

## NEW DIRECTIONS IN THE LOGIC OF DIALOGUE

### 0. DIALOGUE AS A BRANCH OF LOGICAL THEORY

Quite recently it has become apparent that there is a serious mainstream interest in studying the logical structure of dialogue. Several specific factors have led to this peaking of interest, over and above the general motivations provided by the advent of (a) a sharpened focus on artificial intelligence studies and (b) queries on means of reasonable dialogue as an alternative to nuclear confrontation. One of these specific factors is the increasing perception within education of the role of critical thinking, or "informal logic" as it is sometimes called, as a fundamental goal for undergraduate instruction in universities. For surely if there is a methodology for the applied logic of informal fallacies, *sophistici elenchi*, and other phenomena of realistic criticisms, argument analysis, and refutation, it is to be found in the logic of dialogue.

But is there a logic of dialogue? The question, at first, may seem such a departure that we may wonder if it is legitimate to raise within logic. Meanwhile, other fields have gone ahead. New studies of argumentation have appeared in sociology. The concept of dialogue is the background framework of the numerous new studies in pragmatics within the field of linguistics – see Carlson (1983). Fortunately, as the papers in this volume show, just the last ten years have brought about a lively rebirth of interest in the topic of philosophy as well. Fortunately, because philosophy should really be the home of the study of reasonable dialogue as a method of inquiry.

As Eleonore Stump shows in her paper in this volume, the tradition of the study of rules and procedures for logical games of dialogue was studied so acutely by the medievals that their scholarship on this topic has much to teach us today. The study of the *Sophistical Refutations*, and what Aristotle called dialectic, was clearly very central for the Greeks as well as for the medieval philosophers. It is only in this century – despite the astronomical rise of mathematical logic as a field of study – that the study of logic as an interactive process of dialogue between two

“players” or “participants” has languished. By looking at the history of logic, one can chart the rise and fall of the study of reasonable dialogue as a scholarly preoccupation. But surely it has never been lower than the period between 1900 and 1960.

Recent developments are already leading towards a reversal of the orientation of logic. We need to get over the idea that the only way to legitimately evaluate an argument is as a designated set of propositions, one of which, called the conclusion, follows validly by deductive implication from the others, or does not. It is necessary to reaccustom ourselves to the idea that there are unfair questions, circular arguments, and onus-of-proof criticisms of an argument that demand reasonable replies. Whether such dialogical criticisms and questions are reasonable is best judged as a matter of fair response to a question within the context of reasonable rules for dialogue. The issue is not settled by the pure logic of propositions and quantifiers, abstracted from its dialogue-context.

One historical step from the syntactic studies of Carnap and other studies of classical logic dominant in Carnap's time towards the richer framework of dialogue, has been David Harrah's theory of communication. As Nuel Belnap recently pointed out,<sup>1</sup> the logical study of communication has not attracted its due attention in the past, but now it cannot be ignored because of recent developments in computer science.

Harrah's (1963) theory of communication addresses itself to the situation in which a message  $m$  affects a receiver  $R$ . In particular, Harrah wants to analyze the value of  $m$  in terms of how it answers questions asked by  $R$ . Thus Harrah's notion of a communication event includes a question set  $Q$  as well as a language  $L$  and a set  $k$  in  $L$  which represents  $R$ 's knowledge. Harrah (1963, p. 8) defines  $R$  as a set composed of  $L$ ,  $k$ ,  $Q$ , and an information function,  $I$ , that defines the “news value” of  $m$ . This is a very rich logical framework to study communicative ideas that have too often been unfairly ignored and neglected in logical theory. As possible objects of study Harrah (p. 8), mentions situations of education, conversion, persuasion, and controversies.

Embarking on a related study from a different starting point, C. L. Hamblin has also argued for a widening of logical theory to encompass notions of communication of information in a two-person context. Hamblin began with the objective of analysing the traditional informal



fallacies, and ended up proposing models of two-person dialogue to model the contexts of argument appropriate to the study of the fallacies. Recent work along the lines set out by Hamblin is represented by the paper of Jim Mackenzie in this volume.

