THE LOGIC OF DIALECTICS

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Most non-Hegelian philosophers have picked up articles by Hegelian scholars hoping to find a lucid explanation of why anyone in his or her right mind would claim that somehow contradiction is a correct mode of thought, or if it is not, why Hegel said that it is, or just what Hegel did say, etc., only to find that the explanation is as unclear as the original. This discussion will attempt to show that the logic of dialectics is really quite simple. Hence most of our difficulty with Hegel lies in his mode of expression. At any rate, contradiction will be confronted directly, and Hegel will help us. His system as such will not be formalized; rather, logical techniques will be employed to represent the first completed movement of the *Logic* with the hope that this can serve as a quasi-model for the other movements. But before this assault on the Hegelian citadel can be attempted, it is advisable to reconnoiter.

For example, Professor Findlay, who has an excellent reputation both as a scholar and as a devotee of Hegelian thought, warns that

> If one starts by thinking Dialectic is easy to characterize, one often ends by doubting whether it is a method at all, whether any general account can be given of it, whether it is not simply a name covering any and every of the ways in which Hegel argues.[1]

Maurice Cornforth, a Marxist scholar of established repute, is equally cautious of ready optimism. He is dissatisfied with the ways the laws of dialectics have been explained despite the effort expended on them by Engels. Incidentally, in Engel's opinion, these laws—which are three in number—"ought to be as clear as noonday." He lists the laws (which he got from Hegel) as being (1) change of quantity into quality, (2) interpenetration of opposites, and (3) negation of negation. Nonetheless, Cornforth seems regretful that Marx himself never found time to write on the subject, through that might not have been of much help. Anyway, so far as he is concerned, more clarification is needed, especially of the third law.[2] But a character in Solzhenitsyn's novel, *Full Circle,* expresses even greater frustration. In an argument with a fellow "zek," it is decided that Engels' laws are useless since they are of no help in ascertaining the direction of a process of development or in making a prediction, whereupon he exclaims, "Then what in the hell are they for?" The urgency of this question demands a partial answer at the very least.

Dialectics, of course, has been of considerable use to certain persons,

some who have been world-significant. Without dialectics, Hegel could hardly have formulated his system, and without his system it is doubtful that Marx and Engels would have received their stringent training in dialectic thought. Actually, the very heart of Marx's interpretation of history depends on the dialectical theory of class struggle. The latter concept, moreoever, is essential to his "scientific" sociology, including the theory of ideology that emerged from it. On the practical side, it is again doubtful that Lenin would have been so quick to plan a second revolution within the framework of the February Revolution of 1917, without his dialectical skills; only he from Switzerland and Trotsky from America could discern the possibility of "negating" and seizing the power that had "negated" the rule of the Tsar if quick and decisive action were taken. Mao-Tse-Tung, a comparable man of action, emphatically declares in his famous article, "On Contradiction," that a stress on the particularlity of contradiction is vital "for guiding the course of revolutionary practice."[3] And so enamored have the Chinese become with dialectics that they pay homage to it (and Chairman Mao) in a popular pamphlet[4] that shows how the people have been able to overcome contradictions in transportation, mechanics, agriculture, etc., and to utilize their knowledge of them in fields as diverse as weather forecasting, orthopedic surgery, and delivery of the mail.

Apart from coerced or sycophantic interests in dialectics, paradox and contradiction have certainly had a fascination of their own for centuries. The supposedly "official doctrine" in Western science has been to reject contradiction out of hand, but perhaps there is sufficient disinterested curiosity to justify another look at Hegel's version of the second and third laws of dialectics. The first law will not be treated in this discussion since it does not pertain directly to the topic.

Hegel believes that the second law begins to operate quite "naturally" in thought. In mentioning the Kantian antimonies, he remarks that their problem

> is no mere subjective piece of work oscillating between one set of grounds and another; it really serves to show that every abstract proposition of understanding, taken precisely as it is given, naturally veers round into its opposite.[5]

It is certainly true that he allows his own statement to *veer* into their opposites at every available opportunity. Even the traditional laws of thought, being abstract, are not immune: for instance, those who formulate the law of identity as 'A = A' have nothing more than an "empty tautology" that "leads no further."

> Those therefore are stranded upon empty Identity who take it to be a truth in itself, and are in the habit of repeating that Identity is not Variety, but that Identity and Variety are different. They do not see that they are themselves here saying that Identity is *different,* for they say that Identity is different from Variety; and since this must at the same time be admitted to be the nature of Identity, their assertion implies that Identity has the quality of being different not externally but in its very nature.[6]

For us, of course, this kind of "veering," viz., that someone might think (or invariably does think) of identity as being different from variety, is psychologically rather than logically relevant to the meaning of identity. But for Hegel it is logically relevant, since abstract propositions tend toward emptiness and falsity, whereas truth and concretion intertwine within an inclusive context. Thus an abstract proposition must veer into its opposite in order to establish any degree of truth and meaning. Even those who accept 'A = A' as a meaningful truth start the veering process in spite of themselves. A proposition is still distinguished from its contradiction, but both proposition and opposite are retained in context.

