

ALFRED AYER

The man



- Born in London, 1910
- Educated at Eton then Oxford (Greek and philosophy)
- Spent most of his academic career at Oxford and UCL
- High profile humanist and political activist (disabled, gay and women's rights, Vietnam war...)
- Exceptionally productive, influential and precocious (wrote *Language, Truth and Logic* aged 24)
- Once "squared up" to Mike Tyson at a NYC party in defence of a young Naomi Campbell
- Passed away in 1989

His work

- Ayer was one of the most influential and articulate proponents of 'Logical Positivism', a provocative philosophical movement centered around the Vienna Circle and Berlin Society of the 1920's & 30's (other figures: Reichenbach, Carnap, Schlick, ...)
- His key works spanned a broad range of topics, including: language, mind, perception, causation, knowledge and ethics
- Some of his best know contributions
 - (i) The 'verifiability' criterion of meaningfulness
 - (ii) The claim that all necessary truths are analytic
 - (iii) The thesis that ethical claims are not factually meaningful but rather serve to express an emotion (emotivism)

His work (ctd.)

- We'll cover all three contributions, via a reading of chapters 1, 4 and 6 of his seminal *Language, Truth, and Logic*
- Today: contributions (i) and (ii)
- The week after next: contribution (iii)

Ayer's dilemma

ANALYCITY AND KNOWLEDGE OF NECESSARY TRUTHS

- A common view: mathematics and logic are in the business of establishing general claims (e.g. of the form 'All F s are G ') that are **necessarily** or **certainly true** (which couldn't fail to be true)
- Ayer: no necessarily or certainly true general claim can be established by observation alone (no such claim is **a posteriori**)
- If correct, this claim leaves two options regarding logical and mathematical claims
 - (i) Logical and mathematical truths *can* be established on the basis of observation alone but are *not* necessary truths
 - (ii) Logical and mathematical truths *cannot* be established on the basis of observation alone and *are* necessary truths
- Mill endorsed (i): logical & mathematical truths are uncertain generalisations established by induction from observations

Ayer on Mill

- Ayer's objection to Mill: when confronted with alleged confutations of mathematical and logical claims, we tend to save the law by blaming other factors for the result

'[Assume that] when I came to count what I had taken to be five pairs of objects, I found that they amounted only to nine...one would not say that the mathematical proposition " $2 \times 5 = 10$ " had been confuted. One would say that I was wrong in supposing that there were five pairs of objects to start with, or that one of the objects had been taken away while I was counting, or that two of them had coalesced, or that I had counted wrongly. One would adopt as an explanation whatever empirical hypothesis fitted in best with the accredited facts. The one explanation which would in no circumstances be adopted is that ten is not always the product of two and five.'

Ayer on Mill

- The implicit argument appears to be:
 - (1) No experiences provide evidence that mathematical propositions are false.
 - (2) If no experiences provide evidence that mathematical propositions are false, then no experiences provide evidence that mathematical propositions are true

- (3) No experiences provide evidence that mathematical propositions are true (From (1) and (2))
- Question: would Ayer's claim to (1) seem so plausible if it turned out that (a) many apparent disconfirming instances of " $2 \times 5 = 10$ " had been encountered and that (b) none of the most obvious sources of error had been independently verified?

The appeal to analyticity

- Since Ayer therefore endorses (ii), one might ask: if our knowledge of mathematical and logical truths is not grounded in observation... what is it grounded in?
- Reply: mathematical/logical sentences are, if true, true by virtue of the *mere meanings* of their terms (**analytically true**)
 - ‘The principles of logic and mathematics are true universally simply because we never allow them to be anything else. And the reason for this is that we cannot abandon them without contradicting ourselves, without sinning against the rules which govern the use of language, and so making our utterances self-stultifying. In other words, the truths of logic and mathematics are analytic propositions or tautologies.’
- Point of analytic sentences: to draw attention to facts about linguistic conventions

VERIFIABILITY AND MEANING

Verificationism

- If our *mathematical/logical* claims are justified on the basis of our knowledge of linguistic conventions, what about the remainder?
- Ayer took a thoroughly **empiricist** line: our non-analytic claims are, if justified, justified solely by the output of our senses
- He in fact held an extremely radical thesis regarding the latter. They are, according to him, either:
 - (i) logical reducible to claims regarding the outputs of our senses and hence verifiable, at least in principle, through observation (e.g. claims about material objects or other minds), or
 - (ii) not so reducible or verifiable and simply **factually meaningless** (e.g. metaphysical claims, such as ‘The Absolute enters into, but is itself incapable of evolution and progress’)

Verificationism (ctd)

- The requirement that any meaningful, non-analytic statement be verifiable in principle through observation is known as **verificationism**
- But this notion of ‘verifiability in principle through observation’ (henceforth: ‘verifiability’) turned out to be rather tricky to spell out precisely...