A third development has been the construction of formal and material dialogues based on Lorenzen's strip rules for logical constants. These systems represent a new dialogical way of viewing the semantics of classical and intuitionistic logics. They have stimulated the recent study of dialogue where the players in the game of dialogue adopt strategies based on well-defined rules for attack and defense. Because these studies have a well-defined concept of *formal winning strategy* for a given game of dialogue, they promise to be very useful in yielding new theory for the study of reasonable dialogue. The paper by Erik Krabbe in this issue surveys recent developments, and makes contributions to the ongoing research in formal systems of dialogues in the Lorenzen tradition.

A fourth development is the research of Jaakko Hintikka and his associates on information-seeking dialogues. Hintikka has developed a basic framework for dialogue in which there are two players who take turns posing questions to each other. Each player starts with a set of initial theses, and then adds additional theses to his set by answering the other player's questions. The player who first proves his own designated thesis *from his opponent's concessions* wins the game. A set of logical rules defines the correct inferences that a player can make at each move. Like the Lorenzen systems, Hintikka's games admit of well-defined formal winning strategies. Hence Hintikka's framework has the valuable property of exactness in defining a player's objectives in making moves that constitute strategically sound play. Hintikka's framework is quite general, and is not bound to the more narrowly admissible rules for attack and defence that constitute the Lorenzen games. Therefore, I think that the Hintikka information-seeking games of dialogue provide the most general, precise formal framework for the structure of logical question-answer dialogue-games. I think we can look forward to many new practical studies of *sophistici elenchi* and other problems of the logic of dialogue arising within the general structure of Hintikka information-seeking dialogues.

The papers in this volume represent new and promising directions in the logic of dialogue. To introduce many readers to these new directions, it may be best to start by emphasizing the practical motiva-

tions of such a study. What I propose to do in this introductory essay is to pose, in a pointed way, some of the problems to be solved by the emerging theories of dialogue. The tradition of informal fallacies and so-called "informal logic" is replete with significant examples of arguments and disputes that cry out for a theoretical basis to help us go beneath the Standard Treatment of such topics in logic. A good place to begin is the Hamblin game of dialogue. I will start there, posing some major problems in the pragmatics of dialogue and the study of the fallacies.

### 1. GAMES OF DIALOGUE

At one level, the pragmatics of dialogue involves the descriptive study of conventions and sequences of moves in real discussions and dialogue-events like parliamentary debates and courtroom disputations. At a more abstract level, the pragmatics of dialogue involves the prescriptive study of what is fair and reasonable in argument and criticism in relation to simple but precise models where moves are regulated by sets of rules that are precisely and clearly stated, even if there may be open questions about their realism of applicability to particular, actual discussions. The study of dialogues can then proceed by comparing the prescriptive formal properties to interesting sequences of realistic discussions.

After the framework of Hamblin (1971) and Mackenzie (1981), the study of the formal pragmatics of dialogue proceeds by constructing games consisting of question-answer systems that have various kinds of rules. These rules define the pragmatic operations of assertion, retraction, and questioning. A game is defined as a set of participants, a set of rules, and a set of propositions called a *commitment-set*, indexed to each participant. Commitments are not beliefs of the players, and may be best thought of as a set of propositions written down by each player on a blackboard. Each player has a separate blackboard. Assertion is the operation whereby propositions are added to commitment-sets. Retraction is the operation whereby propositions are removed, or erased. The basic idea behind a Hamblin-style game is that the participants take turns asking each other questions. But before we look to the nature of these questions, it is well to ask: what is the general purpose or objective of the participants in engaging in these various



propositional operations? According to Hamblin (1971, p. 137), the purpose of a game of dialogue is to exchange information among the participants. Hamblin does not define what precisely constitutes successful exchange of information, but his information-orientation clearly has definite implications that determine which rules he selects as appropriate. For example, Hamblin (1970, p. 137) proposes as a rule of dialogue that there is no point in asking a question where the questioner is already committed to one of the answers.

