

24.400

Proseminar in philosophy I

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Ayer's principle of verification*first version*

"the mark of a genuine factual proposition... [is] that some experiential propositions [observation statements] can be deduced from it in conjunction with certain other premises without being deducible from those other premises alone" (*LTL*, ch. 1).

PV1

Statement S is verifiable (and consequently meaningful) iff (i) S in conjunction with other statements S^*, S^{**}, \dots entails an observation statement O, and (ii) S^*, S^{**}, \dots do not entail O.

Ayer's argument in the introduction to the second edition that this makes *every* statement verifiable (i.e. factual) is mistaken, as Lewis pointed out ("Ayer's first empiricist criterion of meaning: why does it fail?", in *Papers in Philosophical Logic*). Ayer's argument is this. Let S be any statement, and let O be an observation statement. Then $\lceil S \supset O \rceil$ and S imply O, but $\lceil S \supset O \rceil$ does not imply O, hence S is verifiable. The mistake is in the assumption that $\lceil S \supset O \rceil$ does not imply O: it will, iff $\lceil S \vee O \rceil$ is analytic. ($\lceil (S \supset O) \supset O \rceil$ is equivalent to $\lceil S \vee O \rceil$.) So we need to treat separately the case where, for all O, $\lceil S \vee O \rceil$ is analytic. Suppose (reasonably enough) that there are observation statements O_1, O_2 such that $\lceil \sim(O_1 \& O_2) \rceil$ is analytic. Since S follows from the three analytic premises $\lceil S \vee O_1 \rceil, \lceil S \vee O_2 \rceil$, and $\lceil \sim(O_1 \& O_2) \rceil$, S is analytic. Hence, for all S, either S is verifiable or else analytic,

which is to say (as Ayer claims) that the principle “allows meaning to any statement whatsoever”.

(PV1 allows contradictions to be verifiable – so for reasons of charity we should take the statements covered by the criterion to be just the consistent ones. So perhaps for reasons of charity we should take the statements covered by the criterion to be the non-analytically true/false ones, in which case Ayer didn't make a mistake.)

second version

S is directly verifiable iff S is (i) an observation statement, or (ii) in conjunction with one or more observation statements O^*, O^{**}, \dots , entails an observation statement not entailed by O^*, O^{**}, \dots alone

S is indirectly verifiable iff (i) S, in conjunction with other statements S^*, S^{**}, \dots , entails a directly verifiable statement not entailed by S^*, S^{**}, \dots alone; and where (ii) the other statements S^*, S^{**}, \dots do not include any statement that is not analytic, or directly verifiable, or capable of being independently established as indirectly verifiable.

PV2

A non-analytically true/false statement S is verifiable (and consequently meaningful) iff S is either directly or indirectly verifiable.

Church's problem

Suppose (reasonably enough) that there are three logically independent observation statements O_1, O_2, O_3 . Consider the statement $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$.

(a) $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ in conjunction with O_1 entails O_3 . O_1 does not entail O_3 (by logical independence). Hence $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ is directly verifiable.

(b) Suppose $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ does not entail O_2 . Then since $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ in conjunction with S does entail O_2 , and $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ is directly verifiable, S is indirectly verifiable.

(c) Suppose $\lceil (\sim O_1 \& O_2) \vee (O_3 \& \sim S) \rceil$ entails O_2 . Then $\lceil O_3 \& \sim S \rceil$ entails O_2 . So $\sim S$ in conjunction with O_3 entails O_2 , and O_3 does not entail O_2 (by logical independence). Hence $\sim S$ is directly verifiable.

(d) Hence, for any non-analytically true/false statement S , either S or $\lceil \sim S \rceil$ is meaningful.

And since meaningfulness should be closed under negation, PV2 implies that every S is meaningful. (Alternatively, Church's argument can be adapted to show this, if we assume that for some observation statement O , $\lceil \sim O \rceil$ is an observation statement; see Soames, *Philosophical Analysis in the Twentieth Century*, forthcoming.)

On further epicycles to Church's criticism of Ayer's second attempt, see Wright, "Scientific realism, observation and the verification principle" in *Fact, Science and Morality*, eds. MacDonald and Wright; "The verification principle - another puncture, another patch", *Mind* 98, 1989; and Lewis, "Statements partly about observation", in *Papers in Philosophical Logic*.

Fitch's proof that there are unknowable truths (the "paradox of knowability")

Verificationists suppose, at least, that all truths are knowable. But they will admit that some truths are not in fact known; suppose it is not known whether p .

1. Either it is true that p , or it is true that not- p .

2. Suppose it is true that p (the other case is similar), and consider the conjunctive proposition that p and no one knows that p . That proposition is true, and not known. *Could* it be known?

3. No: suppose that S knows that p and no one knows that p . Then S knows that p and S knows that no one knows that p . (Knowledge “distributes over conjunction”.) Since knowledge is factive, if S knows that no one knows that p , then no one knows p , and so S , in particular, does not know that p .

Contradiction. So the proposition that p and no one knows that p is true but unknowable.

See Edgington, “The paradox of knowability”, *Mind* 94, 1985; Williamson, “Intuitionism disproved?”, *Analysis* 42, 1982, and ch. 12 of *Knowledge and its Limits*.