DALE ON THE TRANSITIVITY OF «IF-THEN»

John Bryant

In a recent article [2], A.J. Dale has claimed that the thesis that hypotheticals are transitive (i.e., that «if p then q and if q then r» entails «if p then r») is contradictory to the thesis that the antecedent of a hypothetical must be relevant to the consequent. In an attempt to prove this, Dale gives the following train of reasoning:

(1) If I knock this typewriter off the desk then it will fall.
(2) If it falls then it is heavier than air.
(3) Conclusion: If I knock this typewriter off the desk then it is heavier than air.

As it happens, however, (1)-(3) is not valid. This can be seen more clearly if we change the antecedent of (2) to make it equivalent to the consequent of (1) (which of course it was supposed to have been in the first place):

(2') If it will fall, then it is heavier than air.
(2') however, is clearly a shortened form of
(2") If it will fall when it is knocked off the desk, then it is heavier than air.

Unfortunately for Dale, however, the argument (1)-(2")-(3), although not valid, is also not transitive. (It may be noted, however, that from (1) and (2") may be derived

(3*) If I knock this typewriter off the desk and it falls (i.e., if I knock this typewriter off the desk and if it will fall when it is knocked off the desk), then it is heavier than air.

which of course is not equivalent to (3)). The point to be made is that (2) is equivocal between «If it falls under certain specified conditions (e.g., being knocked off the desk)...» and «If it falls at all times and in all places...» Clearly the former is the proper interpretation, and this is why Dale's example is impotent.

Now as a further attempt to demonstrate problems with transitivity and relevance, Dale gives the following train of reasoning:
(4) If Jones passes his maths (sic) degree, then he knows at least the elementary propositions of arithmetic.
(5) If he knows the elementary propositions of arithmetic, then he knows that $2 + 2 = 4$.
(6) If he knows that $2 + 2 = 4$ then $2 + 2 = 4$.
(7) Conclusion: If Jones passes his maths degree then $2 + 2 = 4$.

Now the critical point about the argument (4)-(7) is evidently whether we can pass from a statement «A knows p» to the statement «p (is true)». Many epistemologists have of course held (in effect) that such a passage is acceptable, since p's being true would seem to be one of the necessary conditions for A's knowing p, since it does not seem reasonable to say both that A knows p and that p is false. However, a contrary position on this matter is possible if one believes that *certain* knowledge is impossible, and consequently that the only proper use of the phrase «A knows p» is to indicate that A *strongly believes* p. Since I do in fact take this latter position, I hold that (6) is unacceptable and thus that (4)-(7) is invalid. (1) Furthermore, I take the undesirable result of (4)-(7) as a confirmation that the passage from «A knows p» to «p» is not to be tolerated.

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(1) There is really a deeper question here, namely, the problem of the distinction of objective versus subjective truth, which I have discussed in [1], chapter 12. To be specific, it is heuristically convenient for us to think of statements as being objectively true or false, but in fact we cannot know for certain (so I am assuming) whether a given statement has a given truth value. We must instead rely on the various subjective beliefs of individuals to produce (in some sense) an «approximation» to the supposed objective truth value — if everybody agrees that something is (subjectively) true or false then we say it is (objectively) true or false, respectively, and otherwise not. The passage from «A knows p» to «p» is thus seen to be the passage from subjective to objective truth, a passage which is at best tenuous.

REFERENCES

1. BRYANT, John, *Systems Theory and Scientific Philosophy*, Gordon and Breach, forthcoming.
2. DALE, A.J., «The Transitivity of 'If, Then'», *Logique et Analyse* 15 (Sept. - Dec. 1972) p. 439f.