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T e e s i d

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ON OPERATIONS WITH good AND bad

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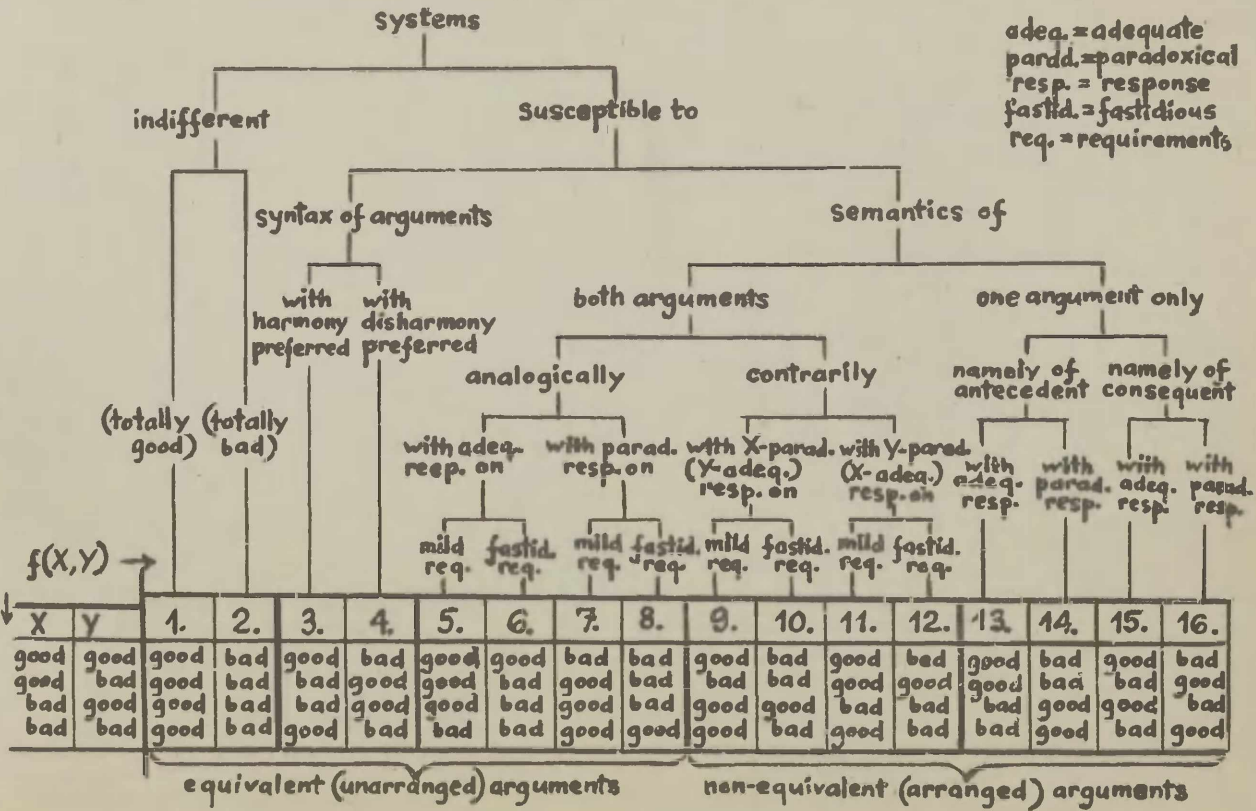
In bivalent truth logic, as a rule, only 5-7 of all possible 16 functions of the binary variable (in the case of two arguments) are considered as sufficiently interpretable and used as logical operations. However, if we interpret these functions not in propositional (true -wrong), but in axiologic (good-bad) terms, it seems to be possible to provide interpretations of far greater number, without good reason to prefer just those among them which are used in truth logic.

