Minimalism about truth
Lecture 1

Thomas Schindler

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1 Background: The correspondence theory of truth

A proposition is true iff it corresponds to a fact

According to this position, truth is a *relational* property involving a characteristic relation (to be specified) to some portion of reality (to be specified): T(p) iff ∃f. C(p, f)

What is this relation of correspondence? What kind of thing is a fact?

Concepts for the relevant relation: correspondence, conformity, congruence, agreement, accordance, copying, picturing, signification, representation, reference, satisfaction. Various concepts for the relevant portion of reality: facts, states of affairs, conditions, situations, events, objects, sequences of objects, sets, properties, tropes.

Some philosophers do not match whole sentences with objects, but only predicates with properties and names with objects (Davidson). For example, Tarski's recursive definition of truth can be seen as a correspondence theory of truth if 'satisfaction' is understood in a certain sense.

(Traditional) Problems with the correspondence theory:

One subject matter:

> There is the standpoint we occupy when we judge that p. Then in addition there is the standpoint we occupy when we step back, and judge that the judgement that p indeed bears the right relation to the fact that p. There are indeed mental processes that we can call 'standing back': becoming cautious about p, checking one more time whether p, and so on. But these are all processes of reflecting and checking whether p. None of them introduces a separate topic,

> and yet the correspondence theory seems to demand that there is both a separate topic and a separate standpoint from which it can be judged. ... Another way of putting the point is that in examples like the mirror and the map we have access to both the original and the image, so there can be a genuine empirical investigation of their correspondence or fit. In the case of judgement, we apparently do not. To 'come upon the facts' is already to judge that things are thus-and-so. (Blackburn & Simmons, 1999, p. 7)

Scepticism:

> It is typically pointed out that we cannot step outside our own minds to compare our thoughts with mind-independent reality. Yet – so the objection continues – on the correspondence theory of truth, this is precisely what we would have to do to gain knowledge. We would have to access reality as it is in itself, independently of our cognition, and determine whether our thoughts correspond to it. (David, 2016)

For example: Putnam's model-theoretic arguments, Quine's inscrutability of reference, the problem of absolute generality.

Ontology:

> It may be a fact that if you had touched the plug you would have got a shock, or a fact that Bishop Stubbs did not die on the scaffold, or a fact that either there were more than eighteen or fewer than seven people in the room. Facts have logical complexity: not surprisingly, they have exactly as much complexity as the propositions we choose to assert. And the real world – the world of dated, particular, events and things in specific spatial and temporal orderings – just does not seem able to contain anything of this kind of complexity: negative, or disjunctive, or counterfactual situations for example. (Blackburn & Simmons, 1999, pp. 7-8)

Too narrow: Some domains, e.g. morality, do not contain facts.

Too obvious: Correspondence theories are too obvious. They are trivial, vacuous, trading in mere platitudes. Locutions from the "corresponds to the facts"-family are used regularly in everyday language as idiomatic substitutes for "true". Such common turns of phrase should not be taken to indicate commitment to a correspondence theory in any serious sense. Definitions like (1) or (2) merely condense some trivial idioms into handy formulas; they don?t deserve the grand label "theory": there is no theoretical weight behind them. (David, 2016)

2 What is deflationism?

Deflationists think that correspondence theories of truth need to be deflated; that their central notions – correspondence and fact – can play no legitimate role in an account of truth; the equivalence

'snow is white' is true iff it corresponds to a fact

is deflated to

snow is white' is true iff snow is white

Claim 1. Given a sentence A, asserting that 'A' is true (or that the proposition that A is true) is equivalent to asserting A itself. This is encapsulated in the T-schema:

$$T\ulcorner A\urcorner \equiv A$$

Note: the T-schema is not a definition of truth!!! It is a schema, having infinitely many instances, one for each sentence (proposition) A. A definition has the form 'x is true iff $\varphi(x)$'. The T-schema is at best an "implicit definition" in the sense of Hilbert, i.e. an axiomatisation of truth.

Claim 2. The truth predicate allows us to form generalisations that would otherwise be hard or impossible to express. This is the *raison d'etre* of the concept of truth, the only reason we have a truth predicate in the language at all.