'Strong' verificationism

- The basic suggestion:
 - Criterion of Strong Verifiability (CSV):** A sentence H is factually meaningful iff either
 - (i) it is a tautology or a contradiction
 - (ii) there exists a *consistent, observational* sentence O , such that O implies H
- If H satisfies (ii), we say that it is 'strongly verifiable'
- The two qualifications in italics reflect the requirement that the supporting evidence be knowable in principle via our senses
- What counts as an observational sentence is crucial here:
 - If every sentence were an observational sentence, then CSV would entail that every sentence is meaningful

Falsification to the rescue?

- Ayer considers Popper's following alternative to CSV:
 - Criterion of Strong Falsifiability (CSF):** A sentence H is factually meaningful iff either
 - (i) it is a tautology or a contradiction
 - (ii) there exists a consistent, observational sentence O , such that O implies $\neg H$
- If H satisfies (ii), we say that it is 'strongly falsifiable'
- In its favour:
 - The negation of universally quantified sentences *can* be logically implied by a consistent, observational sentence (e.g. 'Not every F is G ' is implied by ' a is F but isn't G ')

Problems for Strong Verifiability

- But Ayer thinks CSV is unappealing because he claims that CSV treats non-tautologous/contradictory *universally quantified claims* ('Every F is G ') as meaningless as they are not logically implied by any consistent observational sentences
- His view is that
 - (a) the only observational data that would support 'Every F is G ' is stateable as a finite conjunction ' a_1 is F and is G and... a_n is F and is G ' of its instances, but
 - (b) This finite conjunction doesn't logically imply 'Every F is G '

Problems for Strong Falsifiability

- But CSF is also unappealing:
 - CSF treats non-tautologous/contradictory *existentially quantified claims* ('Some F is G ') as meaningless since
 - The negations of such claims are universally quantified claims
 - So anything that would falsify them, hence imply their negation, would have to imply a universally quantified claim
 - On Ayer's view, no observational sentence does that

A disjunctive proposal?

- Retreating to a disjunctive **Criterion of Strong Verifiability or Falsifiability** would help with the above cases:
 - 'Some F is G ' is verifiable, even though not falsifiable
 - 'All F s are G ' is falsifiable, even though not verifiable.
- But problems turn out to remain in relation to *mixed existentially/universally quantified claims* ('For any x , there is some y , such that y bears relation R to x ')
- For an exposition, see Soames, *DoA*, p. 280

A problem for Weak Verifiability, v. 1

- It turns out, however, that the proposal **trivialises**:
 - CWV₁ can be proven to entail that, so long as there exist at least 2 jointly inconsistent observational sentences, *every* statement is factually meaningful
- Proof strategy:
 - Show that, if there exist 2 jointly inconsistent observational sentences, then, for any non-tautologous H , there exists an observational sentence O such that $\neg H \vee O$ alone fails to imply O
- If we establish this, then we are done:
 - H implies O in the presence of an auxiliary statement (namely $\neg H \vee O$: H and $\neg H \vee O$ do jointly imply O) that fails to imply O by itself and hence, by the proposal, O verifies H

'Weak' verificationism: 1st pass

- For the above reasons, Ayer ditches determination of truth for mere *relevance* to the determination of truth;
 - Criterion of Weak Verifiability 1 (CWV₁)**: A sentence H is factually meaningful iff either
 - (i) it is a tautology or a contradiction
 - (ii) it is strongly verifiable
 - (iii) there exists a consistent, observational sentence O , such that
 - H logically implies O in conjunction with some set S of auxiliary statements, but
 - S does not logically imply O by itself
- If H satisfies (iii), we say that it is 'weakly verifiable'
- This helps with universally quantified claims (e.g. 'All F 's are G ' and ' a is F ' imply ' a is G ' but ' a is F ' alone does not)

