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THE COHERENCE THEORY OF TRUTH

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The purpose of this paper is (I) to determine what the coherence theory – in its classical, Hegelian form – has to say about truth, (II) to show that, on its own assumptions, the classical form of the theory is demonstrably valid, and (III) to make some relevant comments on this demonstration.

I

There have long been two main views about what a coherence theory should aim to do. The first is that it should set out to analyse the concept of truth or, in more traditional language (in the material mode of speech, as Carnap called it), to reveal the nature of truth. The second view is that its aim is "to present conditions for the appropriate application of the concept, and so to give a criterion of truth".[1] Most recent writers on the subject, like Rescher,[2] have tended to take the latter view. They accept a correspondence, rather than a coherence, theory as giving the nature of truth, and treat coherence as the general condition that a set of propositions must be seen to satisfy if they are to be accepted as true. Correspondingly they understand coherence in a relatively weak sense.[3] For them a coherent set of propositions do not have to be connected with one another by some appropriate type of mutual implication. Instead the propositions have to be mutually consistent and provide as wide a coverage of available data as is possible.[4] Philosophers who interpret the coherence theory of truth along these lines can then discover implicit support for the theory among philosophers who in other respects are quite distant from the Hegelian tradition. Thus Duhem, Neurath and Quine are – quite correctly – cited by Rescher[5] as incorporating the joint criterion of consistency and comprehensiveness into their epistemologies. Also, on this interpretation, the coherence theory of truth is free of any metaphysical commitments. It says nothing at all about reality, still less that reality is a system of interconnected elements. It does not require consistency to be a constitutive

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feature of nature, bur rather a regulative feature of our concept of nature.[6] Hence there is nothing paradoxical in the fact that some positivists, such as Neurath, have implicitly espoused this kind of coherence theory.

The weak interpretation of the coherence theory opens the way, in Rescher's case, for an interesting and useful exploration of the kind of epistemology favoured by philosopers like Duhem, Neurath and Quine. But it does less than justice to the kind of views about truth that lie at the heart of the Hegelian tradition, and argues a considerably greater identity of thought between Hegelians and positivists than in fact existed. *Pace* Rescher,[7] the coherence theory normally held by the Hegelian idealists, despite their many disagreements of detail with one another, was a much stronger one. It differed from Neurath's in at least three cardinal respects: it was metaphysical, it was a theory about the nature – not the criterion – of truth, and it understood coherence to require mutual entailment, not just mutual consistency.

Thus we find Joachim asserting that

> truth, as conceived under the coherence-notion, is the character of the one significant whole; and a theory of truth thus conceived is of necessity a metaphysical theory.[8]

Again, he tells us that

> A *criterion* of truth – i.e. something other than the truth itself, by which we are to recognise the truth – is not what we require. We want to know what truth in its nature is.[9]

And he also warns us that

> 'Coherence' is not to be interpreted as 'formal consistency'. The 'coherence', which is truth, is the concrete character of a significant whole, in which form and matter cannot be severed from one another, nor intelligibly considered apart.[10]

The same three theses were plainly held by Brand Blanshard. First, though he did not deny that coherence was the test, or criterion of truth, he did claim that this has a metaphysical implication:

> It is past belief that the fidelity of our thought to reality should be rightly measured by coherence if reality itself were not coherent.[11]

Secondly, he quite unambiguously claimed that the nature of truth was also at stake:

> The attempt to combine coherence as the test of truth with correspondence as the nautre of truth will not pass muster... Truth *consists* in coherence.[12]

Thirdly, he thought that the ideal of coherence

goes far beyond consistency. Fully coherent knowledge would be knowledge in which every judgement entailed, and was entailed by, the rest of the system.[13]

A few Hegelians have deviated from this norm. In particular McTaggart quite categorically rejected the view that

the truth of a belief lay in its coherence with other beliefs, or in its completeness, or in the possession of a systematic nature.... Such characteristics, or some of them, may possibly be criteria of truth, but they cannot make the belief true.[14]