Other exponents of games of dialogue as a pragmatic structure for argumentation – like Barth and Krabbe (1982) – have felt that, rather than leaving open the nature of cooperative information exchange as an objective, dialogue should have precisely regulated win-loss rules. One example of such a game is the game-theoretic semantics of intuitionistic logic given by Lorenz and Lorenzen. A more general framework that also has well-defined win-loss rules has been given by Hintikka (1979). By this conception, each player is set the task of proving his initially designated thesis by means of posing questions to elicit additional theses from the other players. The player must use these elicited theses, along with the original theses, to prove his own conclusion by means of the logical rules of the game. The first player to so prove this thesis wins the game.

One special type of game, called a *dispute* by Hintikka, occurs where one's own thesis to be proved is incompatible with one's opponent's thesis to be proved. In this type of game, win-loss strategies can be evaluated. And generally the Hintikka type of model is highly favourable as a theoretical approach because the purpose of the dialogue is quite clear. One can see precisely why a player should make certain moves in argument, and refrain from other moves.

In my opinion these logical games of dialogue are the best theoretical models for the study of informal fallacies, logical criticisms of discourse, and other kinds of significant evaluations of argumentation important in all disciplines, but typified by philosophical arguments. However, a theoretical model of logical dialogue is one thing. The pragmatic job of trying to apply it to realistic bits of argumentation is quite another. The pragmatic project points up some unique difficulties, worthy of study in their own right I think.

One problem is the management of the sequence of asking and answering questions. Another is the handling of inconsistencies in a player's commitments.

## 2. MANAGEMENT OF QUESTIONS IN DIALOGUE

Questions like "Have you stopped beating your spouse?" force an answerer to concede the admission of spouse-beating whether he or she answers 'yes' or 'no'. Such questions are therefore said to commit the traditional "fallacy of many questions". The latter term may be a misnomer however, if my contention (Walton, 1981) is right that this fallacy contains six distinct elements of trickiness: (i) the question appears safe, but is risky – the presupposition appears to be a tautology, but is not, (ii) the question is loaded – it has a presupposition that is unwelcome, meaning that an answerer in a game of dialogue would (presumably) not want to commit himself to it, (iii) it is force-loaded or coercive – the unwelcome consequence is forced on the hearer, since every admissible answer has the unwelcome consequence, (iv) it is a multiple question in the sense that more than one question is at issue, (v) the alternatives presented are too gross, and (vi) there is a negation-ambiguity present, similar to the traditional horned-man fallacy.<sup>2</sup> Each of these elements is a substantive problem for the pragmatics of question-answer management in games of dialogue.

The term "fallacy of many questions" seems to draw attention to (iv), raising the question of whether asking a multiple question, e.g., a question containing a conjunction of propositions, is somehow in itself fallacious or unacceptable. The suggestion here might be that if you could break all questions down into atomic components and only allow one simple question to be asked at a single move, you could eliminate most or all of the mischief associated with (i) through (vi). There may be sense in this suggestion, but a game that only allowed such simple questions would lack expressive capacity to pose many significant kinds of questions, e.g., conditional questions. Another factor is that complex questions need not be fallacious or problematic *per se* – at least some of them are reasonable and acceptable. However, they do pose a management problem in some cases. For example, suppose I ask you the yes-no questions ' $A \wedge B$ ?' where you are committed to  $A$  but are also committed to  $\neg B$ . You need a third option to 'yes' or 'no'. One solution would be an option for the answerer to ask to have the questions divided. Another would be to allow some form of 'No commitment' option as an admissible reply.

The tradition in erotetic logic, including Harrah (1963, 1983) is to opt for the former approach. The Hamblin and Mackenzie tradition has



been to go for variants of the latter approach. I don't think either of these approaches is by itself feasible, for reasons I will now turn to.

There is an important distinction in games of dialogue between cumulative games that never allow a player to retract any of his commitments, once incurred, and noncumulative games that do allow retraction in some instances. The problem of retraction is nontrivial in realistic games of dialogue. Suppose *A* implies *B* and *C* implies *B* and player White has retracted her commitment to *B*. Should she be required or permitted to retract her commitment to one or both of *A* and *C* as well? Hamblin doesn't rule on this point, only commenting that commitment-sets are not generally closed under implication. In some of the Mackenzie games, White could be forced to retract *A* or *B* or be challenged for her ambivalence.