Example 1: blind truth ascriptions. You had dinner with Einstein and he said something you agree with but can't remember what he said. How can you express your agreement? You say 'What Einstein said yesterday over dinner was true'. Note that you cannot just say 'I believe / agree with what Einstein said yesterday over dinner': the point is that you want to make a claim that is true iff what Einstein said is true. However, while the autobiographic statement 'I believe / agree ...' might be true, what Einstein said might be false.

Example 2: infinite truth ascriptions. Let Γ be some theory that cannot be finitely axiomatised. How can you express disagreement with the theory (if you don't know where exactly the theory goes wrong)? You say 'Some theorem of Γ is false'.

2.1 Satellite claims

- 'is true' is a primitive, undefinable, unanalysable predicate
- The truth predicate is not in the language to pick out some salient feature of the world. Truth is not a natural, complex, or substantive property.
- Truth is a metaphysically thin notion. It is not a substantial notion.

- Truth cannot play an explanatory role in any domain of science; we shouldn't need to invoke truth in order to establish any results not involving the truth predicate explicitly.

2.2 Questions and Problems

Question 1. What are the truth bearers: sentences, utterances, propositions etc?

Question 2. How strong is the equivalence: material, necessary, analytic?

Logicians usually prefer sentences because: Tarski used sentences; Quine's attack on intensional objects. There are some problems if one chooses sentences as truth bearers:

Problem 1. We often apply the truth predicate to sentences of foreign language. We can only accommodate them (if at all) through translations: "'Schnee ist weiss' is true iff snow is white'. But what if there is no translation?

Problem 2. Some instances (for sentences containing indexicals etc) are not true: "'I am in Amsterdam' is true iff I am in Amsterdam' might be false.

Problem 3. The instances of the T-schema seem only contingently true, but the equivalences should be stronger: that 'snow is white' is true iff snow is white is a contingent fact – if we had used our words differently, 'snow is white' might mean that grass is green.

3 Historical Perspective

The T-schema emerged with Tarski's Convention T (Tarski, 1935), where it is presented as an adequacy condition on a definition of truth, but the roots of deflationism date further back.

3.1 Frege: The Thought

> [...] the actor asserts nothing, nor does he lie, even if he says something of whose falsehood he is convinced. [...] Therefore it must still always be asked, about what is presented in the form of an indicative sentence, whether it really contains an assertion. And this question must be answered in the negative if the requisite seriousness is lacking. It is irrelevant whether the word 'true' is used here. This explains why it is that nothing seems to be added to a thought by attributing to it the property of truth. (Frege, 1956), (Blackburn & Simmons, 1999, p. 90)

3.2 Ramsey's Redundancy Theory

Given the transparency of truth, in most cases we can get rid of the truth predicate.

- 'Caesar was murdered' is true. $\Rightarrow$ Caesar was murdered.

- Gödel's incompleteness theorems are true. $\Rightarrow$ No consistent recursive axiomatisation which is sufficiently rich can prove all truths about natural numbers, and no consistent recursive axiomatisation which is sufficiently rich can prove its own consistency.

If we could quantify directly into sentence position, we would be able to get rid of the truth predicate in all cases.

- Everything the Pope says is true. $\Rightarrow$ For all p, if the Pope says p, then p.

- All theorems of arithmetic are true. $\Rightarrow$ For all p, if p is a theorem of arithmetic, then p.

> We have in English to add 'is true' to give the sentence a verb, forgetting that 'p' already contains a (variable) verb. (Ramsey, 1927, p. 158)

3.3 Semantic ascent and descent: Quine

For Quine, the truth predicate is an innocuous device of disquotation, or semantic ascent and descent, which is used to express general laws of logic in the object language. It appears that for him the truth predicate is typed and only applicable to sentences of one's own language.

The truth predicate is allowing us to *quantify over sentence position*, by putting these sentences into object position first.

> We were able to phrase our generalization 'Everything is itself' without [semantic] ascent just because the changes that were rung in passing from instance to instance – 'Tom is Tom', 'Dick is Dick', '0 is 0' – were changes in names. Similarly for 'All men are mortal'. This generalization may be read 'x is mortal for all *men* x' – all things x of the sort that 'Tom' is a name of. But what would be a parallel reading of the generalization of 'Tom is mortal or Tom is not mortal'? It would read 'p or not p for all things p of the sort that sentences are names of'. But sentences are not names, and this reading is simply incoherent; it uses 'p' both in positions that call for sentence clauses and in a position that calls for a noun substantive. So, to gain our desired generality, we go up on step and talk about sentences: 'Every *sentence* of the *form* "p or not p" is true'.