But sometimes the deviation has been provisional rather than definitive. Thus F. H. Bradley is construed by Rescher[15] as being "prepared to grant the merits of the correspondence approach to the intrinsic nature of truth". Yet, though Bradley wrote, in a passage quoted by Rescher, that

Truth, to be true, must be true of something, and this something itself is not truth,

he continued

This obvious view I endorse, but to ascertain its proper meaning is not easy.[16]

And when he tried to elucidate the meaning of "this obvious view" it turned out that while "truth ... is about the real, ...that which is only 'about' has stopped short of the truth". Indeed, "the complete attainment of truth's end is reached only in that Reality which includes and transcends intelligence".[17] And so, Bradley wrote, "on any view like mine to speak of truth as in the end copying Reality, would be senseless".[18] In short, *pace* Rescher, Bradley was no more prepared than Joachim or Blanshard to concede the merits of the correspondence approach to the intrinsic nature of truth. He too seems to have held the stronger version of the coherence theory, a version that was essentially metaphysical, was concerned with the nature of truth, and implied that complete truth must be such that every completely true judgement entails every other.[19]

II

A strong coherence theory of truth is often held to be grossly implausible. The argument is that, whether or not all true propositions entail one another, it is obviously not the case that every set of compossible and co-entailing propositions is a set of true propositions. Thus Rescher considers that Hegelian theory encounters a serious difficulty here. Coherence, according to Rescher,[20] has regard solely to "the strictly internal relationships of implication that

obtain within" a set of mutually cohering propositions. So "it is problematic, to say the least, to show that a relationship obtains between *this* feature" of such propositions "and their actual truth status".

Most of us are indeed easily tempted to suppose that we could have many sets of mutually cohering propositions that are false, even if there be one set of cohering propositions that are true. However, it all depends here whether or not we are concerned with any set of propositions that, as well as being distributively compossible and co-entailing, is also collectively comprehensive, in the sense that it contains an answer to every question – i.e. every proposition or its negation is a member of the set. Rescher's objection assumes that a set of strongly cohering propositions need not be a comprehensive one, since he treats this coherence as a system of 'strictly internal relationships' and the comprehensiveness of a set is scarcely a purely internal matter. But such an assumption does not fit the historical facts. In the minds of the Hegelians, as the above quotations from Joachim, Blanshard and Bradley make clear, ideally coherent knowledge was also comprehensive knowledge. The ultimate truth about reality as a whole is a coherent system: provisional truths about parts of reality may well fail to constitute such a system. And this conception makes the strong coherence theory rather more defensible than is commonly supposed. For in fact there is at most one comprehensive set of compossible and co-entailing propositions. Philosophical intuitions to the contrary are misleading. It can be demonstrated quite rigorously that, *if* there is a set C of propositions that is collectively comprehensive and distributively compossible and co-entailing, *then* any proposition A is a member of C if and only if A is true. Hence if C exists at all, it is coextensive with the set that has all and only true propositions as its members.

The demonstration relies on propositional logic plus certain elementary modal principles that are available in any system rich enough to embrace C. I. Lewis's system of strict implication S2. A syntactical metalanguage is used, in which:

Capital letters represent wff in the object-language.

Squares and diamonds represent object-language operators that are intended to signify 'necessarily' and 'possibly' respectively. Dashes, arrows and ampersands are self-representing and are intended to have their usual propositional-calculus interpretation.

The letter 'c' represents an object-language operator that is intended to signify 'The strongly coherent set C includes the proposition that'. Any wff

of C. I. Lewis's modal propositional logic is a wff of the present system. If $A, B_1, B_2, \ldots B_n$ are wff of Lewis logic, $B_1, B_2, \ldots B_n$ occur distinctly in A, and D results from A when one or more occurrences of $B_1, B_2, \ldots B_n$ are replaced by occurrences of $cB_1, cB_2, \ldots cB_n$, respectively, then D is a wff. There are no other wff.

