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Commentary on Visser on computer support for pragma-dialectic argumentation analysis

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Commentary on Jacky Visser, "Towards Computer Support for Pragma-Dialectical Argumentation Analysis"

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Visser puts forth an argument for the development of computer support for argumentative tasks based on the pragma-dialectical theory of argumentation. Visser notes that this "analytic method is arguably one of the most complete and well-established analytic methods in argumentation theory" (2016). The theory views argumentation as part of a critical discussion for which a "reasonable resolution" exists. An ideal model of critical discussion forms the basis for this method of analyzing arguments (e.g., van Eemeren & Grootendorst, 1992) in which a difference of opinion occurs. The ideal model is used to reconstruct the original text, which forms one of two sub-tasks of the method; namely, the reconstruction sub-task. The second sub-task is the abstraction sub-task, in which an analytic overview of the argument is constructed. Visser outlines these sub-tasks and posits ways in which computer automation could be used to support the development of pragma-dialectic reasoning. He notes that while computational tools have been applied to various theories of argumentation, the pragma-dialectic approach has yet to be so supported, which he finds surprising given the central role of the theory within the field of argumentation studies. The theory itself, however, is not without its controversies.

The ideal model specifies several rules which constrain the progression of arguments. These rules, as laid out by van Eemeren, Grootendorst and Snoeck Henkemans (2002), include (to name a few): *the freedom rule* (parties must not prevent each other from advancing standpoints or from casting doubt on standpoints), *the relevance rule* (a party may defend a standpoint only by advancing argumentation relating to that standpoint), and *the usage rule* (a party must not use formulations that are insufficiently clear or ambiguous and a party must interpret the other party's formulations as accurately as possible. One of the consequences of the set of rules is that the model allows for only simple discussion, in which no more than one thesis can be made, doubted, and defended. Visser offers a very simple example (see the following figure): Paul and Olga discuss the possibility of imminent rain. The structure of the dialogue is reconstructed using a set theoretic representation, with the specifics of the example emphasized overtop a more general graph. The original dialogue has four straightforward turns, beginning with Paul's assertion ("I think it will start raining soon"), Olga's doubt ("Why do you think so?"), Paul's argument ("Because the clouds keep getting darker.") and Olga's acceptance ("Ah, I see."). It is easy to imagine extensions to this dialogue for which iterations of doubt and argument ensue. For example, Olga doubts the argument with "The darkest clouds are still quite far away", to which Paul might reply, "Yes, but they are moving quickly in this direction." Such iteration would respect the relevance rule, and we can imagine how the graph below could be modified in such a case.

Bondy, P., & Benacquista, L. (Eds.). *Argumentation, Objectivity, and Bias: Proceedings of the 11th International Conference of the Ontario Society for the Study of Argumentation (OSSA), 18-21 May 2016*. Windsor, ON: OSSA, pp. 1-3.

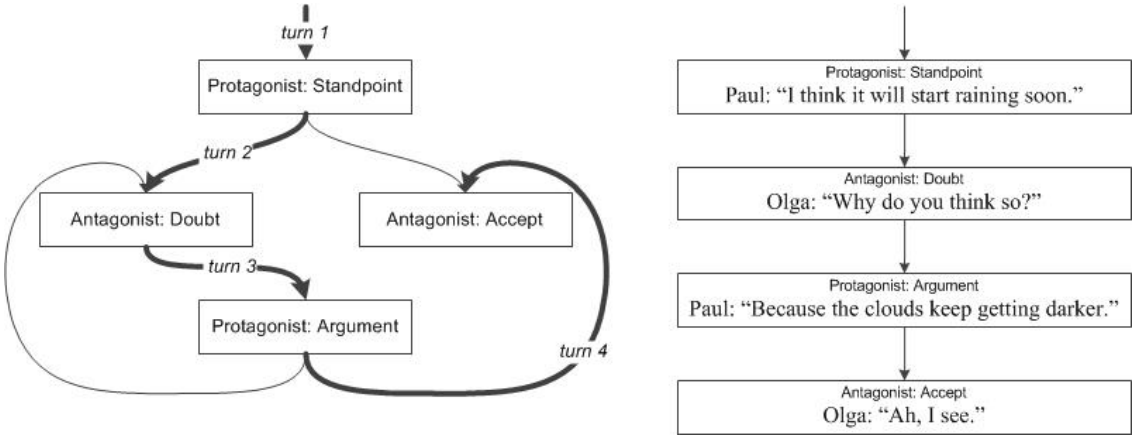

Figure 2: Example dialogue reconstructed (Visser, 2016)

Consider an alternative way the conversation could unfold:

> Paul: I think it will start raining soon.
> Olga: Why do you think so?
> Paul: Because the clouds keep getting darker.
> Olga: But it is too cold for rain, I think it will snow.

Such an exchange is not uncommon in certain parts of the world, and yet this move (Olga's proclamation of snow) would not be supported within the pragma-dialectic ideal model. Lumer (2010) is critical of such limitations, noting that "real, offensive attacks are missing. And therefore the antagonist cannot point to the protagonist's *errors*; no real *critique* is taking place" (emphasis in original). Another, more serious example comes to mind – that of a patient trying to decide between competing diagnoses. In this multi-agent scenario, each doctor has a separate standpoint and relevant arguments, and in casting doubt the patient may consider one standpoint to challenge the other. While Visser (2016) suggests that the ideal model is "a good starting point for multi-agent systems in which human agents participate," the degree to which the model may apply beyond special cases of argumentation is not immediately clear. A hint towards this is suggested in a brief comment regarding "coordinatively compound argumentation," however the idea is not further developed within this paper.

Potential limitations to the model aside, the call for computer support in its application seems well founded. Visser is pragmatic in his approach, identifying areas in which computational support in the way of automation and knowledge mobilization could be best achieved. With respect to applications, he notes the potential for disseminating analyzed texts, pointing out the limitations of current archival practices that are not widely available. With an eye toward educational uses, he also identifies a potential role in assessment and evaluation of students' reconstructed argumentation structure. Computational tools could be used to compare a student's work to "the one given in the answer guidelines for grading." This raises some questions regarding the possibility of multiple appropriate argumentation structures and how that could be programmed, particularly in more complex cases. As Visser (2016) notes, the analytic skills of computer tools are not yet on par with human skill, and more details regarding how a complicated model could look when those complications include both more sophistication in the

reconstructed dialogue as well as its possible structures. However, part of this point might be moot given the rules laid out, which might pre-empt any such ambiguity.

In moving forward, Visser notes existing obstacles to the development of computer support. In particular, though it is not discussed in this paper, the challenges in "engineering computers to understand the meaning of texts in natural language, which is still an open problem in Artificial Intelligence," cannot be underestimated. It will be interesting to see how the integration of these areas of research can lend themselves to the development of the kind of computing tools for which Visser calls.

References

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Eemeren, F.H. van, & Grootendorst, R., (1992). *Argumentation, Communication, and Fallacies: A Pragma-Dialectical Perspective.* Hillsdale, NJ: Lawrence Erlbaum Associates.

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