

## Book Review

Neil Tennant. *The Taming of the True*. The Clarendon Press, Oxford, 1997. xvii + 465 pages.

On page 10, Tennant condenses his book into the slogan that logical empiricism was almost right. It was right to claim that logic is analytic and to seek a criterion of cognitive significance. But the right logic is not classical but intuitionist (no excluded middle) and relevant (no paradoxes of material implication). A criterion of cognitive significance turns not on verification but rather on falsification à la Popper. The logical positivists were in part motivated by a desire to condemn metaphysics as nonsense. Tennant mentions Heideggerian metaphysics with perfunctory contempt (p. 373), but he does not use his criterion in a sustained critique of anything to be undercut and dismissed. Part of the fun of positivism was its arrogant rejection of much that many thought deep and mysterious. By and large analytic philosophy seems to have lost the hubris of its youth, and one might now hope an examination of Heidegger would seriously confront his romantic mistrust of science. Still, youthful passion has its appeal. A. J. Ayer's *Language, Truth, and Logic* [1] had its faults, but it also had a deft passion that brought one back to it to winkle out its faults. Tennant's book is more than twice as long as Ayer's, and I for one will be reluctant to return to Tennant's.

On page 2, Tennant divides opponents of realism into two camps, antirealists and irrealists. He says he thinks the second term first appears in a paper published by Crispin Wright in 1988 but adds that Paul Boghossian used it as if it were common coin in a paper published in 1990. The word occurs at least as early as 1984 in Nelson Goodman's *Of Mind and Other Matters* ([3], vii, pp. 29–30, and p. 39). Tennant says (p. 3) he will explain how irrealism and realism differ, but I could find no place where he lays it out. Chapter 3 begins with a list of irrealisms, and these all seem to be denials that there are such-and-suches. Tennant does not seem to specify what constitutes an antirealist position. But perhaps we can recover the hallmarks from his central concerns. These seem to be a refusal to accept verification-transcendent truth and bivalence. Consider an unsolved problem about natural numbers, for example,

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Goldbach's Conjecture, which says that every even number greater than two is the sum of two primes. Tennant says an antirealist about natural numbers should avoid committing himself to the existence of any proposition that does not, in principle, admit of finite proof or disproof (p. 149). If the conjecture is false, a finite calculation refutes it. So what the antirealist resists is the claim that the conjecture might be true and yet there be no finite proof of it. That is a refusal of verification-transcendent truth. Refusal of bivalence would be refusal to assert the disjunction of the conjecture with its negation. These are positions about truth, not *prima facie* about numbers. One wonders what kinds of things numbers might be for the truth about them to require finite proof. The Dutch intuitionists followed Kant in taking numbers to be mental, but their heirs are less explicit.

Perhaps I have not got Tennant on antirealism. For he is a realist about meaning, and that would seem to require bivalence and verification-transcendence for meaning. Either "heap" is vague or it is not. Maybe; one who thinks excluded middle is okay everywhere should not balk when the subject is meaning, assuming there is such a subject. But what about verification-transcendence? Could it be that "glory" does mean a nice knockdown argument after all, though no one will ever know so? This is implausible, for if words are to be used in communication, their meanings should be common knowledge. It is hard to believe Tennant thinks semantics is verification-transcendent, but that makes it hard to be sure just how he contrasts realism and antirealism.

Tennant defends semantic realism by criticizing two arguments against it, one from Paul Boghossian and the other from Saul Kripke. Kripke's argument is the one in "Wittgenstein on rules and private language" ([5], pp. 238–312). Kripke asks how we know that by "plus" we do not mean a function whose value is the usual sum when this is less than some big number, but five otherwise. Asked how this could fit with counting or general laws about numbers, Kripke replies that perhaps "count" and "all" do not mean what we thought they did. This ramification might count as verification-transcendent meaning with a vengeance, but Kripke is more concerned with a kind of semantic skepticism. Tennant's reply to Kripke is that Kripke owes us chapter and verse (p. 108), that for every sign Kripke's skeptical worry about "plus" requires be reread, Kripke must produce a rereading of it. Tennant cannot follow Kripke's skeptical rule. Tennant lays similar burdens on Goodman and "grue" and on Quine and indeterminacy of translation. Perhaps we could solve Hume's problem of induction by showing that Hume has not shown that for *every* inductive argument, it is possible that the premisses be true but the conclusion false.