3.4 Prosentential theory of truth: Grover, Camp & Belnap

The truth predicate serves the role of a prosentence: like a pronoun refers back to nouns, prosentences refer back to sentences. English could be extended with atomic prosentences: "thatt". Both uses of the truth predicate and of sentential quantifiers can be reduced to these prosentences.

- Everything the Pope says is true. $\Rightarrow$ Everything the Pope says thatt.
- All theorems of arithmetic are true. $\Rightarrow$ All theorems of arithmetic thatt.

> Like Ramsey, we do not think the truth predicate need be construed as having a property-ascribing role in ordinary English. (Grover, Camp & Belnap (Grover, Camp, & Belnap, 1975, p. 83))

3.5 Infinite disjunctions: Putnam

The truth predicate allows us to express certain infinite conjunctions and disjunctions. E.g. Putnam (1978, p. 15):

> If we had a meta-language with *infinite conjunctions* and *infinite disjunctions* (countably infinite) we wouldn't need 'true'! If we wanted to say 'what he said is true', for example, we could say
>
> (1) [He said 'P_1' and P_1] or [He said 'P_2' and P_2] or ...
>
> where the disjunction in (1) contains one disjunct for each sentence 'P_i' of the object language. But we *can't*, as a matter of fact, speak in infinite disjunctions. So, we look for a finite expression equivalent to (1). Now,
>
> (2) 'For some x, he said x and x is true.'
>
> will be equivalent to (1) provided for each i ($i = 1, 2, 3, \ldots$)
>
> (3) 'P_i' is true if and only if P_i
>
> is correct. But this is just Tarski's 'Criterion T' ...

Note that we can define 'x is true' for a language L in a language with infinite conjunctions and disjunctions. Let $A_1, A_2, \ldots$ be an enumeration of all sentences of L. Define

$$Tx \equiv_{Df} \bigvee_i (x = \ulcorner A_i \urcorner \wedge A_i)$$

3.6 Pure disquotational truth: Field

> a person can meaningfully apply 'true' in the pure disquotational sense only to utterances that he has some understanding of; and for such an utterance u, the claim that u is true (true-as-he-understands-it) is cognitively equivalent (for the person) to u itself (as he understands it). (Field, 1994)(Blackburn & Simmons, 1999, p. 353)

3.7 Minimalism: Horwich

Propositions as truthbearers

Equivalence Schema instead of T-Schema

Use theory of meaning (Horwich, 1998a)

> Just as the predicate 'is magnetic' designates a feature of the world, magnetism, whose nature is revealed b quantum physics, ... so it seems that 'is true' attributes a complex property – an ingredient of reality whose underlying nature will, it is hoped, one day be revealed by philosophical or scientific analysis. The trouble is that this conclusion ... is unjustified and false. An expression might have a meaning that is somewhat disguised by its superficial form ... The word 'exists' provides a notorious example. And we are facing the same sort of thing here. Unlike most other predicates, 'is true' is not used to attribute to certain entities (i.e. statements, beliefs, etc.) an ordinary sort of property... [it] should not be expected to participate in some deep theory of that to which it refers – a theory that articulates general conditions for its application. (Horwich, 1998b, p. 2)

> Deflationism begins by emphasizing that no matter what theory of truth we might espouse professionally, we are all prepared to infer
>
> The belief *that snow is white*
>
> from
>
> Snow is white
>
> and vice versa. And, more generally, we accept all instances of the 'truth schemata'... since our commitment to these schemata accounts for everything we do with the truth predicate, we can suppose that they implicitly define it. (Horwich, 1998b, p. 121)

> [T]he overall use of the truth predicate (including its use as a prosentence forming device) is best explained by supposing that 'is true' is

> an unanalysable predicate governed by the equivalence schema; and that the virtue of such a predicate is that it allows us to avoid the complexities and obscurities of substitutional quantification. (Horwich, 1998b, p. 125)

For Horwich, truth is clearly a type-free predicate. He thinks that restricting the admissible instances of the T-schema to truth-free sentence smacks of overkill.

4 The function of truth

There have been several diverging attempts to characterise the function of truth. Some say the truth predicate is a device for infinite conjunctions and disjunctions; some say it's a device for finite axiomatisation; some say it's a prosentence-forming device; some say it enables us to generalise on sentence places in the language.

