Conceptual Analysis meets "Two Dogmas of Empiricism"

David Chalmers (RSSS, ANU)

Handout for Australasian Association of Philosophy, July 4, 2006

1. "Two Dogmas of Empiricism"

The two dogmas are (i) belief in an analytic/synthetic distinction, and (ii) reductionism (every meaningful statement is equivalent to a statement about experience). I'll focus on Quine's most influential arguments against (i), especially construed as arguments against conceptual analysis and an apriori/aposteriori distinction.

Sections 1-4 of "Two Dogmas" argue that analyticity can be understood only via cognate notions such as meaning, definition, synonymy, etc, leading to a circle. This argument is widely rejected, as such circles are common with philosophically important notions.

Section 5 argues that sentences cannot be associated with sets of confirmatory experiences, because of the underdetermination of theory by evidence. This material is specific to the second dogma.

The most influential part of "Two Dogmas" by far is the short section 6, especially the first two paragraphs.

> "The totality of our so-called knowledge or beliefs … is a man-made fabric which impinges on experience only along the edges. Or, to change the figure, total science is like a field of force whose boundary conditions are experience. A conflict with experience at the periphery occasions readjustments in the interior of the field. Truth values have to be redistributed over some of our statements. ... But the total field is so undetermined by its boundary conditions, experience, that there is much latitude of choice as to what statements to re-evaluate in the light of any single contrary experience. No particular experiences are linked with any particular statements in the interior of the field, except indirectly through considerations of equilibrium affecting the field as a whole.
>
> If this view is right, it is misleading to speak of the empirical content of an individual statement -- especially if it be a statement at all remote from the experiential periphery of the field. Furthermore it becomes folly to seek a boundary between synthetic statements, which hold contingently on experience, and analytic statements which hold come what may. Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system. Even a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws. Conversely, by the same token, no statement is immune to revision. Revision even of the logical law of the excluded middle has been proposed as a means of simplifying quantum mechanics; and what difference is there in principle between such a shift and the shift whereby Kepler superseded Ptolemy, or Einstein Newton, or Darwin Aristotle?"

The arguments of paragraph 1 are directed at an *Aufbau*-style view and the second dogma, but the arguments of paragraph 2 are directed at the analytic/synthetic distinction. The crucial points are:

(1) "Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system."

(2) "No statement is immune to revision."

Many take these points to suggest either that no sentences are a priori, or that no principled distinction can be drawn between those that are a priori and those that are not.

Response [Grice and Strawson, Carnap]: Any *sentence* can be held true come what may, and no *sentence* is immune to revision. But this holding-true and revision will often involve changing the meaning of the sentence. If so, it has no bearing on the status of the original sentence as analytic or a priori.

Quinean response: (1) The appeal to meaning here is circular [cf. Sections 1-4]. (2) There's no *principled basis* for classifying some cases as involving conceptual change and others as involving conceptual constancy.

Project: investigate the prospects for drawing a principled distinction here, using tools drawn from

(i) 2D-style conditional conceptual analysis
(ii) Bayesian confirmation theory

I won't aim to do this on wholly Quinean terms (e.g. radical interpretation, naturalized epistemology) but on terms acceptable from a reasonably neutral perspective.

2. Conditional conceptual analysis

Traditional conceptual analysis: find definitions of most expressions in terms of more basic expressions: e.g. *knowledge = justified true belief*

Problem: almost every purported definition has counterexamples (e.g. Gettier), so most expressions do not seem to have counterexample-free (short?) finite analyses.

Conditional conceptual analysis: Articulating and systematizing conceptual judgments about the application of expressions to specific scenarios – roughly, epistemically possible states of the world. E.g.

given a 'knowledge'-free specification of a Gettier scenario, speakers can determine the extension of 'knowledge' with respect to that scenario.

given a 'water'-free specification of a Twin Earth scenario, speakers can determine the extension of 'water' with respect to that scenario.

