

Because of the above paradoxes, it is difficult to see how Dr. Smith's system can be accepted as the equivalent of Aristotelian logic or how therefore it contributes to the establishment of the validity of that logic.

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Dear Sir:

I am glad to reply to Dr. Henle's sympathetic criticism because, where issues can be so tightly drawn as in logic, there is great hope of coming to an understanding.

Dr. Henle's statement of the "law of contradiction," because of its ambiguity, leaves me somewhat puzzled. He states it thus:

"No proposition of the form 'S is both P and non-P' can be true."

- (1) If S is a class with members the law holds,
- (2) If S is an empty class the law fails,
- (3) If S is a singular term (which seems to be implied by the reference to Aristotle) the meaning of the copula has changed to what is currently represented by ϵ .

In this last case the criticism would be irrelevant. Moreover the pretended cases, No entities are red and not red, No chairs are red and not red, are not instances of the law as stated.

Whether in the passage which Dr. Henle refers to, Aristotle has in mind a "law of contradiction" is, to say the least, problematical. At any rate the usual word for contradiction is not used. I quote the *Organon* in the Latin (*Analyticorum Post. Lib. I, Cap. II, 12*) because the word comes to us through the Latin:

"*Contradictio autem est oppositio, cuius non est medium secundum ipsam. Pars vero contradictionis illa, quae aliquid de aliquo (enuntiat) est affirmatio; quae autem aliquid ab aliquo (removet) negatio.*"

The form of the "law" which Dr. Henle would have us accept may be used by writers who tacitly assume that the classes in question are not empty. In the original passage (*Met. 1006 a*) the reference is to a singular term, a *something* which cannot both be and not be (again a different use of the copula).

If the law of contradiction be stated:

P (is true) and P (is untrue) is impossible,

What is P and non-P is non-existent,

it does not break down on my interpretation of the categorical forms; and similarly for the law of excluded middle:

Everything (in the universe) is either P or non-P.

In introducing singular terms Dr. Henle has made the universe of discourse ambiguous (see Dr. Singer's article, this Journal, Vol. I, No. 3). This chair is red and not red, this chair is not both red and not red, would be expressed in current notation:

$C \in O$ (is true), $C \notin O$ (is untrue),

and these we have not asserted to be true together.

If the class chairs has members and is not the universe, then the answer to Dr. Henle's question:

"Which chairs are both red and not red?"

is: "All the non-existent ones." Perhaps if "Some chairs are red and not red" be put in the equivalent form, "Some chairs do not exist," it will appear commonsensible enough.

If Dr. Henle feels that such replies are repugnant to Common Sense, we reply: So is the denial of subalternation repugnant to Common Sense; and if we are to save this for Common Sense we shall have to give up the other. Common Sense and Mother Wit will have to be prepared to make sacrifices in the interest of science when they contradict themselves.

Dr. Henle agrees that my interpretation of the universal affirmative retains the traditional doctrine of the syllogism, immediate inference and the square of opposition, and we have shown that there is no violation of the laws of contradiction and excluded middle properly stated. We think this suffices and justifies us in terming the generalized system Aristotelian.

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