LENT 2018

THEORY OF MEANING

DR MAARTEN STEENHAGEN
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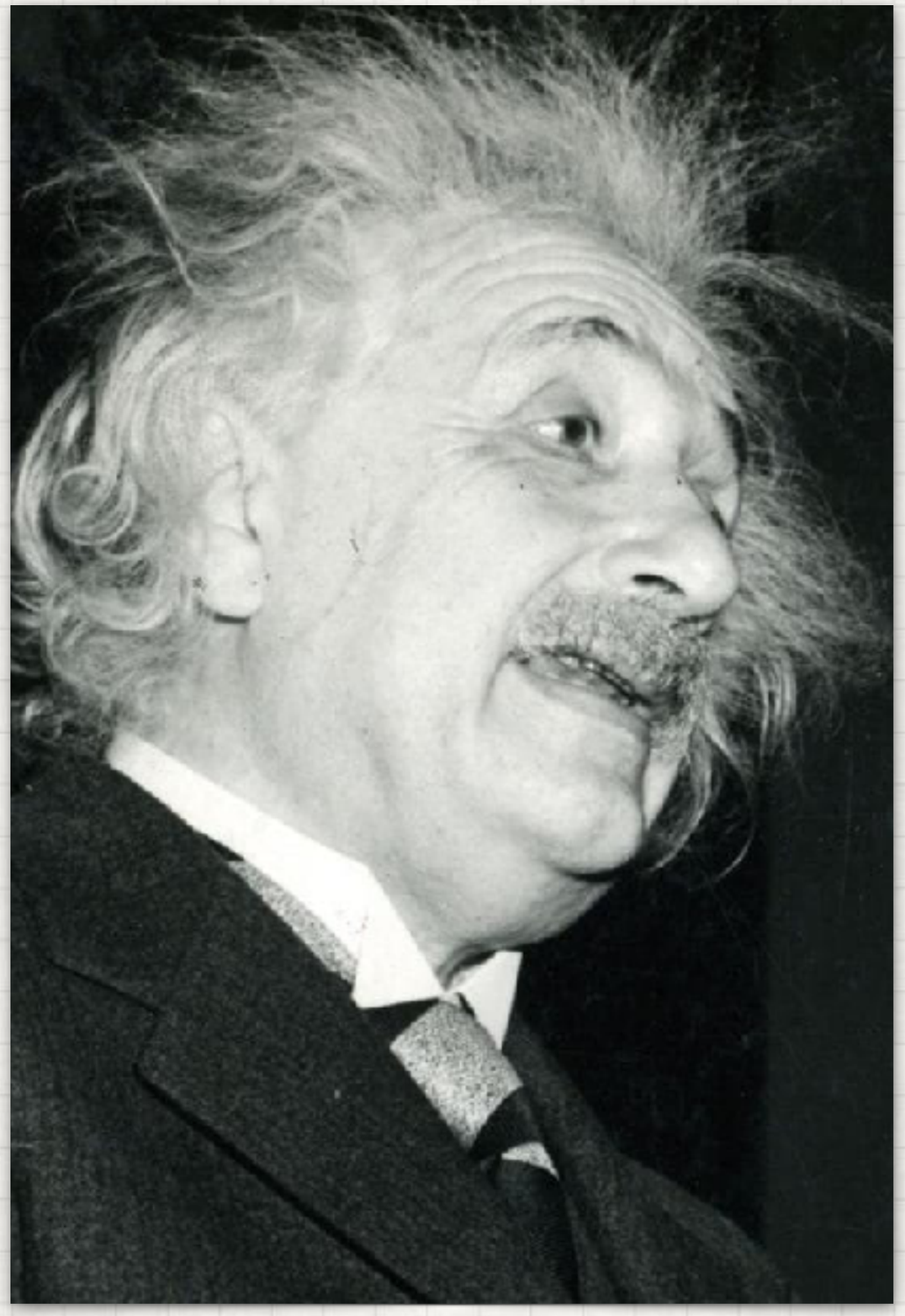
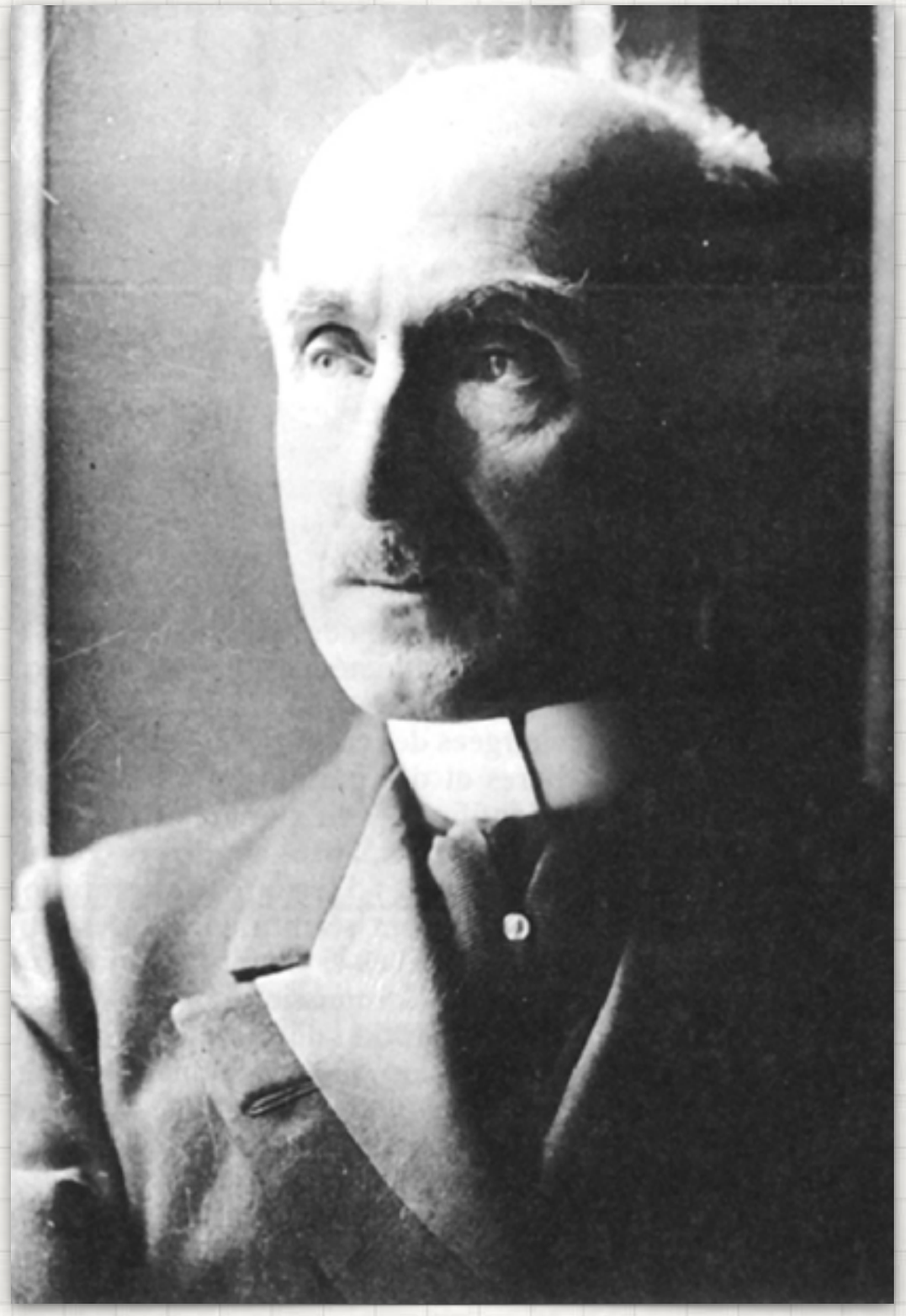




