Square of Opposition Meth8 corrected

The modern revision of the square of opposition is not validated as tautologous by the Meth8 logic model checker, as based on system variant VŁ4. Consequently we redefine the square so that it is validated as true my Meth8. Instead of definientia using implication for universal terms or conjunction for existential terms, we adopt the equivalent connective for all terms. The modal modifiers necessity and possibility map quantifiers as applying to the entire terms rather than to the antecedent within the terms.

The Meth8 symbols are: ~ Negation ; \ Nand ; > Imply ; + Or ; # modal necessity for universal quantifier ; % modal possibilty for existential quantifier ; ? unspecified connective.

Sources		* Modern Revision		** Meth8 Correction	
Type	Definientia	Script	Valid as	Script	Valid as
Corner	A	#s> p		#(s= p)	
	E	#s>~p		#(s=~p)	
	I	%s&p		%(s= p)	
	O	%s&~p		%(s=~p)	
Contraries	AE	(#s>p) + (#s>~p)	A + E	#(s= p) \ #(s=~p)	A \ E
Subalterns	AI	(#s>p) ? (%s&p)		#(s= p) > %(s= p)	A > I
Contradictories	AO	(#s>p) + (%s&~p)	A + O	#(s= p) \ %(s=~p)	A \ O
Contradictories	EI	(#s>~p) + (%s&p)	E + I	#(s=~p) \ %(s= p)	E \ I
Subalterns	EO	(#s>~p) ? (%s&~p)		#(s=~p) > %(s=~p)	E > O
Subcontraries	IO	(%s&p) \ (%s&~p)	I \ O	%(s= p) + %(s=~p)	I + O

* The quantifier may refer to the entire term as #(p=q) or to the antecedent of the term as (#p=q). In Meth8 there is a difference. We adopt the latter because it returns more validated connectives. For example from the traditional square: #(A?E), #(I?O) versus (A+E), (I\O).

The modern revision of the square of opposition is not validated as true by the Meth8 logic checker in five models for all expressions. This leads us to consider that any logic system based on the square of opposition is spurious. What follows then is that a first order predicate logic based on the square of opposition is now suspicious.

** The Meth8 validated square of opposition redefines A, E, I, O to match the words more clearly. For example on A, "All S is P" is mapped as "#(s=p)", not as in the note above with "#s=p" because the connective of equivalence is stricter than that of implication and consistent for all definiens. By changing the connective in the term from implication or conjunction to equivalence makes the Meth8 validated square of opposition suitable as a basis for other logics such as first order predicate logic.

We note the validating connectives for the edges on the square are: \ Nand for the Contraries and Contradictories; > Imply for the Subalterns; and + Or for the Subcontraries.

References

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