Proof

- (1) H is not a tautology and O_1 and O_2 are jointly inconsistent observational sentences (Assumption)
 - (2) Both $\neg H \vee O_1$ implies O_1 and $\neg H \vee O_2$ implies O_2 (Assumed for reductio)
 - (3) $\neg H$ implies both O_1 and O_2 and hence $O_1 \& O_2$ (From (2), since anything implied by a disjunction is implied by its disjuncts)
 - (4) $\neg H$ is a contradiction and hence H a tautology (From (1) and (3), since only a contradiction can imply a contradiction)
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- (5) Either $\neg H \vee O_1$ doesn't imply O_1 or $\neg H \vee O_2$ doesn't imply O_2 (By reductio of (2) from (1) and (4))

'Weak' verificationism: 2nd pass

- Ayer responds by imposing a verifiability restriction on S :

Criterion of Weak Verifiability 2 (CWV2): A sentence H is factually meaningful iff it is either

- (i) a tautology or a contradiction, or
- (ii) strongly verifiable or directly/indirectly weakly verifiable

H is **directly weakly verifiable** iff there exists a consistent, observational sentence O , such that H logically implies O in conjunction with some set S of *observational* auxiliary statements, but S alone doesn't logically imply O

H is **indirectly weakly verifiable** iff there exists a consistent, observational sentence O , such that H logically implies O in conjunction with some set S of *directly or indirectly weakly verifiable* auxiliary statements, but S alone doesn't logically imply O)

Church's proof

- (1) O_1 , O_2 and O_3 are observational sentences, none of which entails any of the others (Assumption)
- (2) (a) below implies the observational sentence O_3 in conjunction with auxiliary observational sentence O_1 , but O_1 alone doesn't imply O_3 :
 - (a) $(\neg O_1 \& O_2) \vee (O_3 \& \neg H)$ (From (1) and elementary logic)
- (3) (a) is directly verifiable (From (2) and def. of direct weak verifiability)
- (4) H implies O_2 in conjunction with (a) (Elementary logic)
- (5) Now, either (a) alone does not imply O_2 or it does
- (6) If (a) alone does not imply O_2 , then H is indirectly verifiable and hence meaningful (From (3), def. of indirect verifiability and CWV2)

CWV2: the good news and the bad

- CWV2 avoids the trivialisation problem:

The result would only follow if we could *further* establish that, for any non-tautologous H and jointly inconsistent observational statements O_1 and O_2 , $\neg H \vee O_1$ and $\neg H \vee O_2$ are both weakly verifiable

- However, in his review of the 2nd edition of *LTL*, Church proves another kind of trivialisation result:

CWV2 entails that, if there are 3 observational sentences, none of which entails any of the others, then for any sentence H , either H or $\neg H$ is factually meaningful

- This led many to give up on the verificationist project
- The proof is trickier than the previous one, but let's have a go!

Church's proof (ctd)

- (7) If (a) alone does imply O_2 , then $O_3 \& \neg H$ implies O_2 (Elementary logic: anything implied by a disjunction is implied by its disjuncts)
 - (8) If $O_3 \& \neg H$ implies O_2 , then $\neg H$ is directly verifiable and hence meaningful (From (1), def. of direct verifiability and CWV2: If $O_3 \& \neg H$ implies O_2 , then $\neg H$ implies O_2 in the presence of observational auxiliary sentence O_3 but we know from (1) that O_3 alone doesn't imply O_1)
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- (9) Either H is meaningful or $\neg H$ is (From (5), (6) and (8))

Next week: class discussion

- We should probably spend some time discussing Soames' summary of Quine's objection to Ayer's view that logical truths are knowable on the basis of knowledge of meaning (Ch. 12, section titled 'The Linguistic Explanation of Apriori Knowledge')
- The remainder is up for grabs
- Please review the key arguments discussed during this 1st half of the course and note any queries, comments or suggestions that you may have in relation to them

Week after next: Emotivism

- Required reading:
 - Soames, S. *DoA*, Ch 14
- Recommended reading:
 - Ayer, A.J. 1952: *Language, Truth, and Logic* (reprinting of the 1946 *Second Edition*).
 - Barnes, W.H.F. 1934: A Suggestion About Value. *Analysis* 1(3): 45-46.
 - Stevenson, C.L. 1937: The Emotive Meaning of Ethical Terms. *Mind* 46(181): 14-31.

References

- Ayer, A.J. (1946): *Language, Truth, and Logic* (Second Edition). New York: Dover Publications.
- Church, A. (1949): Review of *Language, Truth, and Logic: Second Edition*. *Journal of Symbolic Logic*, 14: pp. 52-53.