THE EINSTEIN-BERGSON DEBATE

SCIENCE AND METAPHYSICS

- Henri Bergson and Albert Einstein met on the 6th of April, 1922 at the *Société française de philosophie* in Paris to discuss the nature of time

- Einstein maintained real time was not the business of philosophy: "the time of the philosophers does not exist, there remains only [an unreal] psychological time that differs from the physicist's."

- Bergson thought philosophy did have something to contribute to our understanding of time: "The idea that science and philosophy are different disciplines meant to *complement* each other … arouses the desire and also imposes on us the duty to proceed to a confrontation."

A CRITERION OF FACTUAL SIGNI-FICANCE

Ayer

LOGICAL POSITIVISM

'THE VIENNA CIRCLE'

- Logical positivism was a movement in philosophy that started in Vienna in the 1920s and 1930s. (Hence 'Vienna Circle' or '*Wiener Kreis*')

- Moritz Schlick lead the group, which further included Otto Neurath, Rudolf Carnap, and Kurt Gödel, among others

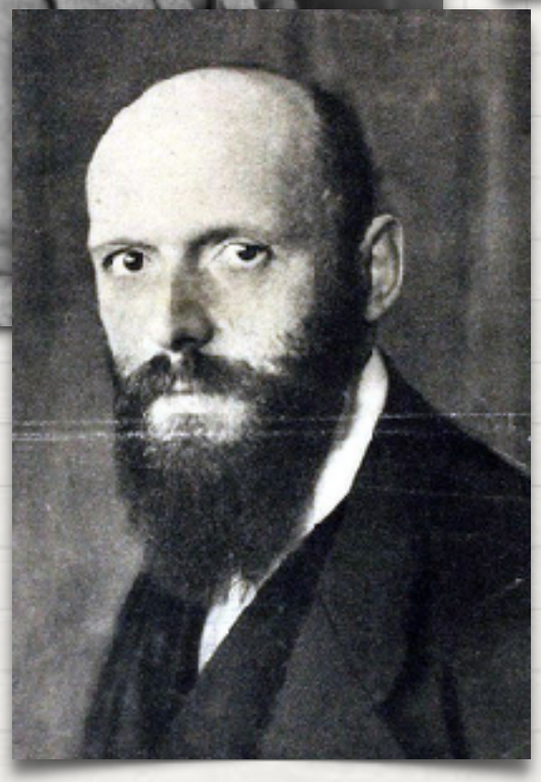
- "The fundamental thesis of modern empiricism [i.e. logical positivism] consists in denying the possibility of synthetic a priori knowledge" (Hahn, Neurath, Carnap, 1929).

- Alfred Ayer visited the circle, which inspired him to write *Language, Truth and Logic* (1936)

Schlick

Carnap

Neurath



Gödel

MEANINGFUL BUT VACUOUS?

FREGE AS A BACKDROP

- What must have made the search for a criterion extra pressing was Frege's theory of language
- According to Frege, sentences have both sense and reference (as a function of the senses of component terms)
- Because a sentence can have sense but no reference, there can be meaningful statements that purport to describe the world, but lack any factual content
- Frege's theory doesn't offer a criterion to tell on the basis of the meaning of a seemingly factual statement whether it has or lacks a truth value