This ability yields a raft of conditionals associated with an expression, for specific scenarios. E.g.:

$D_1 \rightarrow$ S knows that P
$D_2 \rightarrow$ S does not know that P
…

We can thereby associate expressions with (primary) *intensions*: functions from scenarios to extensions. The intension of S (for a subject) is true at a scenario w iff $D \rightarrow S$ (for that subject), where D is a specification of w.

[Details: (i) a scenario might be a centered world or a maximal epistemic possibility; (ii) a specification of w is a complete truth about w in a limited canonical vocabulary, e.g. physical/phenomenal/indexical/plus; (iii) the conditional $D \rightarrow S$ is discussed below.]

These intensions might serve as a relevant sort of meaning, for distinguishing cases of conceptual change from cases of conceptual constancy [cf. Carnap, "Meaning and Synonymy in Natural Language"].

3. "Any statement can be held true, come what may."

Example: Fred asserts at t_1: 'All bachelors are tidy'

Prima facie, this statement is contingent and synthetic, but Fred could hold onto it in face of any apparently countervailing evidence, by adjusting ancillary claims.

- Faced (at t_2) with a untidy unmarried man: "He's no bachelor! Bachelors must be over 30, and he's only 25."
- Faced (at t_3) with a 35-year-old with a dirty apartment: "He is tidy! Look at his well-organized sock drawer."

Question: Does the move from t_1 to t_2 [or t_3] involve conceptual change?

Here the framework of conditional conceptual analysis says that there is a relevant change of meaning iff there is a change in the conditionals that Fred associates with 'bachelor', and so a change in intension.

Let B be 'All bachelors are tidy'.
Let D specify a scenario with 25-year-old unmarried men in dirty apartments.

Diagnostic question: At t_1, what is the status of $D \rightarrow B$ for Fred? I.e. how would Fred rationally respond to "If there are 25-year-old unmarried men with dirty apartments, are all bachelors tidy?" (and related questions).

> If "yes": then $D \rightarrow B$ holds for Fred at t_1 and t_2. If so, there is no need to postulate a change in intension: just a nonstandard intension all along. (E.g. one that picks out only unmarried males over 30.)
>
> If "no" [more plausibly]: then $D \rightarrow B$ holds for Fred at t_2 but not at t_1. This suggests a change in intension: initially, the intension associated with B is false at the scenario, but the intension later associated with B is true at the scenario.

Call the first sort of case, with judgment at t_2 mirroring the status of a conditional at t_1, a *prefigured* judgment, while the second sort of case, with judgment at t_2 going against the status of a conditional at t_1, a *postfigured* judgment. Rough idea: postfigured judgments but not prefigured judgments correlate with conceptual change.

But: what exactly is the relevant status that a conditional $D \rightarrow B$ is required to have?

Official answer of conditional conceptual analysis: the intension of S is true at w iff $D \supset B$ is a priori knowable by that subject, on idealized rational reflection.

> This way, changes in meaning will track changes in apriority. But we haven't broken out of the Quinean circle. At best, we've accommodated the Quinean data within a framework presupposing the a priori, grounded in claims about the apriority of certain conditionals.

A related idea: the intension of S is true at w iff the rational conditional probability $p(B|D)$ for the subject is high.

> One can argue that this characterization gives the same results as the earlier characterization (at least if D is sufficiently complete, and we idealize appropriately). This notion isn't defined in terms of apriority, analyticity, etc, so it offers more of a route into the Quinean circle.

4. Bayesian analysis

We can analyze the situation in Bayesian terms appealing to hypotheses and evidence, rather than the full apparatus of scenarios and intensions. Assume a Bayesian framework on which sentences are associated with unconditional and conditional probabilities for subjects at times. Let E be the total relevant evidence that Fred acquires between t_1 and t_2: e.g., that there is a 25-year-old unmarried male with such-and-such living situation.

Question: what is Fred's conditional probability p(B|E) at t_1?

