

University of Windsor

Scholarship at UWindor

OSSA Conference Archive

OSSA 4

May 17th, 9:00 AM - May 19th, 5:00 PM

Commentary on Hitchcock, Mcburney & Parsons

Walid Saba

Follow this and additional works at: <https://scholar.uwindsor.ca/ossaarchive>

Saba, Walid, "Commentary on Hitchcock, Mcburney & Parsons" (2001). *OSSA Conference Archive*. 58.
<https://scholar.uwindsor.ca/ossaarchive/OSSA4/papersandcommentaries/58>

This Restricted Access is brought to you for free and open access by the Conferences and Conference Proceedings at Scholarship at UWindor. It has been accepted for inclusion in OSSA Conference Archive by an authorized conference organizer of Scholarship at UWindor. For more information, please contact scholarship@uwindsor.ca.

Author: Walid S. Saba

In Response to: David Hitchcock, Peter McBurney, and Simon Parsons, *A Framework for Deliberation Dialogues*

© 2001 Walid S. Saba

ABSTRACT: In 'A Framework for Deliberation Dialogues' (henceforth FDD), Hitchcock, McBurney and Parsons embark on an ambitious effort to build a formal model for deliberation dialogues. The work is quite ambitious in that a deliberation dialogue is perhaps the most general type of dialogue - it perhaps subsumes other types of dialogues, such as negotiation and persuasion. It is precisely for this reason, however, that it is difficult to formulate deliberation dialogues. While it might be possible to precisely define utility, relevance and termination criteria in negotiation and persuasion dialogues, these issues are harder to define in a deliberation dialogue where participants are assumed to enter the deliberation without an initial fixed commitment and without hidden goals and intentions.

1. Introduction

The work of Hitchcock, McBurney and Parsons ('A Framework for Deliberation Dialogues', henceforth FDD) is an ambitious effort to develop a formal model for deliberation dialogues, arguably the most general type of dialogue as it seems to subsume other types of dialogues such as negotiation and persuasion dialogues.

While the authors make it quite clear that the model presented is far from complete (and thus the term 'framework' in the title), they have no doubt suggested an interesting framework worthy of further exploration. In particular, the model presented seems to be the first to suggest how participants with no initial fixed commitment to any course of action can engage in a dialogue that could eventually result in a consensus for an optimal course of action. There are several interesting aspects to this work. There are also some issues that the proposed model raises that we like to discuss.

2. Deliberation vs. Other Types of Dialogues

As suggested in FDD, in a deliberation dialogue participants have no fixed initial commitment to any potential course of action, and the outcome of the deliberation is generally a consensus on an optimal course of action. This necessarily means that the outcome of a deliberation is in principle sub-optimal from the perspective of any individual participant. Given this aspect of a deliberation dialogue, and given the lack of absence of individual goals (or intentions), how are various proposals then evaluated, and how is progress measured; that is how is it that a deliberation ever terminates? These questions are much easier to answer in other types of dialogues, such as negotiation and persuasion. In a negotiation, for example, participants have a fixed goal and a clear utility function that participants use to measure their progress towards achieving their goal. In negotiating for a certain resource, for example, agents typically compute a function that measures the utility of a certain attribute, such as cost. These attributes are typically assumed to take on values in a partially ordered domain. In such a framework participants have a fixed goal (say a fixed price) and progress (of the negotiation) is measured by how far the participant is from the goal.

Proposals and counter proposals are then made to reach an optimal point between the goals of the participants. Progress can be easily measured since movement towards the fixed goal is clearly defined. Note that participant's goal might even involve a set of attributes. For example, when buyers and sellers negotiate they usually have a set of constraints that they try to maximize or minimize, such as cost, time, etc. Buyers and sellers might even have a level of commitment that also effects how the negotiation proceeds (a buyer that is not highly committed can perhaps afford to negotiate harder).

In a deliberation, where the goal is to reach some sort of a consensus on a course of action, these criteria are not applicable. In particular, since individual participants have no fixed goal against which they can measure a certain proposal, the question becomes how are various proposals evaluated? The authors in FDD suggest that proposals are evaluated with respect to various perspectives that participants can suggest. For example, in deliberating for some consensus on a course of action regarding pollution, a given participant can propose some course of action from a number of perspectives - say from an economic, health, legal or a moral perspective. Clearly this is a large (as large as infinite) set of potential perspectives. This raises two questions: (i) how is the question of 'relevancy' determined, and (ii) since no individual participant's perspective is paramount, it is not clear according to whom should 'relevancy' be determined?

This point needs further clarification. If participants are allowed to make proposals from any perspective whatsoever, we could run into some version of the frame problem where deliberations become intractable (they would possibly never terminate). If, on the other hand, the set of perspectives that participants are allowed to suggest is limited, then there must be some criteria (possibly relevancy) by which it can be decided whether a certain perspective should be even considered. This leaves us with two questions: (1) how is relevancy determined; and (2) since participants are treated in an equitable fashion, who decides relevancy? This, in our opinion, is the most challenging aspect of formalizing deliberation dialogues, since such problems are easier to deal with in other kinds of dialogues (e.g., negotiations and persuasions).

3. *Some Minor Issues*

We believe that a temporal dimension can be added to the model suggested in FDD so that needless cycles are avoided. For example, one can enforce rules that preclude a participant from making a proposal that they (or even others) made earlier, one that was previously evaluated and retracted. Finally, it would seem that the semantics of the **ask_justify(P_j,P_i,type,t)** locution need to be further explored. In particular, this locution can be assumed to occur between several individual participants in parallel. On the other hand, it could be assumed that all (other) participants must wait and listen-in on this interaction. Note that the question of the cardinality of this locution (i.e., whether it is 1-to-1 or many-to-many) is not simply a question of a sequential vs. a parallel model. Depending on the semantics of this locution (depending on the cardinality of the **ask_justify** interaction), the outcome of the whole deliberation can be quite different.

4. *Concluding Remarks*

The attempt of Hitchcock, McBurney and Parsons to develop a framework for deliberation

dialogues is quite ambitious, since it would seem that a deliberation dialogue is the most general type of dialogue. The work is also of paramount importance to the AI community which is concerned with developing formal models for various types of dialogues between autonomous and interacting agents. There are a number of interesting aspects to this work, but there also seems to be a number of questions that need to be answered. In particular, it seems that unlike other types of dialogues, questions of relevancy and utility, and thus termination are much more difficult to define in deliberation dialogues. The answer here might lie in developing the idea of a perspective further (and possibly relate this to a mental state model). That such important questions can now be raised, is due to the Hitchcock, McBurney and Parsons' proposed framework for deliberation dialogues.