Perhaps the main point here is that Hamblin (1970, p. 266) clearly does allow in the syntactical rules of his game (H) that an answerer is always allowed a no-commitment option for any question. In answer to the question '*S, T, . . . , X*?', a player can either assert (commit himself to) one or more of the statements *S, T, . . . , X*, or he can reply 'No commitment' to one or more of these statements. Or he can assert a disjunction of one or more of them, or reply 'No commitment' to such a disjunction. It seems then that Hamblin feels that in some games, it is important for a player to have no-commitment options in answering questions. Such latitude in question-answering seems consistent with the open-ended goal of "information exchange" that is the rationale of Hamblin games of dialogue.

But immediately there is a problem. Couldn't a "skeptical" player always respond 'No commitment' to any question, thereby easily forestalling or stalemating the game? It seems that he could. Of course, in an open sort of game, we could require that the players act honestly or cooperatively, and not use this sort of sophisticated ploy. For all that, how could we design a game where such injunctions are precisely regulated? What form of question-rule would outlaw this ploy?

The first suggestion is to simply exclude all no-commitment options for the answerer. When asked "Was Alice wearing the leather helmet or the red beret?", by the appropriate modification of the Hamblin rule you would have to answer by giving exactly one of the following responses: (1) the leather helmet, (2) the red beret, (3) either the leather helmet or the red beret or both.

This ruling is highly advantageous to a questioner, because she can

force you to say 'yes' or 'no' to all kinds of questions you may not even have the foggiest idea how to answer. In some games that could be interesting and useful, but in many contexts it could be unfairly limiting to an answerer. Could there be a question-answer rule that more fairly mediated between giving too much power to the overly evasive answerer or the overly aggressive questioner?

This problem is in effect the problem of the traditional *ad ignorantiam* fallacy. Suppose the answerer honestly didn't know whether Alice wore the leather helmet or the red beret. If forced to answer (1), (2), or (3), he would be committing a classical *ad ignorantiam* fallacy.

What is alleged to be the traditional fallacy of *argumentum ad ignorantiam*? The usual example given is the following: "It has never been proven that ghosts exist, therefore ghosts do not exist." One can appreciate the intent behind this sort of example. If you try very hard to prove something and fail, it doesn't necessarily follow that what you tried to prove is false. On the other hand, in some circumstances your failure might be a reasonable basis for assuming that what you tried to prove is false; not a conclusive basis, but a plausible basis for making that assumption provisionally. If you don't know that a gun is not loaded, it may be prudent to provisionally assume that it is loaded. In other words, if it has never been proven that ghosts exist, then in the absence of evidence that they do exist, it could be reasonable to operate on the presumption that they don't exist. As a form of plausible inference, it is not clear that *ad ignorantiam* reasoning is always fallacious.

Where a kind of *ad ignorantiam* fallacy certainly does occur, however, is in coercive question-asking of the following sort: a questioner asks a question that poses a finite number of alternatives and forces the answerer to pick one or more of these alternatives, where the answerer should not reasonably be expected to know or assume that one or more of these alternatives is true. In effect the answerer, by answering commits himself to this line of reasoning: I commit myself to the truth of this proposition, not knowing or having any reason to assume that it is true.

Without commenting at too much length on problems in dialogue associated with the *ad ignorantiam*, let me mention two kinds of proposals for dealing with them. Hintikka (1979) rules that if the opponent refuses to answer, the negation of the presupposition of the question is added to his commitment-set. This means, for example, that



if I refuse to answer "Is she wearing the red beret or the leather helmet?", the statement that she is wearing neither is added to my commitment-set.