In the "prefigured" version of the case, p(B|E) is high at t_1. Then Fred's accepting B in light of E can be seen as standard updating of belief by conditionalization.

In the "postfigured" version of the case, p(B|E) is low at t_1. Then Fred acquires E as total relevant evidence, but still accepts B. This is a violation of conditionalization.

Such violations can occur when:

(i) E isn't the total relevant evidence – but we can stipulate that it is.
(ii) The subject isn't fully rational at stage 1 or 2 – but we can stipulate rationality.
(iii) Indexicals are involved – not relevant here.
(iv) There is conceptual change, with change in B's meaning between stages – bingo.

This provides strong reason – even without bringing in considerations about apriority – to classify this as a case of conceptual change.

More generally, given a sentence S that is rationally held true "come what may", i.e. in light of potentially conflicting evidence E:

(1) If p (S|E) is initially low, this will be a case of conceptual change.
(2) If p (S|E) is initially high, this need not be a case of conceptual change.

This gives us some independent grip on the distinction between cases involving conceptual change and those that do not.

To establish that every sentence can be held true come what may *without conceptual change or irrationality*, Quine would need to argue that for all sentences S and all potential evidence E, p(S|E) is high (or at least, is not low). But this is obviously false.

This suggests that it is not true that any sentence can be held true come what may, without conceptual change or irrationality.

Underlying principle: there is a constitutive connection between *rational inference* and conceptual constancy. If [A, A→B, therefore B] is a principle of rational inference, then anyone who violates it (diachronically, for sentences A and B) without change in the meaning of A or B is irrational. Likewise, anyone who rationally violates it is engaged in conceptual change.

5. "Any statement is open to revision".

Example: C = 'All cats are animals' [Putnam].

This might seem paradigmatically analytic/a priori. But let E specify evidence confirming that that the furry, apparently feline creatures that inhabit our houses are actually remote-controlled robots from Mars, while the other creatures that we see are all organic. Putnam argues that if we discovered that E obtains, we would reject C.

Diagnostic question: What is our initial conditional probability p(C|E)?

If p(C|E) is low [Putnam gives us reason to accept E→C *now*]: then this is a prefigured judgment, compatible with conditionalization. In this case, C is not analytic/a priori to start with (at least not in a sense requiring the possibility of certainty on ideal reflection).

If p(C|E) is high, but we reject C upon obtaining total relevant evidence E: this is a postfigured judgment that violates conditionalization. So this is a case of conceptual change or irrationality.

To maintain [within a Bayesian framework] that any statement is open to revision *without conceptual change or irrationality*, Quine needs the claim that for any sentence S, there is some possible evidence E such that a subject's rational conditional probability p(S|E) is low.

This claim is not as obviously false as the analogous claim about holding true come what may, but it is not clear what the grounds are for accepting it.

(i) Quine's official support involves underdetermination, ancillary claims, etc – but this sort of revision often involves violations of conditionalization, so it does not support the claim about conditional probability.

(ii) Almost any claim could be rationally rejected given testimony of an apparent epistemic superior. But (a) this applies only to nonidealized conditional probabilities, and (b) this will often be misleading evidence against S, which does not entail that S is not a priori. A plausible argument requires minimally that S could be *correctly* rejected.

(iii) It is even less clear that for every claim S there is some *scenario* with specification D such that p(S|D) is low. [What about S = D⊃T?]

(iv) Even if there is, we can still use these conditionals to define intensions which can serve as a relevant sort of meaning, with a corresponding analytic/synthetic distinction. At worst, it follows that few statements are analytic.

In any case, conditionalization again gives us a grip on the distinction between revisions that involve conceptual change vs those that do not.

6. Quinean responses

1. Given the underdetermination of theory by evidence, ideal conditional probabilities p(S|E) are not well-defined.

Response: All we need is that (i) sentences as used by subjects are associated with approximate conditional probabilities, in virtue of the subjects' dispositions (to make conditional judgments, accept betting odds, etc), and (ii) that these conditional probabilities can be assessed as rational or irrational (in virtue of the associated judgments, bets, etc being assessed as rational or irrational).