THE VERIFICATION PRINCIPLE

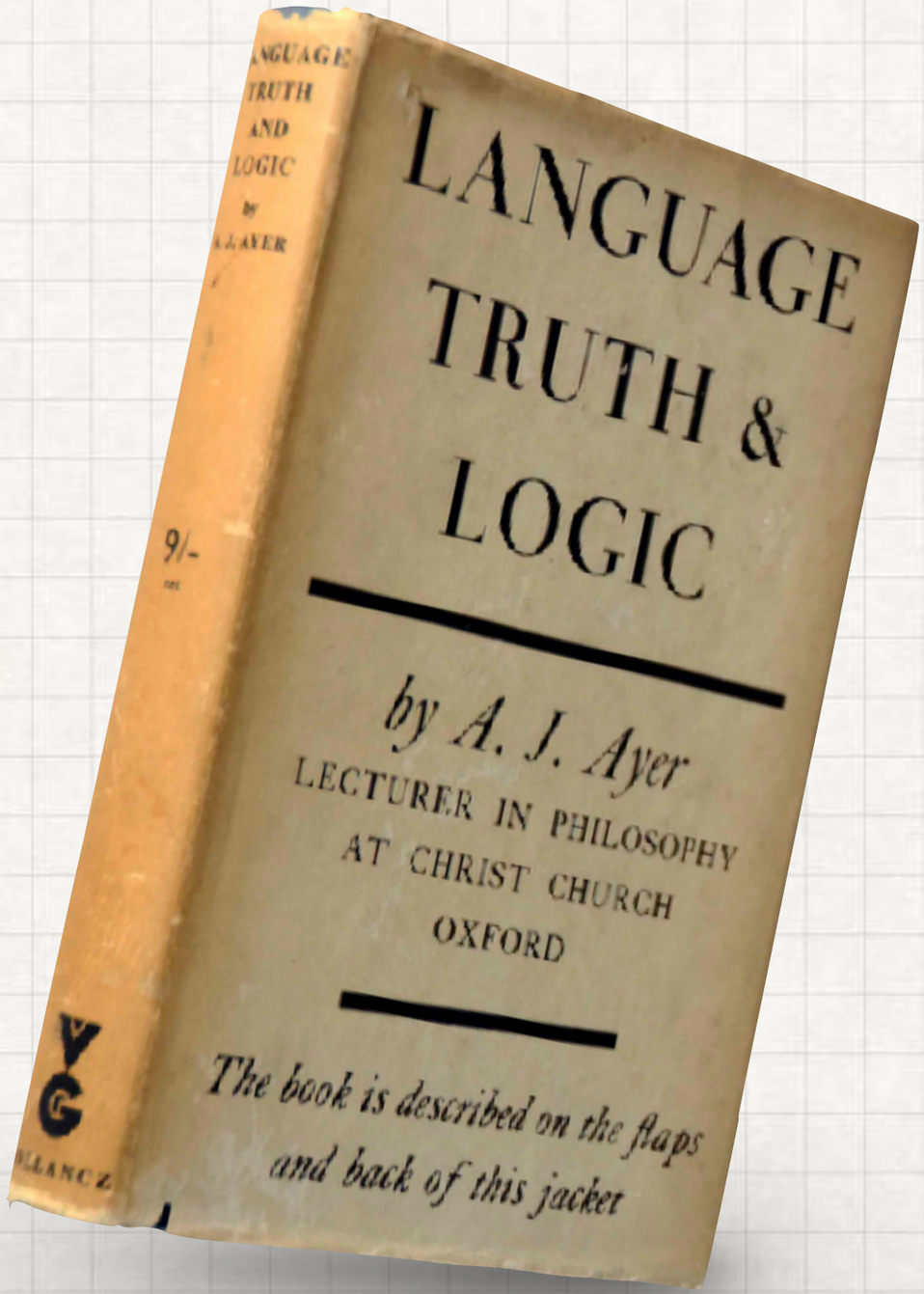
THE VERIFICATION PRINCIPLE

A CRITERION OF FACTUAL SIGNIFICANCE

- Verificationism is the view that the meaning of a sentence in a specific class of statements is given by its method of determining its truth or falsity

- Schlick: "the meaning of a statement consists in its method of verification"

- In Ayer's words: "We say that a sentence is factually significant to any given person if, and only if, he knows how to verify the proposition which it purports to express."



DAVID HUME

TRADITIONAL EMPIRICISM

- "If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion."

WHAT IS IT TO VERIFY A STATEMENT?

OBSERVATION SENTENCES

THE VERIFICATION THEORY OF MEANING

- To understand Ayer's concept of verification, we need to distinguish a special class of observation sentences ('protocol sentences'), e.g.: *'The patch before me is grey'*

- Their truth or falsehood is self-evident: an observation sentence is immediately confirmed or disconfirmed in experience, because it reports a present sense datum

- Clearly, most empirical statements are not like this (e.g. 'a flea has 6 legs and eats blood')

- But common empirical hypotheses can perhaps be translated into one or more observation sentences that jointly are logically equivalent

ANALYTIC / SYNTHETIC

THE VERIFICATION THEORY OF MEANING

- In its strongest form, the verification principle says that an empirical statement is meaningful if and only if its truth or falsity can *in principle* be logically deduced from the truth of a set of observation statements