Another way is the one I have advocated in (1984). By this framework, the commitment-store of each participant is divided into two sides, a "dark" side and a "light" side. The light side is on view to all players, but the dark side is covered from view. The players have some plausible conjectures on what propositions are on their own or others' dark-side slates, but can only find out for sure by asking questions. The key rule in one especially significant kind of game is this: if a player answers 'No commitment A' for some proposition A, but A is in his dark-side set, then immediately A is transferred to the light side of his commitment set. As a result, this player's position has become ambivalent, and open to a charge of inconsistency.

Hence in this sort of game a player can reply 'No commitment' to a question, yet he can be "gently" forced to make a commitment. Let us go on to discuss the general problem of management of inconsistencies.

### 3. MANAGEMENT OF INCONSISTENCIES IN DIALOGUE

The traditional *ad hominem* (or *ad personam*) fallacy has to do with the problem of handling inconsistencies of position in games of dialogue. When a player's commitment-set contains an inconsistency, her position is vulnerable in some games of dialogue. For example, in the traditional obligation game, the object of the game is to trap your opponent into inconsistency. In games where the language is that of classical logic, an inconsistency in one player's commitment-set allows her opponent to win the game by deducing his own thesis. This strategy is possible in classical logic, of course, because an inconsistent set of premisses logically implies any conclusion you like.

The *ad personam* criticism involves a pragmatic inconsistency somewhere short of logical inconsistency. Many examples of this criticism are studied in Walton (1985). A good example is the following. Your doctor cites all sorts of evidence that smoking causes obstructive lung disease and other serious life-threatening ailments. She concludes that smoking is not healthy and that you should give up smoking. You are impressed. Then she takes out a cigarette and lights up. You reply with the obvious *tu quoque*: "You don't practice what

you preach. In fact your recommendation for what I, or presumably anyone should do, is inconsistent with your own practice. *Ergo*, I dismiss your argument." Is the *tu quoque* reply reasonable or fallacious?

This question needs a lot of sorting out, but two points must be made straight away. One is that the patient is or would be unwarranted in dismissing the doctor's argument that smoking is unhealthy *per se*, simply on the grounds that the doctor smokes. For the physician may have presented all kinds of good evidence that smoking is linked to catastrophic diseases. The other point is that despite the goodness of the core argument in itself, the doctor's position as a whole may be open to reasonable criticism. Why so? Well essentially because actions sometimes do morally speak louder than words. Actions do not always reflect a person's commitments to a position, but sometimes they clearly do. In such case a positional inconsistency can result. If such a weak position is criticized by an *ad personam* argument, the burden of proof may reasonably be shifted onto the defender to attempt to sort out the inconsistency alleged.

One problem is to sort out when in fact such allegation of inconsistency is fair in realistic disputations. Another is to design rules of formal dialogues to rule on the management of inconsistencies. Does an inconsistency of position mean the loss of the argument for the one who has committed the inconsistency? Or should the rules merely require that she resolve it? Or alternatively, should there be a burden of proof on the other party to press for resolution of the inconsistency, with penalties for failure to so press? Or should the inconsistency commitment-set automatically be rendered consistent by ranking the propositions in it according to some criterion of importance, and rejecting the lower-ranked members of an inconsistent set where there is an inequality? Sorting out these options among alternative rules clearly depends on the objectives and strategies of the games.

Harrah's proposal, that getting a usable message in communication involves selecting out maximal consistent subsets on the basis of the order that the messages are received, is an interesting one in relation to the pragmatics of dialogues. In conversational arguments how would the order of the communication events affect the management of inconsistent sequences of messages? There would seem to be several possibilities.

On some occasions, the latter message might be the more acceptable, where it conflicts with a previous message. The reason might be



expressed as follows: "Since you now say such-and-such, given that it conflicts with what you said earlier, such-and-so, this must mean that you have decided to give up your previous viewpoint." In another context, quite the opposite ordering could be the more plausible: "What you are saying now cannot be accepted, because it conflicts with the basic position you started with at the beginning." By these lights, the earlier commitment could be, in some sense, the more fundamental in the development of argument.

The problem is the classic one of the theory of dialogue. When confronted by an inconsistency in an arguer's collective moves, how should retraction be most reasonably organized where (1) retraction is allowed in the game generally and (2) where retraction is the appropriate move for a player who has sent out a set of propositions that turns out, or is shown by the other player, to be inconsistent.

