Notation for Truth Functions and More

I'm going to use Jan Lukasiewicz's Polish notation for truth functions. I want to avoid giving "meaning" to punctuation. Punctuation is not needed with his notation.

From his Elements of Mathematical Logic:

Np is not p (p. 23)
Cpq is p only if q (p. 25)

After some confusion, I realized I must state the conditions required for beliefs or assertions to happen. All other truth functions can be defined in terms of these two. Note these must be taken as relations between facts – not merely linguistic. If one tries to eliminate the corresponding facts, there is nothing to make the linguistic expressions true or false. The relations are not defined, but there must be non-linguistic facts to make the linguistic expressions true or false. There are also ideas corresponding to the facts – for minds which understand.

Apq is CNpq (p or q) (p. 33)
Kpq is NCpNq (p and q) (p. 34)
Mpq is KCpqCqp (p equ q) — I added this one.

Some relations which are not truth-functional are:
Lp is p is necessary.
LCpq is strict implication
B is the psychological relation between ideas of belief.
BB is the more ordinary (defined) relation of belief.
|- is the assertion sign.
True|- indicates a true assertion
False|- indicates a false assertion.
Say is for says
E is for existential quantification – always followed by one variable.
N E x N is for universal quantification – where x is a variable

For a person A at time T: BB P/2 x y =df.

E iP/2 E ix E iy
K K K
B/3 iP/2 ix iy
S/2 iP/2 P/2
S/2 ix x
S/2 y y

For person A at time T, |- wP/2 wx wy = df.

E iP/2 E ix E iy
K K K
Say/3 wP/2 wx wy
R/2 wP/2 iP/2

R/2 wx ix
R/2 wy iy

The assertion is honest if, in addition,
B/3 iP/2 ix iy

Next, consider negation: For person A at time T, |- N wP/2 wx wy= df.
E iN E iP/2 E ix E iy
K K K K
Say/4 wN wP/2 wx wy
R/2 wN iN
R/2 wP iP/2
R/2 wx ix
R/2 wy iy

The assertion is honest if, in addition,
B/3 iN iP/2 ix iy

Other cases work similarly.
Note this does not imply people must think logically.
It is possible (logically) one could believe both p and Np, although they would, logically, be mistaken.

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