Tennant's reply to Kripke is to try to shift the burden of proof back on to Kripke (p. 103). Tennant also tries this move against Boghossian (p. 90), and against the Gödelian optimist (p. 239), someone who accepts bivalence but not verification-transcendence, so we will eventually settle every bivalent sentence—as Hilbert put it, there is no ignorabimus. This ploy is standard with Tennant; see my review of his *Anti-Realism and Logic* [4]. Recalling an author who popularized it, we might call this the Dummett Dodge: persist in the face of opposition by trying to shift the burden of proof on to your opponent.

It is pretty cut and dried by now what conditional proof and modus ponens are. By that standard it seems mozzarella mooshy and soaking wet what locates the burden of proof. In the prisoner's dilemma, those who cooperate do okay, while if one defects but the other does not, the defector prospers and the other suffers, and if both

defect they are only a bit badly off. There have been empirical studies of how people respond in repeated prisoner's dilemmas. Tit-for-tat is the strategy of cooperating with cooperators and defecting from defectors. More people than not practice tit-for-tat in repeated prisoner's dilemmas. I have no way to know for sure, but it would not surprise me if people favored tit-for-tat in shifting-the-burden-of-proof: assume yours against an opponent who assumes his, but try to shift yours on to an opponent who tries to shift his on to you. What does seem clear is that while there might be a chance of something being established in a debate between opponents who assume their burden of proof, there is no chance of anything being established in a debate between two burden shifters. Of course, the issue may be so basic that neither has anything more basic from which to argue his case. Then let each tend his own garden, not weeding the other's, and we will see which, if either, we like. Perhaps a kind of antirealism about realism versus antirealism is in order.

Even if semantic realism does not require verification-transcendent truth about meanings, mathematical realism requires verification-transcendent truths about, say, numbers. In contrast, Tennant says that the truth of any sentence must consist in there being some *finite* truthmaker, which could, in principle, be surveyed, effectively checked, and therefore recognized as such (p. 204—Tennant probably meant the relative clause to be restrictive). Earlier he cites Dummett saying that a realistic conception of this kind (recognition-transcendent truth) is open to attack from anyone who holds that the sense which we confer on the sentences of our language can be related only to the means of recognition of truth-value that we actually possess (p. 178). This is the manifestation challenge, and Tennant is convinced by it that verification-transcendent truth is an illusion (p. 179), though he thinks bivalence is another story.

Consider again Goldbach's conjecture. Here for each of the first ten even numbers greater than two is a representation of it as the sum of two primes:  $4 = 2 + 2$ ;  $6 = 3 + 3$ ;  $8 = 5 + 3$ ;  $10 = 5 + 5$ ;  $12 = 7 + 5$ ;  $14 = 7 + 7$ ;  $16 = 11 + 5$ ;  $18 = 11 + 7$ ;  $20 = 17 + 3$ ; and  $22 = 11 + 11$ . You can easily do the next ten. Using computers, people have checked up to very big even numbers without a counterexample turning up. But neither has anyone proved the conjecture. It seems to me the conjecture might be true and yet there be no finite proof of it. That might be because there just is no law of the distribution of the primes among the natural numbers, and a proof of the conjecture would require such a law to describe a representation of  $2n + 2$  in terms of one of  $2n$ . Tennant and Dummett are telling us that what we can mean by "all" in the conjecture rules out what seems possible to me, that my realistic understanding of the conjecture is meaningless. Pish-tush. Given a choice between an outré story of meaning and logic hallowed by centuries of success, it seems only sensible to go with classical logic.

Dummett does not say why the sense we confer on a sentence can be related only to the means of recognition of truth-value that we actually possess. This verificationism says concept-formation is constrained by how we can settle questions. Such verificationism seems to have missed the contrast between intellect and modes of verification worked out in, say, Kant's and T. H. Green's criticism of Hume. The imagination is free to create ideas and thoughts quite unconfined by experiment, observation, or proof. These remarks are just tending the realist's garden, not weeding the antirealist's.

