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Shahid Rahman, Zoe McConaughey, Ansten Klev and Nicolas Clerbout: *Immanent Reasoning or Equality in Action; A Plaidoyer for the Play Level*, Cham, Springer International, 2018, 330 pp.

Immanent Reasoning or Equality in Action is the first extensive study on Dialogical Logic including, in detail, both technical and philosophical aspects of this logical framework. The principal task of the book is to explore the philosophical merits of dialogical logic (DL hereafter) by linking it with the approach of Constructive Type Theory (CTT); and in this way the main thesis is that the backbone of any reasoning is the idea of equality. In order to accomplish this task, the authors develop the following four topics:

- 1) A full explanation of the various technical features of DL (chapters 3, 4 and 5)

- 2) A detailed and clear introduction to CTT (chapter 2)
- 3) Combining the dialogical framework with CTT (chapters 7, 8 and 9)
- 4) Some discussions about the relevant philosophical issues (chapters 1, 6, 10 and 11)

Of the above four phases the first two can be studied in their own rights. In this respect the book is of a valuable contribution to the literature on DL and CTT, and so far it can be very useful for those intending to know much about these two philosophically interesting logical frameworks.

Phase 3, which is somehow the centre of the study, as the authors state in the preface, is the result, and the first presentation in book length, of a project launched some years ago among the dialogicians of *Lille School* which aims to implement CTT in dialogical perspectives, or to equip dialogical framework with the achievements of CTT. This rather technical part, not only aims to reconstruct the standard dialogical framework but also try to show new capabilities of this framework while incorporating CTT. In this way, the book provides also a dialogical demonstration of (constructive version of) the axiom of choice (ch. 8) as a proof of concept. Such a demonstration of course is interesting in its own right.

A central notion of CTT is that of judgment which is distinguished, not only conceptually but also notationally, from proposition. A judgment asserting the truth of P should be scribed in the following form:

$$a : P$$

which is to say a is a piece of evidence, or a reason, for P . Likewise the following judgment states that a and b are the same reasons for P (or generally a and b are identical within the type P):

$$a = b : P$$

The main idea of Rahman and his collaborators, developed particularly in chapter 7, is that by extending the language of the dialogical framework with the above mentioned forms some significant problems regarding the very nature of logic and reasoning can be a resolved.

From the one hand, if the aim of dialogical framework is to make explicit the game of giving and asking for reasons, then the above forms would be very helpful and make the interactions constituting the

reasoning more manifest. On the other hand, the dialogical distinction between play-level and strategy-level makes it possible between to recognize two kinds of reason: local reason (the left side of the colon in the assertion made during a particular dialogue) and strategic reason (to prove validity of a statement by providing a dialogical winning strategy for it).

A remarkable problem thus approached is what the authors call Martin-Löf's circularity problem. The problem is that if we explain demonstration as a chain of inferences and if inference is defined as making a conclusion evident on the bases of some other known judgments, then "we cannot take 'known' in the sense of demonstrated, or else we would be explaining the notion of inference in terms of demonstration when demonstration has been explained in terms of inference" (p. x). Such a problem may be considered as a challenge for the standard proof-theoretical approaches. Now appealing to the dialogical interaction and on the basis of the distinction between local reason and strategic reason such a circularity will no more occur. In an inference we are dealing with local reasons whereas demonstration is to provide a strategic reason. Such an idea is indeed quite promising. It will help to scrutinize the nature of meaning, truth and validity; and the authors tried to draw some conclusions in those regards of their main idea.

In the following, I will focus on phase 4 mentioned above, that is, on the philosophical problems that the authors tackle in parallel to their painstaking formal studies. I distinguish and discuss here six notable theses that the authors develop in relation to the above mentioned seminal idea. Of course the detailed arguments cannot be reconstructed here but I will try to discuss how they are supposed to work.

1) *Equality in action*

One of the main constituents of the dialogical framework is a structural rule that prevents the proponents to assert elementary positions unless it has been asserted by the opponent. In the other words who enters in a dialogue in order to support a thesis is allowed to state an elementary statement only if the challenger has appealed to it before. Rahman and his collaborators call this *Socratic rule*. It has been also called by some scholars *ipse dixit* (He, himself, said it). The reason for calling it Socratic is clear: it is a feature of Socratic dialectic not to claim a fact but to use what the interlocutor admits. In fact this is a feature of formal dialogue, where the framework is devised to evaluate the formal validities. In the material dialogues it should be modified in the proper way. However, in any case Socratic rule is a cornerstone for dialogic interactions. Now, the idea of the authors is that by embracing

the expressive tools of CTT in dialogical framework, peculiarities of this rule and its status can be more explored. Above all, the form which expresses the identity is quite relevant here. The proponent can state explicitly that he asserts, say, P , for the same reason that the opponent has asserted it. That is if the opponent has made the judgment

$$a : P$$

the proponent, when asked, can make the judgment

$$b = a : P$$

which means that I have a reason, or a piece of evidence, b for P which is identical with yours. Thus identity, playing a crucial rule in reasoning, is itself thematized within the dialogical framework. Notice that this identity is not that of the propositional level: it is in the sides of reason, or of truth maker, of a judgment, and it functions in the action of reasoning not as a predicate, hence the title of the book “Immanent Reasoning or Equality in action”.

