Knowing How without Anti-Intellectualism

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(Anti)Intellectualism

Ryle 1945

Rules and Axioms

Truth and Justification

The Debate

There are two main camps in the debate about the constituent concepts of knowledge-how. One camp, intellectualism, argues that knowledge-how involves propositional knowledge [...], whereas the competing camp argues that knowledge-how does not involve propositional knowledge - a view called anti- intellectualism. According to anti-intellectualists, whereas propositional knowledge is a certain type of belief, knowledge-how consists in abilities, skills, or dispositions [...]. (Harmon&Horne:2016)

Claims

Knowledge-that (aka propositional knowledge) typically involves knowledge-how, not the other way round. The Debate in its usual from construes the relationships between the two sorts of knowledge incorrectly.

The anti-intellectualists are right that knowledge-how does not, generally, involve knowledge-that.

However the term "anti-intellectualism" is a misnomer for an epistemic position, which takes knowledge-how seriously. This misnomer biases the Debate in a wrong direction.

Motivations (not explained in this talk)

Proof-theoretic Semantics of logical inference and

Homotopy Type theory / Univalent Foundations of Mathematics

Ryle's Intelligent Reasoner

"[T]he intelligent reasoner is knowing rules of inference whenever he reasons intelligently'. Yes, of course he is, but knowing such a rule is not a case of knowing an extra fact or truth ; it is knowing how to move from acknowledging some facts to acknowledging others. Knowing a rule of inference is not possessing a bit of extra information but being able to perform an intelligent operation. *Knowing a rule is knowing how.*" (emphasis mine).

In the later discussion Ryle's example of the *logical* knowledge-how (= knoledge how to reason) plays no rôle. The most popular later example is knowledge how to ride a bicycle.

Ryle's Intelligent Reasoner (continued)

[A]rguing intelligently did not before Aristotle and does not after Aristotle require the separate acknowledgment of the truth or "validity"of the formula. "God hath not left it to Aristotle to make (men) rational."Principles of inference are not extra premisses and knowing these principles exhibits itself not in the recitation of formula but in the execution of valid inferences and in the avoidance, detection and correction of fallacies, etc. The dull reasoner is not ignorant ; he is inefficient. A silly pupil may know by heart a great number of logicians' formulae without being good at arguing. The sharp pupil may argue well who has never heard of formal logic.

Two different arguments mixed

- (i) "Principles of inference are not extra premisses and knowing these principles exhibits itself not in the recitation of formula but in the execution of valid inferences." (the same as above)
- (ii) One can possibly be an efficient reasoner without knowing rules of formal logic. In other words, one's knowledge how to reason in certain cases is not based on knowing formal rules. In other words, knowledge-how may have an implicit / tacit form.

Explicit and Tacit Knowledge

Thus the knowledge-how can be either of transferable explicit form (knowing a written rule), or of tacit form (be a demonstrable individual capacity to perform operations of certain type).

Similarly, the propositional knowledge can be either of explicit form (knowing a proposition expressed by a written sentence) and of tacit form (say, in the form of tacit assumption: cf. Polanyi 1958 "personal knowledge").

Confusion

The distinction between explicit and tacit forms of knowledge is orthogonal to the distinction between knowledge-how and knowledge-that.

But in the above quote Ryle confuses the two distinctions and takes the possible tacit character of knowledge-how for its essential property. When Ryle famously calls the "intellectualist legend " the view according to which all knowledge (including knowledge-how) is ultimately propositional, he apparently has the tacit form of knowing-how in his mind. This is the historical origin of the continuing Debate presented above.

In what follows I leave the issue of tacit knowledge aside and discuss only explicit form of knowledge-how, i.e., knowledge of certain rules and systems of rules. The tacit knowledge (propositional or not) is separate topic, which I leave for a different occasion.

Rendering Rules as Propositions

Attempts to reduce knowledge-how to knowing certain proposition typically apply a linguistic paraphrase. Here is a simple mathematical example. Euclid's First Postulate reads verbatim as follows:

P1: *To draw a straight-line from any point to any point*

Observe that P1 is not a proposition but an elementary rule that validates a construction of straight line from a pair of distinct points.

Rendering Rules as Propositions (continued)

However in the modern (as well as in some older) versions of Euclid's theory it is usually replaced by one of the following propositions:

Given two (different) points it is always possible to produce a straight segment from one given point to the other given point.

Given two (different) points there exists a straight segment having these given points as its endpoint.

which are more apt for being formalized by standard logical means (even if the former requires a modal logic).

Rendering Rules as Propositions (continued)

The common linguistic intuition suggests that the paraphrased versions of First Postulate "express the same content" and thus the paraphrase is innocent. However a closer logical analysis does not justify this intuition.

I don't know about a logical theory that satisfactorily explains what is going on when "rules are translated into axioms" as above. In fact, these translation require a full rebuilding of the architecture of Euclid's theory (cf. Hilbert's 1899 version of Euclid). This is an evidence that such a propositional translation of rules is not logically innocent.

Deduction Property

Theory T is said to have the *Deduction Property*

if $\Gamma, F \vdash G$ entails $\Gamma \vdash F \to G$ for all Γ, F and G.

(also on the constructive reading)

A philosophical Defence

It is easy to argue in favour of the explicit form of knowledge-how on pragmatic grounds by pointing to its importance in today's technology, society and its economics, etc. Think of administrative regulations, law, all sorts of technological instructions, computer algorithms. However I would like to take now a different line of defence.

Let me, however, for the sake of the argument to agree with the "intellectualists" that the only sort of knowledge deserving the name is knowledge of *truth*. This commits me to saying that the only sort of knowledge that deserves its name is the propositional knowledge.

Knowledge as Justified True Belief

What amounts for a truth (= some true proposition P) to be known by an epistemic agent? The traditional answer, which is suitable for my present purpose, is this:

agent A knows P iff A *believes* in P and this believe is *justified*.

Justification

Let us focus on *justification*. Justification is the same as proof in the most general sense of the word that covers empirical evidences used in natural sciences, mathematical proofs, historical evidences and evidences given in court. As far as we are talking about Science, History and Law acquiring the relevant evidences and using them for supporting relevant claims requires a lot of knowing how to do this.

A part of this knowledge-how qualifies as logical in the received sense of the word but a significant part does not. Think about experimental methods applied for acquiring sufficient evidences of the existence of Higgs boson.

Justification (continued)

Thus the *justification* of one's belief, which according tho the widely accepted view is a proper element of *propositional* knowledge, generally, requires a significant bulk of knowledge-how.

Some exceptions from this rule are possible (e.g. a unique non-reproducible experience of a person who occasionally meets a martian or happen to be the sole surviver of a catastrophe) but the epistemic status of such cases is not quite clear and in any event such cases don't play a major role in the current epistemic practices.

HoTT provides an elegant mathematical framework in which the same system of rules applies both to propositional and non-propositional types and terms, and non-propositional terms serve as evidences for appropriate propositions.

Surely the same and related knowledge-how can be and actually is used also for non-epistemic purposes.

Knowledge-how is a more primitive form of knowledge which is a necessary element of any propositional knowledge.

The suggested picture reverses the standard "intellectualist" picture according which the relevant propositional knowledge in some sense grounds any instance of knowledge-how.

Certainly the propositional knowledge can also have an impact on knowing how, e.g. when some new fundamental physical knowledge having the propositional form is used for developing new technologies or a theory of Ethics is used for formulating and implementing new laws and regulations. However, generally, the knowledge-how does not require such a propositional theoretical ground (at least if the concept of knowing-how is understood liberally).

THANK YOU!