But the realist has an argument. For Tennant, all truth must be knowable (p. 15). In 1963 Fred Fitch published a deduction of the conclusion that all truths are known from the premiss that all truths can be known ([2], pp. 135–42). Fitch says explicitly that the argument is not his but comes from an anonymous referee of a paper Fitch submitted to *The Journal of Symbolic Logic* in 1945. Recently Joseph Solerno found that referee's handwritten report and shows from the handwriting that Alonzo Church wrote it. (See [6], forthcoming.) Tennant discusses the deduction in Chapter 8. As in others of his chapters, he begins by raising a dust of distinction whence his own view emerges without argument at the end. Church's argument is very simple, but Tennant manages to obscure it. Use " $Pq$ " as short for "it is possible that  $q$ " and " $Kq$ " for "it is known that  $q$ ." If not all truths are known, then for some  $q$ ,  $q \ \& \ \neg Kq$ . So, if all truths can be known,  $PK(q \ \& \ \neg Kq)$ . When a conjunction is known, so are its conjuncts, so  $P(Kq \ \& \ K\neg Kq)$ . What is known is true, so  $P(Kq \ \& \ \neg Kq)$ . This says an explicit contradiction could be true. That is not so. Hence, if all truths could be known, all truths are known. This last is false, so not all truths can be known. This prides the grubby fingers of humanity off truth.

Tennant's response is to restrict the idealist principle that all truths can be known to what he calls Cartesian truths (p. 278). A truth is Cartesian if no absurdity (such as a contradiction) is deducible from the supposition that the truth is known. He gives no reason for restricting the principle independent of wishing to block Church's argument. Tennant says all the propositions of mathematics and natural science are Cartesian (p. 436), but he provides no consistency proofs. What is known is true, so Gödel's Second Incompleteness Theorem rings alarm bells here. Tennant does not specify what means may be used in a deduction of an absurdity from the supposition that such and such a truth is known. If no means are allowed, the supposition itself will have to be absurd, and pretty much everything will be Cartesian, thus allowing Church's argument. If the epistemic facts are allowed, nothing unknown will be Cartesian and the idealist principle will say known truths can be known, which is hardly hot news. If all the laws constraining possibility are allowed, then perhaps the Cartesian truths will be those that can be known, and the principle will say that knowable truths are knowable, again not hot news. Moreover, if there are non-Cartesian truths, the realist's point is made anyhow.

Tennant tries in Chapter 9 to revive the positivist principle that the truths of logic and mathematics are analytic. He does not define analyticity, but seems to take it as truth by virtue of meaning alone, though it is hard to be sure. The main difficulty is the centuries-old consensus that no existence proposition is analytic; mean what you will by a word, that will not provide it with a denotation. But mathematics is full of existence truths: every number has a successor; there are infinitely many primes; there are more sets of natural numbers than natural numbers. Tennant bites the bullet. He says there are analytic existence truths. (Arthur Pap may have toyed with such a doctrine toward the middle of the last century.) Tennant's discussion is very brief and scattered (p. 26, pp. 299–304), so it is hard to make his view out. He writes, "If, by the use of certain expressions in one's language, one commits oneself to (better: accommodates oneself to, or acknowledges) the existence of certain entities that exist necessarily anyway, one is not going beyond the meanings of the expressions involved if one says, by means of those expressions, that those entities exist" (p. 303). A trite example of an analytic sentence is, "All bachelors are unmarried." Part of what many meant by calling this analytic is that we make it true by

including being unmarried in the very definition of bachelor. Tennant does not say we make anything exist, or exist necessarily, by what we say or mean. His position inverts this; if the denotation of a term exists necessarily (anyway), then its existence is part of the meaning of the term. It is hard to see why necessity matters here, and simple existence will not suffice too. But in either case, existence is not explained by meaning, and it is a travesty to call such existence analytic.

Suppose, as Tennant seems to think, that each natural number exists necessarily. None of us do. So the numbers would have existed even if we had not and had never proved a theorem. Presumably an even number is necessarily even, a prime number is necessarily prime, and when two numbers sum to a third, they do so necessarily. So none of this depends on us. This independence intensifies the platonist conviction that Goldbach's Conjecture could have been true even if there never had been and never would be a proof of it, or anything else.

### References

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