An excellent example of the significance of context comes, oddly enough, from the history of logic. Everyone will recall that Aristotle resorted to "squares" or tables of opposition, i.e., to logical contexts, to clarify his concepts of "contradiction," "contrariety," etc. He was wise in so doing, for sometimes the context is of considerable benefit in establishing the relationship between propositions as the following instance shows. H. Reichenbach, who justifiably has a distinguished reputation as a logician and philosopher of science, in one place offers the formula,

$$-(a \longrightarrow b) \,\&\, -(b \longrightarrow a), \tag{1}$$

as a contradiction which does not "show immediately" its "character of being the negation of a tautology."[7] If he had but entertained the possibility that Aristotle's context also applies to the propositions of truth functional logic, he might have seen that when the components of (1) are undenied and jointly asserted, they are subcontraries and cannot constitute a tautology; hence, when they are denied, they are contraries. The result of this denial is, when rearranged for symmetry, '(a & —b) & (—a & b)'. This analysis can be confirmed by a truth table. Incidentally, this is not the only place in Reichenbach's text that the property of contradiction is imputed to contrariety.

Thus, Reichenbach's misinterpretation is instructive; a context of meaning is inescapable even for the empty logic of the present. It is understandable, then, why Hegel would not dream of presenting an idea without exploring the context in which it is embedded; he does this chiefly by allowing the dialectic to lead thought into opposition. In one place he tells

us in amazingly modern terms how opposition unfolds:

> If Identity is viewed as diverse from Difference,
> all that we have in this way is but Difference . . . (*Logic of Hegel,* p. 215).

If the antecedent and consequent of this hypothetical statement can be replaced by 'identity is not difference' and 'identity is difference' then the compound itself can be represented by the conditional propositional form,

$$-D \longrightarrow D. \qquad (2)$$

Also, since (2) is equivalent to or "is but D," the *veering* into the opposite of propositions seems readily adaptable to the propositional calculus. 'D' also changes into '—D' for the dialectician, i.e.,

$$D \longrightarrow -D; \qquad (3)$$

and, there is, of course, an "interpenetration of opposites,"

$$D \longleftrightarrow -D, \qquad (4)$$

according to the second law.

That (2) through (4) exactly parallel the beginning movement of thought in the *Logic* can now be shown. Thought, Hegel thinks, begins with bare, abstract 'Being', but such featureless being is indescribable: it is 'Nothing', that is, 'Being $\longrightarrow$ Nothing'. But "Nothing, if it be . . . immediate to itself is . . . the same as Being is" (*Logic of Hegel,* p. 163), or 'Nothing $\longrightarrow$ Being'. The movements thus consummated are similar to those in (2) and (3). Now, let us note that what follows is the state of Becoming:

> In Being then we have Nothing, and in Nothing Being: But this Being which does not lose itself in Nothing is Becoming (*Logic of Hegel,* p. 167).

Here, we have a clear statement of the mutual interpenetration of opposites, or 'Being $\longleftrightarrow$ Nothing', or the state of 'Becoming' which is the counterpart of (4). 'Becoming' contains a contradiction and at the same time an unity, for 'to become' is the union of 'to be' and 'not to be'. It is a contradiction because any disequivalence, '$(p \longrightarrow -p)$ & $(-p \longrightarrow p)$' disguised as an equivalence, reduces to 'p & —p'. Hegel admits to it, and at the same moment gives us the final step in the first movement:

> In Becoming the Being which is one with Nothing, and the Nothing which is one with Being, are only vanishing factors; they are and they are not. Thus by its inherent contradiction Becoming collapses into the unity into which the two elements are absorbed. The result is accordingly Being Determinate (Being there and so) (*Logic of Hegel,* p. 169).

The conditional form of this final movement is 'Becoming $\longrightarrow$ Determinate Being' in which the "contradiction vanishes," that is, the negation is negated, and the 'Becoming' ceases.

A summary of the entire first movement is now possible:

(5)

1. Being $\longrightarrow$ Nothing (i.e., not-Being)
2. Nothing $\longrightarrow$ Being
3. (Being $\longleftrightarrow$ Nothing) (i.e., Becoming)
4. Becoming $\longrightarrow$ Determinate Being (i.e., not-Becoming)
5. Determinate Being.