- The theory presupposes a distinction between analytic and synthetic truths, and it does so twice over
  - First, the verification principle governs the meaning only of truths that are not purely formal or semantic, i.e. truths of logic and mathematics. So we assume that there are two classes of statements, analytic ones and synthetic ones
  - Second, deriving interesting empirical statements from a set of self-evident observation claims requires analytically true (i.e. non-empirical) premises. For example:
    1. It feels wet when I am outside (observation sentence)
    2. ‘It is raining’ is true iff it feels wet when I am outside (analytic truth)
    3. ‘It is raining’ is true (from 1,2)
    4. It is raining (synthetic hypothesis, from 3 by definition of truth)

A PROOF OF CONCEPT?

THE VERIFICATION THEORY OF MEANING

- In its simplest and strongest form, the verification theory of meaning says:
  a *statement S is verifiable if and only if there is some set of observation statements which logically entail S*

- Even this were right, it would be very difficult to give a satisfactory analysis of even quite mundane empirical statements (but see Carnap 1926 for an attempt at systematising empirical knowledge)

PROBLEMS:

FROM STRONG TO WEAK VERIFICATION

VERIFICATION PRINCIPLE IS TOO STRONG

STRONG AND WEAK VERIFICATION

- An immediate obstacle for the verification principle is that no set of observation statements is sufficient to confirm every meaningful empirical claim: e.g. universal claims

- Think about Hume's problem about induction. There is no set of observations that entails a universal claim ('all ravens are black')

- If verification requires that it is at least in principle possible to deduce an hypothesis from observation sentences ('Ravey is black', 'Rovey is black, etc…), universal claims cannot be empirically meaningful

- Yet many sciences serve up perfectly fine universal hypotheses of this sort, e.g. that all cordates are renates, or that all stars begin their lives from the collapse of material in a giant molecular cloud

A WEAKER VERSION

STRONG AND WEAK VERIFICATION

- In light of this, we can suggest a weaker idea of verification. Ayer:

> To make our position clearer, we may formulate it in another way. Let us call a proposition which records an actual or possible observation an experiential proposition. Then we may say that it is the mark of a genuine factual proposition, not that it should be equivalent to an experiential proposition, or any finite number of experiential propositions, but simply that some experiential propositions can be deduced from it in conjunction with certain other premises without being deducible from those other premises alone.[1]

- *S* is meaningful if there is some set of sentences $P_1 \ldots P_n$ and some observation sentence *O* such that (i) *O* follows from *S* together with $P_1 \ldots P_n$ but (ii) *O* does not follow from $P_1 \ldots P_n$ alone

AN EXAMPLE

STRONG AND WEAK VERIFICATION

- S is meaningful if and only if S, either by itself or in conjunction with certain other assumption(s) A, logically entails some observation statement O that is not entailed by those other statements alone

- S: ‘Every red thing is hot’
  A: ‘x is red’
  O: ‘x is hot’

- S does not by itself imply O. A does not by itself imply O. But the conjunction of A and S does imply O. So S is empirically meaningful: some observation statements are relevant to establishing its truth

ABSOLUTE NONSENSE

STRONG AND WEAK VERIFICATION

- However, this weak verification principle is vacuous. Let:
  S: 'Time is a vortex channeling the Absolute'
  A: 'If Time is a vortex channeling the Absolute, then x is hot'
  O: 'x is hot'

- S does not by itself imply O. A does not by itself imply O. But the conjunction of A and S does imply O. So S is empirically meaningful, because some observation statements are relevant to establishing its truth

- So although weak verification helps us include all the scientific hypotheses we want to include, it includes too much!

WHAT FURTHER ASSUMPTIONS?