Let X and Y be some variables. We may conceive them as verbally described facts, or, simply, as some factual or imaginable events or situations which can be labelled with qualifiers good or bad. With (X,Y) we mark a complex situation or a chain of events consisting of two partial situations resp. events X and Y. The whole set of possible axiologic X,Y-functions with a conceivable classification of them is rendered in the scheme below. In the case of functions of equivalent arguments (1).... (8), in principle, no semantic connection between X and Y is demanded. In other cases (9)....(16), on the contrary, we must regard X as "antecedent" and Y as "consequent", i.e., interpret them as, e.g., temporally arranged (X the earlier, Y the later), or causally arranged (as deed and result, or action and reaction, or intendable and receivable, etc.), or pragmatically non-equivalent events or situations (e.g., as "neighbour's" status and evaluator's own status, or the action of 'I' towards 'world' and the reaction of 'world' towards 'I' respectively, etc.). Restrictions of that kind may also be re-


Systems
indifferent
Susceptible to
adeq. = adequate
pardd. = paradoxical
resp. = response
fastid. = fastidious
req. = requirements
(totally good)
(totally bad)
syntax of arguments
semantics of
with harmony preferred
with disharmony preferred
both arguments
one argument only
analogically
contrarily
namely of antecedent
namely of consequent
with adeq. resp. on
with parad. resp. on
with X-parad. (Y-adeq.) resp. on
with Y-parad. (X-adeq.) resp. on
with adeq. resp.
with parad. resp.
with adeq. resp.
with parad. resp.
mild req.
fastid. req.
f(X,Y)
X
Y
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.
good good good bad good bad good good bad bad good bad good bad good bad good bad
good bad good bad bad good good bad good bad bad good bad good bad bad good bad good
bad good good bad bad good good bad good bad good good bad bad good good bad bad good
bad bad good bad good bad bad bad good good good bad good bad bad good bad good good
equivalent (unarranged) arguments
non-equivalent (arranged) arguments

tained in the interpretations of functions (1)....(8).

We attempt, now, to demonstrate that the functions under discussion can be interpreted as different conceivable attitude systems of different humans towards this kind of complex situations or chains of events.

1. System (2).

X	Y	f(X,Y)
good	good	bad
good	bad	bad
bad	good	bad
bad	bad	bad

The logic of absolute pessimism or morbidly critical attitude towards real happenings. Psychically paradoxical response in case of X good, Y good → f(X,Y) bad may be interpreted as, e.g., fear of deterioration of a perfectly good situation (cf. here and in system (1) the anecdote about the man who smiled when it was raining and cried when the weather was splendid). Resembles to contradiction in truth logic.

2. System (1).

X	Y	f(X,Y)
good	good	good
good	bad	good
bad	good	good
bad	bad	good

The logic of absolute optimism or entire absence of criticality, contrary to system (2). Paradoxical case X bad, Y bad → f(X,Y) good may be interpreted as hope of improving a totally bad situation, or, if we conceive X and Y as causally related, as delight in experience gained from a painful lesson, etc. Reminds of tautology in truth logic.

In recent interpretations we regarded systems (2) and (1) as extreme, paradoxical extensions of more rational and moderate systems (6) and (5) resp. They might also be explained as pathological, permanently depressive or permanently gay emotional states where any adequate reaction of the person to reality is excluded. In this

case, however , it is also questionable how such a person is able to evaluate even the events X and Y separately.

3. System (6).

X	Y	f(X.Y)
good	good	good
good	bad	bad
bad	good	bad
bad	bad	bad

The logic of rational pessimism (or minimal optimism), or fastidiously critical attitude towards the world. Regards as good only those situations which are good in both (all) component situations, or events where both actions and results are good, etc. Reminds of conjunction in truth logic.

4. System (5).

X	Y	f(X.Y)
good	good	good
good	bad	good
bad	good	good
bad	bad	bad

The logic of mild optimism, or minimal pessimism or criticality, identical with system (6) in attitude towards totally good and totally bad situations (events) and differing from it in case of partially good and partially bad situations (events). Reminds of disjunction in truth logic.

5. System (7).

X	Y	f(X.Y)
good	good	bad
good	bad	good
bad	good	good
bad	bad	good

The logic of moderate evil, contrary to system (6). Regards as good those events or situations which include at least something bad and does not tolerate perfectly good states and happenings. Reminds of Sheffer's stroke in truth logic.

6.System (8).

X	Y	f(X,Y)
good	good	bad
good	bad	bad
bad	good	bad
bad	bad	good

The logic of absolute evil, contrary to system (5): does not tolerate in the least good, only totally bad situations and events are acceptable and pleasant.

7. System (3).

X	Y	f(X,Y)
good	good	good
good	bad	bad
bad	good	bad
bad	bad	good

The logic of statics or harmony, considers as good only these situations which are internally harmonious: or both good or both bad. If applied to a chain of causally connected events it may be titled also as logic of justice. Reminds of equivalence in truth logic.