The logical caricature of (5) is

(6)

1. $p \longrightarrow -p$
2. $-p \longrightarrow p$
3. $p \longleftrightarrow -p$ $[\longleftrightarrow (p \,\&\, -p)]$
4. $(p \longleftrightarrow -p) \longrightarrow -(p \longleftrightarrow -p)$
5. $-(p \longleftrightarrow -p)$ $[\longleftrightarrow (p \vee -p)]$.

(6) is called a caricature, not because the logic is faulty, but because its very abstractness condemns it for Hegel. However, it is extremely useful in showing more clearly what is really involved in a dialectical movement. Those who might believe that the triad of thesis, antithesis, and synthesis is satisfied by 'Being, Nothing, Becoming' are doomed to be disappointed. The traditional conception is that the antithesis constitutes the first contradiction of a dialectical movement and the synthesis negates that contradiction. (6.3), the counterpart of (5.3), which is the stage of 'Becoming', is both a contradiction and a synthesis. The resolution of this contradiction, or the "negation of the negation" begins in (6.4) and is shown as completed in (6.5).

Inspection of the two models, therefore, makes it clear beyond question that (5) is superior to (6) in the representation *of what Hegel actually says.* It is obvious, for example, that 'Determinate Being' in (5.5) is different from the featureless 'Being' of (5.1). Yet, the 'p' in (6.5) is the same as the 'p' in (6.1). It should also be noted that 'p v —p' is quite adequate for indicating the resolution of the contradiction, '$p \longleftrightarrow -p$', but inadequate for representing the triumph of 'Determinate Being' over 'Nothing'. (*Logic of*

Hegel, p. 170). Hence, an "interpreted" model, such as (5), may be of considerable help in taking the mystery and anxiety out of Hegelian "double-talk."

In using the notation of the propositional calculus as in (5), one should not forget that words and phrases are allowed to stand for sentences or congeries of sentences which in a more subtle logical construction might require the use of multi-place universal and existential quantifiers. One should be cautious, however, in going very far in that direction because of Hegel's vehement denunciation of abstract logic. In my estimation, symbolic structures should be kept as simple as possible.

Understandably, a number of problems connected with dialectics remain that cannot be discussed here. However, the opening query, asking how anyone can maintain sanity and insist that contradiction has its proper place in thought, has now been partly answered. Hegel insists that it is our human habit of abstraction that introduces the contradiction, but it is the dialectical movement itself which resolves it. Moreover, the charge that introducing contradiction into a system provides the formal means for proving any proposition whatever is pointless when directed at Hegel. The charge is true, of course, for abstract calculi; but what shows up in his system is what unfolds in the dialectic, not some chance, arbitrary or unrelated assertion. From the stage of 'Becoming' onward, the terms of his dialectic are concrete; and the contradictions become, more and more, cases such as those referred to by Spinoza in his famous declaration: "*Omnis determinatio est negatio*"—which is quoted approvingly by Hegel and Engels. So, unless the dialectician is a complete charlatan, it is a recognizable part of his duty to know his subject, that is, to know exactly what specific opposite his concept "*veers into*."

Finally, it seems that those who try to eliminate contradiction from Hegel's system are those who do him the greatest disservice. Sometimes this proposal appears to be based on his presumed "dismissal" of the law of excluded middle. In fact, what he rejects is the abstract formulation of this law, but he does the same with the formulations of the principles of identity and contradiction. He never rejects these laws in their concreteness. He means it when he says that *all* abstractions veer into their opposites, and as the usual formulations of the laws of thought are abstractions . . .; but his treatment of these laws constitutes a related, but separate topic.

NOTES

1. J. N. Findlay, *Hegel: A Re-examination* (New York: Collier Books, 1962), p. 55.
2. Maurice Cornforth, *Marxism and the Linguistic Philosophy* (New York: International Publishers, 1967), p. 293.
3. Mao-Tse-Tung, *Five Essays on Philosophy* (Peking: Foreign Languages Press, 1977), p. 30.

4. *Serving the People with Dialectics: Essays on the Study of Philosophy by Workers and Peasants* (Peking: Foreign Languages Press, 1972).
5. William Wallace ed. and trans., *The Logic of Hegel,* 2nd edition (London: Oxford University Press, 1931), p. 149.
6. *Hegel's Science of Logic II,* trans. by W. H. Johnston and L. G. Struthers (London: George Allen and Unwin, Ltd., 1929), pp. 39-40.
7. Hans Reichenbach, *Elements of Symbolic Logic* (New York: The Free Press, 1947), p. 36. Reichenbach's notation has been changed for convenience.