Path Semantical Contravariant Quality

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In this paper I introduce a relation that represents path semantical contravariant quality, a binary operator based on path semantical quality that is Seshatic biased in the left argument and Platonic biased in the right argument. This relation is the foundation for Joker Calculus.

Path Semantical Contravariant Quality is defined as following:

$$a \neg\sim\sim b \qquad pscq(a, b) \qquad <=> \qquad (a == b) \land \neg\sim a \land \sim b$$

Here, unary `~` means `qubit`[1].

The corresponding reverse operator is Reverse Contravariant Quality:

$$a \sim\sim\neg b \qquad psrcq(a, b) \qquad <=> \qquad (a == b) \land \sim a \land \neg\sim b$$

Contravariant Quality is a kind of "diagonal" between path semantical quality[2] and aquality[3]. Like quality and aquality, Contravariant Quality implies equality.

In the paper "Joker Calculus"[4], the grammar and normalization rules for Open and Closed variants of Joker Calculus were described. At the time of writing the paper, the authors did not know the precise relation between path semantical quality and Joker Calculus. It is now understood that the foundation of Joker Calculus is given by Contravariant Quality.

Contravariant Quality is the foundation of Joker Calculus because it models how two terms can be "equal" in a propositional sense while being biased toward two different perspectives respectively. For any two propositions `a` and `b`, one can use Joker Calculus to talk about new combinations of perspectives when `a ¬~~ b` holds.

In the left argument, one has Seshatism[5] (or Seshatic bias):

$$a \neg\sim\sim b \qquad => \qquad \neg(a \sim\sim a)$$

In the right argument, one has Platonism[6] (or Platonic bias):

$$a \neg\sim\sim b \qquad => \qquad b \sim\sim b$$

One can express Seshatism vs Platonism in Joker Calculus as following:

$$Seshatism \neg\sim\sim Platonism$$

From the aquality[3] paper it is known that the asymmetry between Seshatism and Platonism appears by introducing the core axiom of path semantics. However, the paper also argues that by introducing an "acore axiom" (a version of the core axiom where quality is swapped with aquality) one can restore the symmetry. Therefore, even Seshatism vs Platonism generate very different perspectives, there are ways of treated them as being completely symmetric. This explains why the rules of Joker Calculus are symmetric for Seshatism vs Platonism.

References:

[1]   "Path Semantical Qubit"
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        https://github.com/advancedresearch/path_semantics/blob/master/papers-wip2/path-semantical-qubit.pdf

[2]   "Path Semantical Quality"
        Sven Nilsen, 2021
        https://github.com/advancedresearch/path_semantics/blob/master/papers-wip2/path-semantical-quality.pdf

[3]   "Path Semantical Aquality"
        Sven Nilsen, 2022
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[4]   "Joker Calculus"
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        https://github.com/advancedresearch/path_semantics/blob/master/papers-wip2/joker-calculus.pdf

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[6]   "Platonism in Metaphysics"
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