or if arguments on both sides are equally balanced, a tiny amount of evidence could swing the outcome to one side.

Burden of proof should be set at the global level of dialogue, so that it is clear how strong an argument each side needs to prove its case. For example, in a criminal trial, the prosecution needs to prove "beyond reasonable doubt," a strong burden of proof, whereas the defence need only show reasonable doubt in the other side's case to win. However, burden of proof can also fluctuate at the local level, during the various stages or moves in an extended dialogue. Hence there can be shifts in the burden of proof during the course of an argument.

Presumptions are brought in and set as reasonable by goals of a dialogue or practice, and in some cases, presumptions are *required* rather than *allowed*. For example, when handling a firearm, it is a required presumption that the gun must be treated as loaded, unless one is absolutely sure that the weapon is not loaded. This type of reasoning is actually a form of the *argumentum ad ignorantiam*,²¹ but it is not a fallacious argument. It is a case of a reasonable presumption, based on ignorance, which leads to a reasonable conclusion on how to act in a special kind of situation.

Arguments on controversial subjects where reasoned convictions are at issue should be viewed as starting from a proposition that is subject to dispute but has a certain initial degree of plausibility. Then through the course of the argument, that initial plausibility is raised or lowered, through the sequence of local argument moves.²² At closure of the dialogue, the proposition at issue will have a final plausibility value. The same process of plausibility modification through the course of the argument will affect both sides. In a persuasion dialogue, it is reasonable to rule that the best case has been made by the arguer who has brought about the greatest net increase of plausibility for his thesis over the course of the argument.

This conception of persuasive dialogue can be modelled as follows. Suppose the dialogue has two participants a and b, each of whom has his respective thesis to prove, T(a) and T(b). Let's say that the initial plausibility of a's thesis T(a), is i, representing some numerical value between 0 and 1, ranging between minimum and maximum plausibility. And let's say that the initial plausibility of b's thesis T(b) is j. After the argument, the plausibility value of T(a) has become that of k, and the value of T(b) is that of l, let's say. Then the winner of the argument is whoever has the greatest increase of plausibility value between the initial and final value of his thesis.

WINNING STRATEGY OF PERSUASION DIALOGUE

	a's SIDE	b's SIDE
INITIAL MOVE	<i>plaus</i> T(a) = i	<i>plaus</i> T(b) = j
SEQUENCE OF ARGUMENT	~	
FINAL MOVE	<i>plaus</i> T(a) = k	<i>plaus</i> T(b) = l

Fig. 3,

The winning strategy then is determined by the following formula. a wins if $k - i$ is greater than the value of $l - j$. b wins if the value of $l - j$ is greater than the value of $k - i$.

a wins: $(k - i) > (l - j)$

wins: $(l - j) > (k - i)$

Since each of the pair of goals above is the opposite of the other, this form of persuasion dialogue is a type of dispute.

The most valuable insight here is that argumentative dialogue should start from an initial position which defines the given horizon of plausibility on the issue for the audience to whom the persuasive argument is to be directed. Then the argument can be defined as successful or not in relation to its goal, relative to the start line set by that horizon of commitments. It is by this means that the theory of dialogue is brought down to earth and tied into the goal of persuasion of a specific target audience in relation to the current received opinions and values of that audience.

It is through the devices of presumption and burden of proof that reasoned dialogue in such a practical form is made possible and coherent as a theory to facilitate the goals of critical thinking.

6. CONCLUSIONS

In teaching critical thinking successfully, both teacher and students bring with them developed skills, at various levels, of interpreting and evaluating extended sequences of argumentative discourse in natural language. Each field or discipline has its own special knowledge and vocabulary. But the common core of basic critical thinking skills underlying critical reasoning in each discipline is the key ability to look at both sides of an argument. The structure behind this ability is the concept of argument as dialogue. Although there are many special contexts of dialogue, the structure of dialogue in general is made up of the basic components reviewed above, put together into a whole framework which regulates the give and take of question and reply according to the conventions accepted by the participants, or imposed on them by an institution, regulating body, or chairman.

While it should be true that every argument has two sides, it should not be true that one side is always as good (strong) as the other. Both these results follow from the theory of dialogue sketched out above.

Another field much in need of a general theory of dialogue is artificial intelligence, where question-reply user interaction is an important part of computer programming.²³ Many interesting refinements of dialogue theory can be expected as outcomes of current research in AI."

NOTES

¹ D'Angelo (1971) and Weddle (1978).

² See Hamblin (1970) and van Eemeren (1986).

³ Numerous cases of this sort are cited in Walton (1987).^o

⁴ See Hamblin (1970) and Walton (1987).

⁵ See Woods and Walton (1974).

⁶ See Delisle (1984).

- See Waterman (1986) and Mann (1988).
- " Cases of reasonable emotional appeals in argument are studied in Walton (1985) and Walton (1987).
- ⁹ Indeed, section 5. below will show how persuasive argumentation generally starts from a given horizon of what is accepted by an audience as plausible.
- ¹⁰ See Walton (1982) on topical relevance in argument.
- " See Douglas N. Walton, *Question-Reply Argumentation*, Westport, Conn., Greenwood Press, 1989.
- ²² See Walton and Batten (1984).
- ' A n extended analysis of this case is presented in Walton (1985).
- " See Delisle (1984).
- ¹¹ See Douglas N. Walton, 'The *Ad Hominem* Argument as an Informal Fallacy,' *Argumentation 1*, 1987, 317-331.
- See also Walton (1985) on dark-side commitments.
- Ehninger (1970, p. 104).
- ¹⁸ See Mackenzie (1981) and Krabbe (1985).
- ⁹ See Hamblin (1971).
- ²¹ *Ibid.*
- ² See Hamblin (1970) and Walton (1987).
- ²² See also Rescher (1977).
- ²³ See Mann (1988) and Waterman (1986).
- ²⁴ This paper was supported by a Research Grant from the Social Sciences and Humanities Research Council of Canada, a Killam Research Fellowship, and a Fellowship from the Netherlands Institute of Advanced Study in the Humanities and Social Sciences.

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