Suppose we have two players in a Hintikka dispute, White and Black, whose theses to be proved are  $W$  and  $B$  respectively. White's strategy must be to find some set of premisses that Black will accept, where this set implies  $W$ . White looks around. She sees that in view of Black's position, the propositions ' $A \wedge B$ ' and ' $(A \wedge B) \supset W$ ' are ones likely to be thought plausible by Black. The problem for White is that Black is well aware that *modus ponens* is an inference-rule of the game. If White poses these two propositions as questions, Black, who is strategically set to reject  $W$  at all costs, will surely reject one or the other of this pair of propositions once he sees they jointly imply  $W$ . What is White to do?

This typical and elementary problem of disputation is often addressed one of two ways, in practice. White can try to divide up the premisses into smaller units and get Black to agree to them individually (strategy of dividing). For example, White might ask questions  $A?$  and  $B?$  separately. Second, White can ask other questions between asking of the crucial premisses, hoping that Black will "forget" what he has previously committed himself to (strategy of spreading). These strategies are worthless if Black has perfect memory and is a perfect logician, but in practice, such requirements may not be met by arguers.

From Black's point of view, the problem is one of contending with inconsistency, or at least impending inconsistency. In a dispute, Black is committed to the opposite of  $W$ . But if he becomes committed to ' $A \wedge B$ ' and ' $(A \wedge B) \supset W$ ', then given his commitment to *modus ponens*, he is committed to a set of propositions that is collectively inconsistent. So Black wants to avoid that situation, or if he finds

himself in it, retract some members of an inconsistent set where the game permits retraction.

Problems of handling inconsistency might arise at other points in the game, not only where White is "moving in for the kill" to prove *W*. White may ask Black at any point to accept a proposition that happens to be inconsistent with some set of propositions Black has previously accepted. Once Black has accepted an inconsistent set of commitments, he may, in some games, get a chance to remove the inconsistency. But how should he proceed?

Different contexts of arguments suggest many different ways to resolve inconsistencies of position. Harrah's policy (1963, p. 73 ff.) is to retain the later messages and then work backwards to reject earlier ones that make an inconsistent set in what you have now accepted. Other alternative policies mentioned by Harrah (p. 76), suitable for various contexts, are to include the consistent set with least information loss, or to start from the middle and work forwards and backwards in alternation.

Is there a practical context of argumentation that would dictate the correctness of Harrah's definition of usable message total that requires starting from the later messages? I think there is, and that it is a context that is highly characteristic of strategy in realistic disputation.

To see why, we need to observe first of all that the attacker's strategy in disputes is often based on a loophole principle. The attacker's best strategy is usually to get all the premisses he needs except one, and then work on that one indirectly. The missing premiss established obliquely is called the loophole. For example, White needs both ' $A \wedge B$ ' and also the premiss  $(A \wedge B) \supset W$  to prove his thesis. But if she asks Black to accept both outright, Black is likely to reject one or the other, if he is a good logician. White could proceed more subtly however. She could ask Black to accept  $(A \wedge B) \supset W$  and *B*. Then after some interval of other questions she could separately ask Black to accept  $C \supset A$  and *C*.<sup>3</sup> Black has to be somewhat more logical and less forgetful to resist this strategy.

At any rate, one can see the general strategy behind such an approach by White. White leaves out one premiss needed to prove *W*, but secures acceptance to the rest. This missing proposition is the loophole. Then White proceeds obliquely to work towards the loophole from a different direction.

What is the best way for Black to resist such a strategy? If Black



rejects the loophole, White can still find other ways of working towards closing it while still using the same strategy. But if Black accepts the loophole but reasons backwards to reject one of the earlier premisses that defined the loophole, Black has ruined White's whole strategy. White has to start all over again and find a different loophole. In their characteristic situation then, Harrah's definition of usable message total does seem to define a best strategy for the message receiver.

