# Uberwrong Logic

by Sven Nilsen, 2022

*In this paper I present an isomorphic interpretation of Answered Modal Logic that combines impressiveness with correctness, which can be used as a more intuitive logic for reasoning. Philosphically in sense of Heidegger, this logic also shows an interpretation of authenticity.*

Uberwrong Logic is a 4-value logic defined as following:

> 00 = unimpressively wrong = wrong
> 01 = unimpressively correct = obvious
> 10 = impressively wrong = uberwrong
> 11 = impressively correct = smart

The word “uberwrong” is a made up to describe something impressively wrong.
Hence, the name of this logic comes from this new word.

Uberwrong Logic uses the same truth tables as Answered Modal Logic[1][2].

The basic intution that determines Uberwrong Logic is the following:

> uberwrong ∧ smart == uberwrong

For example, when composing[3] two systems, both which are impressive, but where one is wrong and the other is correct, one gets a “uberwrong” system, that is “impressively wrong”, because errors propagate by composition.

The rest of the truth table of AND is derived using common mathematical properties such as symmetry[4], idempotence[5], independent determinance of the second bit, and lost impressiveness. One gets the exact same truth table for AND as for Answered Modal Logic, hence one can translate back and forth to make reasoning easier.

There are two involution[6] operators in Uberwrong Logic:

| | | |
|---|---|---|
| noti | Flips impressiveness | \`¬\` in Answered Modal Logic |
| notc | Flips correctness | \`not\` in Answered Modal Logic |

Other truth tables follow from the definition of AND and NOTC (as NOT) to construct NAND[7]:

> nand <=> notc · and

Uberwrong Logic can be used to translate back and forth to Answered Modal Logic.
This is beneficial, since Answered Modal Logic is very hard to reason about and Uberwrong Logic is more intuitive.

Using the philosphy of Martin Heidegger[8], there are 16 authentic binary operators and 16 inauthentic binary operators. To convert the authenticity of some operator \`f\`, one can use the normal path[9] \`f[noti]\`. For example, \`and\` might be thought of as an authentic construction with the corresponding inauthentic construction \`and[noti]\`, which constructs impressiveness from anything by combining it with uberwrong statements. Noticably, smart statements do not have this property.

## 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

[3] "Object composition"
Wikipedia
https://en.wikipedia.org/wiki/Object_composition

[4] "Symmetric relation"
Wikipedia
https://en.wikipedia.org/wiki/Symmetric_relation

[5] "Idempotence"
Wikipedia
https://en.wikipedia.org/wiki/Idempotence

[6] "Involution (mathematics)"
Wikipedia
https://en.wikipedia.org/wiki/Involution_(mathematics)

[7] "NAND gate"
Wikipedia
https://en.wikipedia.org/wiki/NAND_gate

[8] "Martin Heidegger"
Wikipedia
https://en.wikipedia.org/wiki/Martin_Heidegger

[9] "Normal Paths"
Sven Nilsen, 2019
https://github.com/advancedresearch/path_semantics/blob/master/papers-wip/normal-paths.pdf