4.1 Infinite conjunctions

If the truth predicate emulated infinite conjunctions rather than higher-order quantification, there should probably be a reasonable translation of infinite conjunctions into the language of truth that preserves derivability:

$$\frac{\{\varphi : P(\varphi)\}}{\bigwedge_{P(\varphi)} \varphi} \tag{$\bigwedge$I}$$

$$\frac{\bigwedge_{P(\varphi)} \varphi}{\varphi} \tag{$\bigwedge$E}$$

A reasonable translation τ of ($\bigwedge$I) seems to be

$$\frac{\{\tau(\varphi) : \tau(P)(\ulcorner\varphi\urcorner)\}}{\forall x(\tau(P)(x) \rightarrow Tx)}$$

If the set $\{\varphi : P(\varphi)\}$ is infinite, then this inference cannot hold in a *finitary system* unless a finite number of members of $\{\tau(\varphi) : \tau(P)(\ulcorner\varphi\urcorner)\}$ already implies $\forall x(\tau(P)(x) \rightarrow Tx)$. See (Picollo & Schindler, 2018).

4.2 Finitely axiomatising theories: Halbach

> [...] disquotationalism should not claim that an infinite conjunction and the respective sentence involving the truth predicate are equivalent sentences in a language; *they are only equivalent in their consequences* with respect to statements without the truth predicate or infinitely placed connectives. (Halbach, 1999, p. 13)

Theorem 4.1 (Halbach)**.** *If φ is only satisfied by T-free sentences, then $TB + \forall x(\varphi(x) \to Tx)$ and* PA $+ \{\varphi(\ulcorner\psi\urcorner) \to \psi : \psi \in \mathcal{L}_T\}$ *have the same T-free consequences.*

All theorems of arithmetic are true.

For every $\varphi \in \mathcal{L}$, $\{Bew(\ulcorner\psi\urcorner) \to \psi : \psi \in \mathcal{L}\} \vdash \varphi$ iff $\forall x(Bew(x) \to Tx) \vdash \varphi$.

However, in (Picollo & Schindler, 2018) it was shown that the above theorem only needs the 'elimination half' of T-schema. Moreover, proposal cannot be easily extended to type-free case.

4.3 Sentential quantification

Let $\mathcal{L}_{sq}$ extend the language of propositional logic with formula variables α_i, for each natural number i, and the quantifier $\forall$ such that α_i is a formula of $\mathcal{L}_{sq}$ and, if φ is a formula of $\mathcal{L}_{sq}$, so is $\forall\alpha_i\,\varphi$.

QPL extends standard propositional logic formulated in $\mathcal{L}_{sq}$ with

$$\frac{\varphi}{\forall\alpha_i\,\varphi} \tag{$\forall$I}$$

$$\frac{\forall\alpha_i\,\varphi}{\varphi[\psi/\alpha_i]} \tag{$\forall$E}$$

provided that α_i in $\forall$I is arbitrary.

From this we can obtain the following comprehension scheme

$$\exists\alpha\,(\alpha \leftrightarrow \varphi)$$

Theorem 4.2. *(Picollo & Schindler, 2019) There is a disquotational theory of truth Γ and a relative interpretation τ such that if $\varphi \vdash_{QPL} \psi$, then $\tau(\varphi) \vdash_\Gamma \tau(\psi)$.*

4.4 Quantification of predicate places

Just as the notion of truth allows us to generalise sentence places, the notions of truth-of (satisfaction), class, property etc. allow us to generalise predicate places.

Let $\mathcal{L}_2$ extend the language of predicate logic with predicate variables X_i, for each natural number i, such that whenever t is a term, then $X_i t$ is a formula of $\mathcal{L}_2$ and, if φ is a formula of $\mathcal{L}_2$, so is $\forall X_i\,\varphi$.

Second-order logic extends first-order logic with the following comprehension scheme:

$$\exists Y \forall y\,(Xy \leftrightarrow \psi)$$

Theorem 4.3. *(Picollo & Schindler, 2019) There is a disquotational theory of truth Σ and a relative interpretation σ such that if $\varphi \vdash_{L2} \psi$, then $\sigma(\varphi) \vdash_\Sigma \sigma(\psi)$.*

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