

Boolean Connexive Logic and Content Relationship

Luis Estrada-González¹ and Mateusz Klonowski²

¹ National Autonomous University of Mexico, Mexico City, Mexico

`loisayaxsegrob@comunidad.unam.mx`

² Nicolaus Copernicus University, Toruń, Poland

`mateusz.klonowski@umk.pl`

In this article, we would like to discuss the possibility of combining two types of logics, which are special cases of relating logic [2, 6]. The first one is Boolean connexive logic introduced by Jarmużek and Malinowski [3] (cf. [4, 5, 8, 10, 12]). The second one is content relationship logic proposed by Epstein [1] (cf. [6]).

Boolean connexive logic is based on the idea of minimal change of classical logic in such a way to receive a connexive system. The content relationship logic is an attempt to take into account the content relationship in the formal analysis of the conditional sentence.

Both logics are examples of Boolean logic with relating implication, but these two applications of relating logic cannot be combine in the straightforward way without getting trivial logic. Nonetheless by combining them in cautious way we are able to present an explanation of connexivity by means of a content relationship (cf. [7, 9, 11]).

References

- [1] R. L. Epstein. *The Semantic Foundations of Logic. Volume 1: Propositional Logics*. Springer Science+Business Media, 1990.
- [2] T. Jarmużek. Relating semantics as fine-grained semantics for intensional propositional logics. In *Logic in High Definition. Trends in Logical Semantics*, volume 56 of *Trends in Logic*, pages 13–30. Springer, 2021.
- [3] T. Jarmużek and J. Malinowski. Boolean connexive logics. Semantic and tableau approach. *Logic and Logical Philosophy*, 28:427–448, 2019a.
- [4] T. Jarmużek and J. Malinowski. Modal Boolean connexive logics. Semantic and tableau approach. *Bulletin of the Section of Logic*, 48:213–243, 2019b.
- [5] M. Klonowski. Axiomatization of some basic and modal boolean connexive logics. *Logica Universalis*, 15:517–536, 2021a.
- [6] M. Klonowski. History of relating logic. The origin and research directions. *Logic and Logical Philosophy*, 30:579–629, 2021b.
- [7] W. Lenzen. Leibniz’s laws of consistency and the philosophical foundations of connexive logic. *Logic and Logical Philosophy*, 28:537–551, 2019.
- [8] J. Malinowski and R. Palczewski. Relating semantics for connexive logic. In *Logic in High Definition. Trends in Logical Semantics*, volume 56 of *Trends in Logic*, pages 49–65. Springer, 2021.
- [9] E. Mares and F. Paoli. C. I. Lewis, E. J. Nelson, and the modern origins of connexive logic. *Organon F*, 26:405–426, 2019.
- [10] H. Omori and H. Wansing. Connexive logics. An overview and current trends. *Logic and Logical Philosophy*, 28:371–387, 2019.
- [11] C. Pizzi. Contenability and the logic of consequential implication. *Logic Journal of the IGPL*, 12:561–579, 2004.
- [12] H. Wansing. Connexive logic. <https://plato.stanford.edu/entries/logic-connexive/>, last viewed June 2022, 2006.