If there is no fact of the matter about whether a high or low conditional probability for p(S|E) is rational, there is plausibly also no fact of the matter about whether accepting or rejecting S in light of E is rational. This leads to scepticism about rational judgment.

Also, the underdetermination is arguably avoided when evidence is replaced by scenario specifications.

2. Bayesian principles are themselves revisable in light of empirical evidence.

Response: It's not clear that one should accept this, any more than one should accept that logical principles are revisable. But in any case, it would take radical evidence to rationally revise these principles – not the sort of mundane evidence involved in the cases above. So this point does not affect the diagnosis of conceptual change in these cases.

3. Within a Bayesian framework, violations of conditionalization can arise without conceptual change or irrationality by resetting fundamental priors.

Response: On a Bayesian framework, this is standardly seen as a violation of diachronic rationality. In any case, revision of this sort is not evidence-driven, and so is unQuinean.

4. A principled line between conceptual change and irrationality cannot be drawn, given underdetermination in what counts as rational. Some hard cases, e.g. revising logic in light of quantum mechanics, are not easily classified as either.

Response: The reply to Quine's argument does not require drawing a line here. In any case, as long as there are clear cases of rational judgment, the existence of unclear cases entails at worst a vague distinction, not a nonexistent distinction. In effect, the current framework suggests that cases of revisability will involve at least one of the following three diagnoses (i) non-apriority all along; (ii) conceptual change, or (iii) nonideal rationality. Hard cases (e.g. revising logical principles in light of QM) could come in all three versions (for different subjects), and perhaps in versions indeterminate among the three. Indeterminate versions will best be seen as cases of semantic indeterminacy.

7. Summary

Quine is right that any statement can be held true come what may, and that no statement is immune to revision. But these phenomena are quite compatible with a robust analytic/synthetic distinction and a robust notion of meaning. Quine is not right that any statement can be held true come what may *without conceptual change or irrationality,* and likewise for revision. We can pin down the distinction between cases involving conceptual change or irrationality using either conditional conceptual analysis or Bayesian analysis.

We can see this response to Quine on two levels:

(i) Defending conceptual analysis on its own ground. If we use standard conditional conceptual analysis, we presuppose a notion of apriority in characterizing the conditionals, and argue that such a framework can accommodate all Quine's data. This does not provide an independent grounding for the notion of the a priori (although it delimits its grounding role). But for the same reasons that most philosophers reject Quine's arguments in sections 1-4 of "Two Dogmas", no such independent grounding is required.

(ii) Defending conceptual analysis on partly independent grounds. If we use a Bayesian analysis, we need only assume a notion of conditional probability and of rationality. This assumes normative notions, but does not obviously assume the notion of apriority, so gives some independent purchase on the cases. In effect, constitutive connections between rational inference and conceptual change are used to make inroads into the Quinean circle.

We should not make this claim too strong. We have not grounded the notion of apriority in wholly independent terms. One might be tempted to define a (strongly) a priori statement as a statement S for which the ideal conditional probability $p(S|D) = 1$ for all scenario specifications D. But there will be residual issues:

(i) Can one define the class of scenario specifications without using the notion of apriority?
(ii) Can we deal with potential exceptions to the thesis (e.g. due to scenarios involving misleading evidence, cognitive deficit, etc)?
(iii) Can the notion of ideal conditional probability be understood in a way wholly independent of the a priori?

Still, even without a reductive account of apriority, we have enough of an antecedent grasp on the relevant notions that these notions provide at least an illuminating tool for analysis. And our grip on principles of conditional rational inference helps us diagnose cases of conceptual change.

All this suggests that Quine's arguments from revisability and from holding-true do not threaten an analytic/synthetic distinction or the program of conceptual analysis.