



Book Reviews

JAN DEJNOZKA, **The Concept of Relevance and the Logic Diagram Tradition**, Create Space Independent Publishing Platform, 2012, 170 pp., ISBN-10 1475071094, ISBN-13 978-1475071092.

The Concept of Relevance and the Logic Diagram Tradition is the most recent book by Jan Dejnozka, who argues that despite the usual view, according to which relevance logic is a separate matter from classical modern logic, some classical authors such as Quine, Russell and others can be viewed as relevantists, in some sense, by means of an adequate interpretation of the concept of relevance. The main line of his argumentation is based on the union of two fields of research which traditionally have no elements in common, namely, logic diagrams and relevance logic.

Diagrams are widely used to represent and carry out reasoning in general, and, in particular, they are an important component in the development of heuristic theses and reasoning in logic and mathematics. Well-known examples of diagrams are Euler circles, Venn diagrams and the existential graphs of Charles Peirce. However, with regard to logic, diagrams have been relegated to a secondary role, and almost exclusively utilized in heuristic reasoning and proofs, but not as a part of reasoning and proofs. An important thesis defended by some diagramists is that diagrammatic systems can provide rigorous proofs.

Relevance logic is a paraconsistent logic that, besides providing a good formal apparatus for intuitive notions of implication and entailment, has been widely used in philosophy and computer science. One of its main goals and motivations is removing some of the discomforts caused by the paradoxes generated by material implication and strict implication. Relevantists have pointed out that such paradoxes are caused by the fact that the antecedent and consequent of implication deal with completely different contents, such as the paradox that arises when one

tries to formalize a sentence like “The sun is made of yellow cheese. Therefore, it is either raining in France now or it is not”.

Logicians in general, however, are not interested in the contents of assertions, but in their form. In order to circumvent this inconvenience, relevantists have formally forced the antecedent, the consequent, and the rules of inference to stay in the same subject. One very popular method is variable sharing, as presented by Anderson and Belnap in their well-known book *Entailment*. According to this method, a formula of the form $A \rightarrow B$ can be proved in relevance logic, roughly speaking, if A and B have at least one propositional variable in common and no inference can be shown to be valid if the premises and conclusion do not share any propositional variable. It is worth noting that the principle of variable sharing is only a necessary, but not sufficient, condition for a logic to be classified as a relevance logic, and this principle does not eliminate all the paradoxes and fallacies associated with implications.

The principle of variable sharing is attacked by Dejnozka, and he argues that the right way to stay in the same subject is through the concept of truth-ground, like that introduced by Wittgenstein. Thus Dejnozka asserts that his position opposes those adopted by Anderson and Belnap in at least two aspects:

(i) While Anderson and Belnap argue that the classical tradition, which began with Frege, Russell and Whitehead, has no concern with the notion of relevance, Dejnozka, in his turn, argues that “modern classic logicians such as Pierce, Frege, Russell, Wittgenstein and Quine are implicit relevantists on the deepest level”.

(ii) Insofar as Anderson and Belnap argue that an essential element of relevance is variable sharing, Dejnozka’s position is radically contrary to this principle, and he argues that the essential property of relevance is the conservation of truth-ground and, to sustain this thesis, he makes reference to Wittgenstein’s work, supported by references to Russell.

Dejnozka’s defense of his view is well articulated and strongly supported by citing thinkers of the caliber of Quine, Russell and Wittgenstein, among others. Moreover, the defense is presented in a clear and explicit way, making evident the role played by relevance logic and diagrams. The chain of arguments unfolds as follows: (1) if the premises of an argument contain its conclusion, then the argument is relevantly valid; (2) if, in the act of diagramming all the premises of an argument, its conclusion is also diagrammed, then the premises contain the conclusion; (3) modus ponens, disjunctive syllogism and many other arguments

that violate the principle of variable sharing can be and have been diagrammed; and (4) therefore such arguments are relevantly valid.

After presenting his main line of argumentation, in the four initial chapters Dejnozka expounds the principal ideas that support his argument, one chapter for each item, always pointing to the differences between his views and those of Anderson and Belnap.

Dejnozka points out in chapter five that in modern classical logic, disjunctive syllogism and modus ponens are relevantly valid, but that according to the relevantist's conception of relevance, they are not. On this point, he takes into account several logicians, e.g., W. V. O. Quine, B. Russell, R. Diaz, P. Weingartner and G. Restall, among others, who make some type of accommodation between both views, and indicates how and where his interpretation differs from each of these.

In the next chapter, some objections to Dejnozka's thesis are listed, based on the works of Sylvan, Anderson–Belnap, Meyer, Griffin, and others. Such objections may be related to the inherent difficulties of modeling diagrams as proofs, the diagramming of the disjunctive syllogism and modus ponens, as well as to the standard notion of truth and, even more so, to the argument of Nicholas Griffin that relevance logic has a specific meaning, which does not include modern classical logic.

In the seventh chapter are presented the definitions, theses and constraints that embody the proposed reunion of relevant logic and diagrams defended in the previous chapters.

Finally, in the eighth and last chapter, Dejnozka presents his final conclusions, among which it is highlighted that, while Anderson and Belnap fail to state a positive theory of what relevance is, Wittgenstein, in contrast, positively and specifically states what truth-ground is. Moreover, Dejnozka discusses the question of what contains what in relevant entailment. While Anderson and Belnap think that the relata of the relevance relation ought to be intensional statements, Dejnozka defends the idea that the real relata of the relevance relation are truth-grounds of the atoms in the premises and conclusion. Nevertheless, he proposes that the truth-ground can be viewed as the basic component of a universal logic.

The book is an extended version of the paper of the same name published in *Logica Universalis*, published by Springer in 2010, and it is not written for beginners. There are many citations of other works, not only as corroborative elements to Dejnozka's thesis, but also as references to materials which are not covered in Dejnozka's exposition, making

the book not very self-contained. Two illustrative examples are the references to Jeffrey's trees and to the technical apparatus in diagrams considered by Shin. Consequently, to evaluate Dejnozka's thesis, it is necessary to have a solid knowledge of the work developed by Anderson and Belnap in *Entailment*, among other topics.

Dejnozka uses forceful language in defense of his positions, in many places sounding unfriendly and even bordering on rudeness. In Chapter 3, pp. 25, when citing a passage in which Alasdair Urquhart says that "The connection between projective geometry and relevance logic is simple and natural, and it makes sense to ask why it was not earlier investigated", Dejnozka remarks that "this is disingenuous". Another (but unfortunately not the last) example of excess occurs on p. 92, when, commenting Anderson and Belnap's reading of a position held by Russell, Dejnozka states that "If they did read Wittigenstein and Russell on this point, they did not grasp the significance of it".

We noticed a few typographical problems in the text, but in such cases the context made clear the intention of the author. As for the graphical aspects of the book, the layout is poor, and although it does not cause any problems for the reader, it does not hold his attention at first glance either.

Finally, a very positive aspect is the presence of many explanatory notes, placed at the end of the book, that shed light on the discussions in the text.

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