8. System (4).

X	Y	f(X,Y)
good	good	bad
good	bad	good
bad	good	good
bad	bad	bad

The logic of dynamics or disharmony, contrary to system (3). Regards as good only internally contradictory situations. In case of connected events may also be interpreted as logic of principal unjustice. Reminds of anti-equivalence in truth logic.

The following eight systems, namely (13) ....(16) and (9)...(12), where arguments are obligatorily distinguished, non-equivalent, can be interpreted only with certain restrictions, as already noted above. Below we present two of them:

(i)X = the action of the person towards the world,
Y = the result of this action from the standpoint of the actor

(temporal-causal connection of X and Y, the evaluating subject may be the actor himself or somebody standing by);

(ii)X = the status of "neighbour",
Y = the status of 'I'
(the evaluating subject is, in this case, obligatorily the same 'I').

In the four following systems (13)....(16) , the axiologic value of (X,Y) depends on the value of one argument (either X or Y) only.

9. System (13).

X	Y	f(X.Y)
good	good	good
good	bad	good
bad	good	bad
bad	bad	bad

The X-orientated attitude with adequate response in (X,Y), absolutely indifferent to values of Y.
In both subinterpretations (i) and (ii) it can be called the logic of self-sacrifice, martyrdom and altruism: the result is taken for good if the action is good (i), or if the status of "neighbour" is good (ii), no matter what are the results of the action for the actor himself (i), or what is the evaluator's own status (ii).

10. System (14).

X	Y	f(X.Y)
good	good	bad
good	bad	bad
bad	good	good
bad	bad	good

The X-orientated system with paradoxical response, contrary to system (13). In subinterpretation (i), it is the logic of "self-denying" evil: an event is qualified as good if the action towards the world has been bad. In subinterpretation (ii) it is the typical logic of envy and malicious joy: the situation is good if the "neighbour's" status is bad, and vice versa, without giving any importance to the actor's (i) or evaluator's (ii) own status.

11. System (15).

X	Y	f(X,Y)
good	good	good
good	bad	bad
bad	good	good
bad	bad	bad

The Y-orientated attitude with adequate response, the typical logic of cynical pragmatism and egoism: every action is good if it brings a good result for the actor (i), or if the evaluator's own status is good (ii). It can be interpreted also as a "happy end" attitude.

12. System (16).

X	Y	f(X,Y)
good	good	bad
good	bad	good
bad	good	bad
bad	bad	good

The Y-orientated attitude with paradoxical response, contrary to system (15). It may be interpreted as masochistic logic: only this is perceived as good which results in bad (i), or the whole situation is perceived as good only if the evaluator's own status is bad (ii).

The following four systems (9)...(12) may be conceived as disjunctive or conjunctive (mild or fastidious) combinations of systems (14) with (15) and (13) with (16) respectively.

13. System (9).

X	Y	f(X,Y)
good	good	good
good	bad	bad
bad	good	good
bad	bad	bad

The attitude orientated adequately towards Y and paradoxically towards X. Represents a moderate modification of a very natural and wide-spread combination of evil and egoism: the chain of events gets appraisal good if the actor has done something bad to the world , or has obtained some good result, or both simultaneously (i); the situation is good if the evaluator's own status is

good, or the "neighbour's" status is bad, or both simultaneously (ii). Reminds of implication in truth logic.

14. System (10).

X	Y	f(X,Y)
good	good	bad
good	bad	bad
bad	good	good
bad	bad	bad

Fastidious modification of system (9). Only such events are good where the action is bad and the result good (i); only such situations are qualified as good where the evaluator's own status is good and the "neighbour's" status is simultaneously bad.

15. System (11).

X	Y	f(X,Y)
good	good	good
good	bad	good
bad	good	bad
bad	bad	good

The attitude orientated towards X adequately and towards Y paradoxically, contrary to system (10). It may be interpreted as a moderate combination of altruism and masochism, practically, a totally irreal view of life.

16. System (12).

X	Y	f(X,Y)
good	good	bad
good	bad	good
bad	good	bad
bad	bad	bad

Fastidious modification of system (11), contrary to system (9). Even more refractory to any rational interpretation than (11).