Finally, I want to approach the general question of how erotetic logic can be extended to integrate with the concept of dialogue in a way that might yield a theory of controversy management that could be useful for studying fallacies and realistic contexts of persuasions and disputation. However, to approach this general question is to comment on the semantics-pragmatics distinction, and that is much disputed terrain. Nonetheless, some remarks may be helpful.

#### 4. DIALOGUE AS A REGULATED SEQUENCE OF COMMUNICATION EVENTS

How can the formal erotetic frameworks of Harrah, Belnap, Åqvist, Hintikka and others be used to help resolve the pragmatic problems of question-answer management in games of dialogue? I believe that the answer is to be found in a distinction between semantics as a truth-theoretic framework on the one hand, and pragmatics as a dialogue-theoretic framework on the other. The problem is to clarify the mediation points between these two perspectives. Harrah message theory could be a best place to start such investigations, for message theory builds on the well tested and explored semantic framework of classical logic, and then builds on this by adding to it the concepts of information, message and receiver. Out of this framework comes a theory of questions and direct answers.

Although Harrah does bring in the idea of the states of knowledge of the questioner and answerer, his theory of the answers and presuppositions of questions is couched primarily in truth-theoretic terms. For example, a question is said to commit the many-questions fallacy if it has a *false* presupposition. This semantic approach does not engage the pragmatic notion of welcomeness of presupposition that we found to be important in studying this fallacy in games of dialogue. Moreover, Harrah does not allow no-commitment options as direct answers to questions. Does this mean that Harrah message theory and games of

dialogue as a pragmatic enterprise are poles apart? I don't think it need be so at all.

Here we should make an important distinction between the concept of a question, presupposition, direct answer, and so forth, as semantic notions, and on the other side the concepts of questioning, assertion, retraction and so forth, as pragmatic notions. We can then agree with Harrah (1963, p. 82) that a disjunctive question is a prime disjunction and a direct answer is a disjunct of the question. We can also accept the definition (p. 34) that a wff  $F$  commits the fallacy of many questions if, and only if,  $F$  is a false prime disjunction in some sequence of statements or  $F$  is a false existential generalization.

To see what this definition means, let's take an example: "Is she wearing the leather helmet or the red beret?" The prime disjunction for this question is the following sequence: (She is not wearing the leather helmet  $\wedge$  She is wearing the red beret)  $\vee$  (She is wearing the leather helmet  $\wedge$  She is not wearing the red beret). So there are two direct answers, each enclosed in parentheses above. The prime disjunction is the whole expression after the colon, the disjunction of the two expressions in parentheses. Essentially, the prime disjunction is equivalent to the exclusive disjunction: either she is wearing the leather helmet or the red beret, but not both. So the question commits the fallacy of many questions where in fact she is wearing neither or both.

Now pragmatically, as we have seen, this definition does not solve our problem of how to manage the many-questions fallacy and other mechanisms of the management of commitments in dialogue. For it does not define the conditions under which an answer should be said to commit the many-questions fallacy in a fair, reasonable, or appropriate game of dialogue. But Harrah does not define when *the answerer* commits the many-questions fallacy. He defines when the question, defined as a prime disjunction, commits the fallacy. Are these different matters? Well, they could be. What matters pragmatically is the issue of when the answerer or questioner violates reasonable rules of dialogue that both of them have agreed to accept. But what matters from a point of view of message theory is that an exclusive disjunction with a true disjunct be offered.

The distinction here has been nicely made, by Manor (1979), between a direct reply to a question and what she calls a *retort* – a speech act relating to the *asking* of the question. The study of realistic dialogue shows abundantly that many legitimate or nonfallacious



responses to questions are retorts or indirect answers rather than direct answers.

Generally then, the job needing to be done is to define a dialogue as a special sequence of message events that conforms to certain rules. The nature of these rules is best indicated by the pragmatic cases and problems typified by those we have commented on above.

