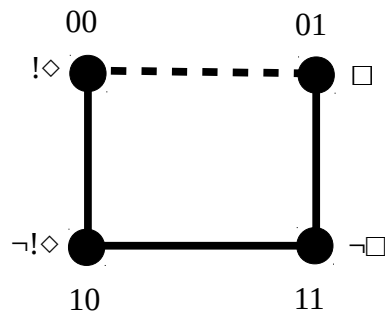


Chirality in Answered Modal Logic

by Daniel Fischer, Sven Nilsen

In this paper we show that Answered Modal Logic can be contracted to 3 equivalent ternary logics.

Answered Modal Logic^[1] has 3 contractible sides that form 3 equivalent ternary logics:



This shows that Answered Modal Logic has chirality, an idea suggested by Daniel Fischer.

Here are the 3 truth tables for AND^[2]:

11 \sim 01	10 \sim 11	00 \sim 10
00 00 \Rightarrow 00	00 00 \Rightarrow 00	00 00 \Rightarrow 00
00 01 \Rightarrow 00	00 01 \Rightarrow 00	00 01 \Rightarrow 00
00 10 \Rightarrow 00	00 10 \Rightarrow 00	00 11 \Rightarrow 00
01 00 \Rightarrow 00	01 00 \Rightarrow 00	01 00 \Rightarrow 00
01 01 \Rightarrow 01	01 01 \Rightarrow 01	01 01 \Rightarrow 01
01 10 \Rightarrow 10	01 10 \Rightarrow 10	01 11 \Rightarrow 11
10 00 \Rightarrow 00	10 00 \Rightarrow 00	11 00 \Rightarrow 00
10 01 \Rightarrow 10	10 01 \Rightarrow 10	11 01 \Rightarrow 11
10 10 \Rightarrow 10	10 10 \Rightarrow 10	11 11 \Rightarrow 11

It is easy to see that “11 \sim 01” has same truth table as “10 \sim 11”.

The truth table of “00 \sim 10” is constructed from the 2 others by replacing “10” with “11”.

References:

- [1] “Answered Modal Logic”
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/answered-modal-logic.pdf

- [2] “Truth Tables for Answered Modal Logic”
Sven Nilsen, 2020
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/truth-tables-for-answered-modal-logic.pdf