'Taut' indicates a transformation guaranteed by rules that are primitive or derivable in any standard natural-deduction system for the propositional calculus.

'Subst' indicates a transformation guaranteed by the rule that, if $A \leftrightarrow B$ is a tautology, allows an occurrence of $\Box B$ to replace an occurrence of $\Box A$, or an occurrence of $\Diamond B$ to replace an occurrence of $\Diamond A$, in any wff D where the occurrence of $\Box A$, or of $\Diamond A$, respectively, is not part of cE in D.

The following three premises characterise a strongly coherent set of propositions C:

1. $cA \vee c - A$.

This expresses the comprehensiveness of C.

2. $(cA \,\&\, cB) \rightarrow \Diamond(A \,\&\, B)$.

This expresses the compossibility of C's members.

3. $(cA \,\&\, cB) \rightarrow \Box(A \rightarrow B)$.

This expresses the mutual equivalence of C's members.

Four familiar modal principles will be invoked:

4. $\Diamond(A \,\&\, B) \rightarrow \Diamond A$
5. $-\Diamond(A \,\&\, -A)$
6. $\Box A \rightarrow A$
7. $\Box(A \rightarrow B) \rightarrow (\Box A \rightarrow \Box B)$.

We may prove $cA \leftrightarrow A$ as follows:

8.	$(c(A \,\&\, -B) \,\&\, cB) \rightarrow \Diamond((B \,\&\, -B) \,\&\, A)$	2, subst
9.	$(c(A \,\&\, -B) \,\&\, cB) \rightarrow \Diamond(B \,\&\, -B)$	4, 8, taut
10.	$cB \rightarrow - c(A \,\&\, B)$	5, 9, taut
11.	$(cA \,\&\, cB) \rightarrow cA \,\&\, c-(A \,\&\, -B)$	1, 10, taut
12.	$(cA \,\&\, cB) \rightarrow \Box(-(A \,\&\, -B) \rightarrow A)$	3, 11, taut
13.	$(cA \,\&\, cB) \rightarrow \Box -(A \,\&\, -B)$	3, subst

14.	$(cA \,\&\, cB) \rightarrow \Box A$	7, 12, 13, taut
15.	$(cA \,\&\, cB) \rightarrow A$	6, 14, taut
16.	$(cA \,\&\, c-B) \rightarrow A$	sim. 8–15
17.	$cA \rightarrow A$	1, 15, 16, taut
18.	$c-A \rightarrow -A$	sim. 17
19.	$A \rightarrow -c-A$	18, taut
20.	$A \rightarrow cA$	1, 19, taut
21.	$cA \leftrightarrow A$	17, 20, taut

So, if there is a strongly cohering set of propositions C, a proposition is true if and only if it belongs to C. The heart of the proof lies just in the fact that if the members of a comprehensive set of propositions have each to be possible every necessary truth must be a member of the set, since the negation of such a truth cannot be, and therefore every conditional linking one member with another must also be a member, since each such conditional is necessarily true. Indeed, even a *non*-comprehensive set of compossible and co-entailing propositions will have only true members if of the three members are A, B and $A \rightarrow B$.

Note too that the validity of the proof is unaffected by the precise nature of the necessities and possibilities at issue. So long as these obey principles 4, 5, 6 and 7, they can be thought of indifferently as logical modalities, for example, or as causal ones.

III

The above proof suffers inevitably from a certain lack of historical verisimilitude. I do not mean merely that it is not actually to be found, so far as I know, in Hegelian literature. Good reasons also exist why the argument would need to take another form in that context. The classical proponents of the strong coherence theory treated truth and falsity as "predicates of judgement",[21] and rejected "the conception of knowledge as a totality of beliefs in a totality of true propositions".[22] Judgements include an element of mental awareness that propositions lack and that Hegelian idealists are unwilling to ignore.