## 5. CONCLUSIONS

The study of fallacies and other moderately realistic contexts of disputation has suggested that we need rules of dialogue that allow for "fair play" by distributing power in a reasonably equitable way between the opponent and the respondent. The participants must be constrained by clearly articulated rules, yet have enough freedom in their allowable moves to allow for interesting strategies of play. The rules of dialogue are partly conventions, agreed upon by the participants prior to play. But the rules cannot be altogether arbitrary. They must be set up in such a way as to allow reasonable ways of managing and adjudicating on the criticisms, questions, replies, and attempted refutations that correspond (at least) to the various traditional "fallacies". I put the word "fallacies" in quotation marks because the so-called "fallacies" turn out to be reasonable criticisms in some cases, poor or mistaken refutations in other cases, violations of procedural dialogue-rules in still other cases, and merely simple lapses of strategy that are no transgression against the opponent's argument in some cases. Consequently, the traditional doctrine that a fallacy is an "argument that seems valid but is not" proves to be a simplistic psychologism that must be overcome if we are to have serious analyses of the fallacies.

So we are back where we started. The study of dialogue has a practical element, in its relationship to the fallacies, and other phenomena of applied logic and disputation study. But dialogue can also be studied as pure theory, following the recent insights of Hintikka and others. But the most interesting questions and answers, it seems to me, fall into the intersection of these two areas.

## NOTES

<sup>1</sup> This remark was made by Belnap when he was chairing an American Philosophical Association Symposium on 'Questions and Communication' in Long Beach, March,

1984. I would like to thank David Harrah and Ruth Manor for comments on this paper, parts of which were read by myself during that symposium.

<sup>2</sup> The Megarian paradox of the horned man involves the following inference: what you have not lost you still have: you have not lost horns; therefore, you still have horns. According to the explanation of the fallacy offered by W. Kneale and M. Kneale (1962, p. 114), the second premiss has a presupposition that may be negated in a restricted way that accepts the presupposition or in an unrestricted way that does not accept the presupposition.

<sup>3</sup> This strategy could be especially effective if *C* is unrelated to any of *A*, *B*, or *W*, as far as Black knows.

#### REFERENCES

- E. M. Barth and E. C. W. Krabbe: 1982, *From Axiom to Dialogue*, Walter de Gruyter, Berlin.
- Nuel D. Belnap, Jr.: 1964, Review of Harrah (1963), *Journal of Symbolic Logic* **29**, 136–138.
- Lauri Carlson: 1983, *Dialogue Games: An Approach to Discourse Analysis*, Reidel, Dordrecht.
- C. L. Hamblin: 1970, *Fallacies*, Methuen, London.
- C. L. Hamblin: 1971, 'Mathematical Models of Dialogue', *Theoria* **37**, 130–155.
- David Harrah: 1963, *Communication: A Logical Model*, MIT Press, Cambridge, Mass.
- David Harrah: 1984, 'Message Theory and the Semantics of Dialogue', in L. Vaina and J. Hintikka (eds.), *Cognitive Constraints on Communication*, Reidel, Dordrecht, 267–276.
- Jaakko Hintikka: 1976, *The Semantics of Questions and the Questions of Semantics*, North-Holland, Amsterdam.
- Jaakko Hintikka: 1979, 'Information-Seeking Dialogues: A Model', *Erkenntnis* **38**, 355–368.
- W. and M. Kneale: 1962, *The Development of Logic*, Clarendon Press, Oxford.
- J. D. Mackenzie: 1981, 'The Dialectics of Logic', *Logique et Analyse* **94**, 159–177.
- Ruth Manor: 1979, 'A Language for Questions and Answers', *Theoretical Linguistics* **6**, 1–21.
- Stephen Read, Review of Walton (1981), *Mathematical Reviews*, September 1983 (83i:03015).
- Douglas N. Walton: 1981, 'The Fallacy of Many Questions', *Logique et Analyse*, **95–96**, 291–313.
- Douglas N. Walton: 1984, *Logical Dialogue-Games and Fallacies*, University Press of America, Washington D.C.
- Douglas N. Walton: 1985, *Arguer's Position*, Westport, Connecticut, Greenwood Press.

Department of Philosophy  
 University of Winnipeg  
 Winnipeg R3B 2E9  
 Canada