We call our dialogues involving rational argumentation dialogues for immanent reasoning precisely because reasons backing a statement, that are now explicit denizens of the object language of plays, are internal to the development of the dialogical interaction itself. (p. 305)

2) *A fully interpreted object language*

The authors discuss that by incorporating forms of CTT, which expresses “proof-object”, with its dialogical distinction between local reason and strategic reason, as well as identity functioning in the interaction of reasoning, dialogical framework puts a crucial step towards being a fully interpreted language:

[T]he expressive power of CTT allows all these actions involved in the dialogical constitution of meaning to be incorporated as an explicit part of the object language of the dialogical framework. (p. 278)

It should be said that the term “object language” in the above phrase is not quite adequate, since the distinction between object language and metalanguage belongs to the model-theoretic approach while model has no role in the dialogical framework —in contrast to some other game-theoretic frameworks. In any case, the language of DL

enriched by the forms of CTT, so argue the authors, turns out to be a more powerful language able to elaborate various aspects of reasoning within itself.

3) *The crucial importance of play-level*

In various places of the book, the authors stress the distinction between play-level and strategy-level and show the peculiarities of the former. Such a distinction is already a feature of DL which when linked with CTT can aid the latter to avoid the problems of the sort mentioned above as Martin-Löf's circularity problem. As a result of careful examination of some formal challenges as well as philosophical debates the authors make a conclusion: "the meaning of expressions comes from the play level" (p. 289).

4) *The dialogical conditions of meaningfulness: symmetry of local meaning, dialogue-definiteness*

If "the play level is the level where meaning is forged" (p. 305), one may expect that some conditions for meaningfulness should be determined within this level. The authors discuss, in chapter 1 and chapter 11, two of these conditions. One is the player-independence of the meaning. If the meaning was different for the parties of the dialogue they would not speak about the same thing so that no genuine dialogue would occur. This includes the meaning of logical connectives. Thus the rules concerning them should be symmetric. The author show that by considering such a criterion the challenges such as the case of *tonk* are easily avoided (p. 286). Dialogue-definiteness is to say that in order for an expression to be meaningful the rules concerning it should be such that do not lead in endless plays.

5) *A way to formalize material dialogue (or reasoning)*

As opposed to formal dialogues, in material dialogues we should have rules to assert and challenge elementary propositions according to their specific contents. By the considerations listed above, the authors argue that the equipments required to formalize material dialogues have been prepared: the conditions for those rules are explained and the expressive power to deal with the specific reasons relevant to the elementary proposition is provided. Nevertheless, as the authors point out, these are only first steps and much more is needed to develop a comprehensive framework for material reasoning. However, Rahman and his collaborators provide examples of such material dialogues (sections 10.1 to 10.4).

6) *The dialogical framework integrates world-directed thought and inferentialist approach*

In some places of the book, including in section 10.5.1, the

authors mention Sellars' idea of *space of reason* and two conflicting interpretations of it proposed by Brandom and McDowell. The authors argue that dialogical meaning explanation is not merely inferentialist, since this latter neglects the play level and consider every sequence of moves in reasoning necessarily inferential (p. 270), nor it is merely world-directed since even for material proposition there should be assigned rules of challenge and defence satisfying dialogue-definiteness:

the dialogical framework of immanent reasoning enriched with the material level should show how to integrate world-directed thoughts (displaying empirical content) into an inferentialist approach, thereby suggesting that immanent reasoning can integrate within the same epistemological framework the two conflicting readings of the Space of Reasons brought forward by John McDowell (2009, pp. 221-238) on the one hand, who insists in distinguishing world-direct thought and knowledge gathered by inference, and Robert Brandom (1997) on the other hand, who interprets Sellars' work in a more radical anti-empiricist manner. (p. 233)

However, this discussion would deserve more explanation by the authors. Neither the main idea of Sellars nor the viewpoints of Brandom and McDowell were given in sufficient details and with required quotations. The reader may be convinced by the remarks of the authors but not enough space is dedicated to the presentation of the conflicting views. It could be a separate chapter.

At the end I have to emphasize that the book throughout its detailed discussions contain very stimulating ideas, besides the main one which is fully developed. The book also in each step addresses the recent critics of dialogical logic and responses them in a rather convincing way. One of the main points of the book is to contest many criticisms, such as Duthil-Novaes (2015) and Hodges (2001), complaining that dialogical logic has only handled logical validity. The authors discuss that in fact such criticisms did not adequately realize that DL is a framework that can be extended and developed in several forms. The point of the chapter on material dialogues (chapter 10) is to develop a logic of content, where the authors show how to develop dialogues for natural numbers and more generally for finites sets, whatever they are. The authors also point out in a cursory way to some of the other recent works, e.g. Magnier (2013), Rahman and Iqbal (2018) and Rahman, Iqbal and Soufi (2019), which show the fruitfulness of dialogical framework for, for example, cooperative games in legal reasoning both in classical Islamic and

contemporary western jurisprudence, which may even lead to a new deontic logic.

The book is no doubt a highly valuable contribution to the studies on logic and philosophy of logic.

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