However, this point is not important in the present context. The proof given in Section II above goes through just as well for judgements as for propositions. Any bearers of truth-values are subject to the argument. So, whether or not you are a Hegelian idealist, you have to accept the strong coherence theory of truth *if* you assume that a strongly cohering set of

propositions (or judgements) exists, whether or not you think it possible to know what these propositions (or judgements) are. But, of course, Hegelian idealists are indeed ready to defend this metaphysical assumption, because they believe that everything is interconnected with everything else: all true propositions entail one another. As Blanshard put it,[23] Hegelians believe that

> In the real world ... a change in one fact or event would necessitate that all others be different. Suppose I climb the hill behind my farm house in Vermont and look across at Mount Washington. I am wearing a felt hat at the time. It is sensible or quite sane to argue that if I had worn a straw hat instead, that fact would have made a difference to Mount Washington? I not only believe it would, but that the argument for this conclusion is strong almost to demonstration.

That is why the coherence theory of truth, when asserted unconditionally in its classical. Hegelian form, is correctly described as a metaphysical theory. Its validity depends on a factual assumption about the nature of reality as a whole.

Moreover it is easy to understand how a Hegelian, who in any case holds that everything is interconnected with everything else, could sometimes give the impression of adhering to a weak coherence theory. If everything is interconnected with everything else, and C' is a weakly cohering set of propositions – i.e. a set that is collectively comprehensive[24] and distributively compossible –, then any proposition A is true if and only if A is a member of C'. The proof runs as follows. The premisses are

1. $c'A \vee c'-A.$

This expresses the comprehensiveness of C'.

2. $c'A \,\&\, c'B \rightarrow \Diamond(A \,\&\, B).$

This expresses the compossibility of C''s members.

3. $(A \,\&\, B) \rightarrow \Box(A \rightarrow B).$

This is the metaphysical assumption of interconnectedness.

Two standard modal principles are required:

4. $\Box(A \rightarrow B) \rightarrow (\Box A \rightarrow \Box B).$
5. $\Diamond(A \,\&\, B) \rightarrow -\Box - A.$

A proof runs as follows:

6. $(A \,\&\, B) \rightarrow \Box((A \rightarrow B) \rightarrow A)$ 3, taut

7.	$(A \,\&\, B) \rightarrow \Box A$	3, 4, 6, taut
8.	$(A * -B) \rightarrow \Box A$	sim. 7
9.	$-\Box - A \rightarrow A$	7, 8, taut
10.	$c'A \rightarrow A$	2, 5, 9, taut
11.	$A \rightarrow -c' - a$	10, taut
12.	$A \rightarrow c'A$	1, 11, taut
13.	$A \leftrightarrow c'A$	10, 12, taut

Thus, if a Hegelian sometimes leaves unstated his all-too-familiar metaphysical doctrine that everything is interconnected (premiss 3), he could appear then to be claiming that weak coherence alone suffices to guarantee truth. And, since weak coherence on its own is obviously an insufficient guarantee of truth, a reader might be tempted to suppose that coherence was really intended just as a necessary condition, or criterion, of truth, and not as a sufficient condition at all. But a more explicit presentation of the Hegelian position should make clear that universal interconnectedness is assumed whenever the premiss of weak coherence is supposed to guarantee truth. Or, in other words (i.e. when we incorporate the assumption into the premiss), it is strong coherence that constitutes the nature of truth.

The above proof (line 7), and the previous proof in Section II (lines 14 and 20), make it clear also that the strong coherence theory of truth is committed to a particularly strong form of determinism. Every true proposition, as well as being necessarily equivalent to every other, turns out itself to be necessarily true. In the relevant sense of 'possible', no other possible worlds can be supposed to exist besides the actual one. Contrapositively, if you wish to hold that some true propositions are contingent, or that some other possible worlds exist, you must reject the doctrine of universal interconnectedness. The thesis that some true propositions at least are elementary or atomic, in the sense of being independent of one another, is a commitment to which anyone must subscribe if he wishes to assert that some true propositions are contingent. The Humean tradition, with its latter-day examples in Russell and the early Wittgenstein, thus stands opposed to the Hegelian tradition on the issue of determinism as well as on that of metaphysical atomism. Philosophers may call it a kind of determinism when for every description of an actual event there is said to be a description of *some* other actual event that may be linked to the first by a true statement of physical necessity – the consequence of a natural law. But this is a very mild form

of determinism compared with that which holds every such description to be so linked with *every* other. The former (Humean or Laplacean) view makes each actual event physically necessary relatively to some other actual event: the latter (Spinozist or Hegelian) view makes each actual event necessary absolutely.

