

On some variants of discussive logic

MAREK NASIENIEWSKI,

in collaboration with KRYSZYNA MRUCZEK-NASIENIEWSKA

DEPARTMENT OF LOGIC, INSTITUTE OF PHILOSOPHY, NICOLAUS COPERNICUS UNIVERSITY IN TORUŃ,
TORUŃ, POLAND

{MNASIEN, MRUCZEK}@UMK.PL

Jaśkowski's discussive logic was designed to express a logic and, in fact, a consequence relation that would not be explosive. It is achieved through the so-called discussive connectives of implication, conjunction, and equivalence. Intuitively, these connectives are used to simulate simple interactions between debaters in a discussion. Discussive implication is interpreted as meaning 'if anyone states that p , then q ' (see [1, p. 150, 1969]) or, in modal language, $\Diamond p \rightarrow q$. The later-introduced discussive conjunction (see [2]) can be interpreted as a connection or summary of a statement p made by the given participant and a statement q made by some participant. This resume is expressed by the debater formulating the sentence p . So, in the modal language, discussive conjunction $p \wedge^d q$ is read as $p \wedge \Diamond q$. Discussive formulas are translated into the modal language, and these translations can be called *internal* ones. Jaśkowski's model is completed by taking into consideration the point of view of an *external* observer. From this external perspective, all statements made during the discussion are only possible, which corresponds in the discussive approach to the use of the possibility operator. Thus, a formula including discussive connectives but also classically understood disjunction and negation is a thesis of Jaśkowski's discussive logic D_2 iff its 'internal' translation to the modal language, additionally preceded by the possibility operator, is a thesis of the normal modal logic $S5$.

We discuss selected variants of discussive logic determined by specific changes of the initial intuitive model. It can be obtained either by changing the initial modal logic (see e.g., [3]) that is used to interpret discussive connectives or by changing the object language (see e.g., [4]), for example, by enriching it with modal connectives that are not allowed in the original formulation of discussive logic. The latter approach can be connected with a slight change of the intuitive model of discussion.

Reference

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- [4] Mruczek-Nasieniewska, K., Nasieniewski, M., Pietruszczak, A., "A modal extension of Jaśkowski's discussive logic D_2 ", *Logic Journal of the IGPL* 2019, 27(4): 451–477. DOI: <https://doi.org/10.1093/jigpal/jzz014>