STRONG AND WEAK VERIFICATION

- Dilemma: verification based on observation sentences is either too strong or too weak
- The second problem clearly arises because we lack a restriction on what the ‘further assumptions’ can be (this allowed us to stipulate a malicious one)
- So in the 2nd edition of Language, Truth and Logic, Ayer tries to fix the problem by offering a refined definition, which added a distinction between direct and indirect verifiability

AYER'S 'BEST SHOT'

STRONG AND WEAK VERIFICATION

- An empirical sentence *S* is meaningful if and only if *S* is either directly or indirectly verifiable

- S is **directly verifiable** iff S either is an observation statement or entails in conjunction with a set of *observation statements* (O_1,…, O_n) some observation statement not entailed by that set of observation statements alone

- S is **indirectly verifiable** iff

  1. S entails in conjunction with a set A of statements (A_1,…, A_n) some observation statement O not entailed by that set alone, and
  2. Every statement in A is either (a) directly verifiable, or (b) analytic, or (c) capable of being independently shown to be indirectly verifiable

- This allows us to restrict the further assumptions we're allowed to make: they sentences in A can only be either directly verifiable, or analytic, or independently indirectly verifiable

HOWEVER

It would seem, however, that the amended definition of verifiability is open to nearly the same objection as the original definition. For let O_1 , O_2 , O_3 be three "observation-statements" (or "experiential propositions") such that no one of the three taken alone entails any of the others. Then using these we may show of any statement S whatever that either it or its negation is verifiable, as follows. Let $\bar{O}_1$ and $\bar{S}$ be the negations of O_1 and S respectively. Then (under Ayer's definition) $\bar{O}_1 O_2 \vee O_3 \bar{S}$ is directly verifiable, because with O_1 it entails O_3 . Moreover S and $\bar{O}_1 O_2 \vee O_3 \bar{S}$ together entail O_2 . Therefore (under Ayer's definition) S is indirectly verifiable—unless it happens that $\bar{O}_1 O_2 \vee O_3 \bar{S}$ alone entails O_2 , in which case $\bar{S}$ and O_3 together entail O_2 , so that $\bar{S}$ is directly verifiable.

ALONZO CHURCH

CHURCH'S OBJECTION UNPACKED

STRONG AND WEAK VERIFICATION

- The objection is purely formal. Just take any three observation statements O_1, O_2, O_3 that do not entail one another, and any sentence S (e.g. 'Time is a vortex channeling the Absolute')

  Now consider S*: $(\neg O_1 \ \& \ O_2) \vee (O_3 \ \& \ \neg S)$

- We can prove that S* is directly verifiable: S* entails in conjunction with a set of *observation statements* (O_1) some observation statement (O_3) that is not entailed by that set of observation statements (i.e. O_1) alone

- But if S* is directly verifiable, then S seems indirectly verifiable. For S entails in conjunction with a set A of statements (i.e. S*, a directly verifiable one) some observation statement not entailed by that set alone

- There's a small gap. What if O_2 is entailed by that set (i.e. S*) alone? Well, in that case ¬S is directly verifiable. Also this we can prove. If S* implies O_2, then the conjunction of O_3 & ¬S implies O_2. But O_2 does not follow from O_3 alone. So ¬S entails in conjunction with a set of *observation statements* (O_3) some observation statement (O_2) that is not entailed by that set of observation statements (i.e. O_3) alone. (And if ¬S is directly verifiable, S is indirectly verifiable.)

University and College Union

University workers are striking to resist savage cuts to their pensions

The same agenda that tripled fees and cut grants for the poorest students: turning universities into businesses against the interests of staff and students

The future of universities is at stake: please stand in solidarity with striking staff

- **Don't enter university buildings on strike days: 22–23, 26–28 Feb, 5–8 & 12–16 Mar**
- **Don't attend lectures on strike days**
- **Tell staff you support them**
- **Come to our teach-outs! https://goo.gl/dAZ71G**

THE RATIONALE FOR THE CHANGES IS DUBIOUS

There is no crisis in USS: the alleged deficit of £7.5 billion is largely fictional, produced by a remarkably opaque and pessimistic valuation – driven by the leadership of Oxford and Cambridge – that is optimistic in only one respect: how much longer staff will live to burden the scheme.

Waseem Yaqoob, Cambridge UCU Branch Secretary

HOW CAN I SUPPORT THE UCU STRIKE AS A STUDENT?

- Don't cross any picket lines
- Tell your friends about the action
- Get your student union to stand in solidarity
- Support staff on picket lines
- Talk to people about why UCU is taking strike action
- Consider holding a strike fundraiser
- Email your VC to ask they negotiate
- If you're a postgrad join UCU and join the action