Not that any Hegelian ever thought of strong coherence as constituting a feature of practically attainable knowledge. Finite human intelligence was supposed quite inadequate to the task of actually discovering the unique, comprehensive set of compossible and co-entailing judgements. Instead, as a theory about the nature of truth, strong coherence was taken to hold out a goal to which the growth of human knowledge and understanding could asymptotically approximate. Of course, there is probably even less reason to adopt such a goal to-day than in the heyday of Hegelianism. Physicists no longer hold that gravity is a natural force which uniquely connects every physical object with every other. And not only has that familiar prop[25] for the methaphysical doctrine of universal interconnectedness been struck away. There are also well-known metamathematical discoveries about incompleteness and independence that do not easily integrate with such a doctrine. Nevertheless, domains of interconnected elements do exist, such as chess situations or semantic fields. And it is an interesting question whether some of these domains can be specified in language that would enable the three conditions for a strong coherence theory of truth to be satisfied. As applied to such a domain the theory would still make a factual, descriptive claim, though the claim would not now be metaphysical, because the domain would be only a very small and specialised one. But the investigation of these further possibilities is a very complex matter and will need a rather larger canvas than the present one.

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NOTES

[1] N. Rescher, *The Coherence Theory of Truth*, 1973, p. 1.
[2] *Ibid.*, p. 23.
[3] *Ibid.*, p. 43f.
[4] *Ibid.*, p. 72ff. Cf. F. W. Dauer, 'In Defence of the Coherence Theory of Truth', *Journal of Philosophy* **LXXI** (1974), 791ff, for a somewhat similar view.
[5] *Op. cit.*, pp. 25, 216.

[6] *Ibid.*, p. 235.
[7] *Ibid.*, pp. 24–25; and *pace* Dauer, *op. cit.*, p. 793.
[8] H. H. Joachim, *The Nature of Truth*, 1906, p. 169.
[9] *Ibid.*, p. 67.
[10] *Ibid.*, p. 170.
[11] *The Nature of Thought*, 1939, Vol. II, p. 267.
[12] *Ibid.*, p. 269.
[13] *Ibid.*, p. 264. There is a superficial difference between the thesis that every member of a certain set of propositions implies every other and the thesis that each member implies and is implied by the conjunction of the others. However by the standards of any system of strict implication the two theses are demonstrably equivalent. In fact, if each member A_i of a set of propositions $A_1, A_2, A_3, \ldots$, entails the conjunction of the other members, then it must also be the case that such a conjunction entails each A_i. So in the passage quoted from Blanshard's text, the words 'and was entailed by' are logically redundant.
[14] *The Nature of Existence*, Vol. I, p. 10.
[15] *The Coherence Theory of Truth*, p. 23.
[16] F. H. Bradley, *Essays on Truth and Reality*, 1914, p. 325.
[17] *Ibid.*, p. 331.
[18] *Ibid.*, p. 345.
[19] A detailed argument for this interpretation of Bradley is given in R. Wollheim, *F. H. Bradley*, 1959, p. 171ff.
[20] *Op. cit.*, p. 38.
[21] H. H. Joachim, *The Nature of Truth*, p. 91.
[22] *Ibid.*, p. 92.
[23] *Op. cit.*, p. 293.
[24] I am assuming here that the set is actually comprehensive and not merely as comprehensive as a particular finite investigator can make it (which is the kind of comprehensiveness that satisfies Rescher's version of the weak coherence theory).
[25] Cf., e.g., B. Blanshard, *op. cit.*, 494.