Is Everything Revisable?

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Over the decades, the claim that everything is revisable (defended by Quine and others) has played an important role in Epistemology and Philosophy of Science. Some time ago, Katz (1988) argued that this claim is paradoxical. This paper does not discuss this objection but rather argues that the claim of universal revisability allows for two different readings but in each case leads to a contradiction and is false.

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Quine influentially claimed that "no statement is immune to revision" (Quine 1961: 43). But what does it mean to say that "every statement is revisable"? Let us assume that some subject S is revising some statement expressing some proposition p at some time t just in case S has accepted or held true or believed the statement up to t but is, at t, not accepting it or holding it true or believing it any more; furthermore, S's dropping of the statement is based on good reasons (otherwise the claim of universal revisability would be trivial, given that people can give up views for all kinds of motives, including very irrational ones). The notion of revisability used here is omissive rather than commissive: Revising the statement that p involves giving it up but not necessarily adopting the statement that not p (in other words, it involves "contracting" one's views with respect to p). There is also the question what the unit of revision is: statements, sentences, utterances, or propositions? Fortunately, nothing much depends on which answer we choose here. We can choose propositions as the units of revision, with "p" ranging over them. This is for the sake of simplicity; choosing one of the other candidates above as units of revision will only make the exposition more convoluted. Hence, one can say this: One is revising some (belief that) p at some time t just in case one has believed that p up to t but is, at

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t, not believing that *p* any more; furthermore, the dropping of one's belief that *p* is based on good reasons.[1]

Is this claim of universal revisability true? Jerrold Katz (1988: 72–74), for instance, argued that it is paradoxical. I will not discuss any objection like that here; my argument differs from Katz's and similar ones.[2] It is also not the aim of this paper to give an interpretation or discussion of either Quine or Katz.[3] Rather, I will argue that, given plausible assumptions, the claim of universal revisability (as explained above) turns out to be false and leads to contradictions.[4]

1. Wide Revisability

Two main readings of the revisability claim can be distinguished.[5] First, a wide-scope reading: It is possible to revise everything simultaneously. Dropping (for the sake of simplicity only) the reference to time, we can also put it the following way (with "Rev" for "is being revised"):[6]

(1) ◊ ∀*p* Rev *p*.

If (1) is true, then it is also true that: ◊ Rev (1).

Second, there is a narrow-scope reading according to which each proposition

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1. One such reason could be that one discovers that one's sources of evidence are not reliable and leave it open whether *p* or whether not *p*. Quine and others were or are strongly opposed to accepting the existence of propositions (as well as the use of modal notions: see below) but these debates won't be taken up here.

2. Katz focuses on the role of constitutive principles of belief revision (especially logical principles) and their role as premises in an argument leading to their rejection.

3. See Adler (2008: especially 285–286) for a defense of Quine against Katz. See also Resnik and Orlandi (2003: 301–309), and in particular Colyvan (2006) for a more direct critique of Katz. For a modified Katzian argument see Elstein (2007). For Quine on revisability see, e.g., Ebbs (2016).

4. I will use principles here which are axioms or theorems in S5 but not in some other systems of modal logic like, e.g., S4. I do find that these principles capture our ordinary notions of and inferences about the modalities very well but this is not the place to defend them in any detail; such an attempt would require a very different paper. Similarly, a discussion of the claim of universal revisability given other systems of modal logic would be very interesting but, again, require a different paper. I am happy to admit that in this sense this paper is restricted to the likes of S5.

5. I am leaving aside the interpretation of the claim as not truth-apt; see Tamminga and Verhaegh (2013). The revisability claim is usually not being presented and not interestingly taken in this way.

6. "Rev (x)" is thus an ordinary predicate (like, e.g., "three feet tall (x)"). It is not an operator and certainly not a modal operator. One might wonder whether "revisability" is a normative predicate, given that what is meant is revisability for a good reason. We can leave this question open here because even if the predicate is a normative one this would not affect the logic of the argument (it would not require the use of principles of epistemic or of deontic logic).

can be revised at some point. Even if we cannot give up everything in one fell swoop, no single proposition is immune to revision:

(1*) $\forall p \Diamond$ Rev p.[7]

If (1*) is true, then it is also true that: $\Diamond$ Rev (1*).

Let us first look at

(1) $\Diamond \forall p$ Rev p.

Could this be false? Many find this suggestion plausible. Suppose that

(2) $\Diamond$ False (1).

From (2) it follows that[8]

(3) $\Diamond$ not $\Diamond \forall p$ Rev p.

One does not have to accept the alethic modal logic S5 (see, e.g., Hughes & Creswell 1996: 52, 59) to accept the plausible claim that whatever is possible is necessarily possible. Given this (plus the definitions of the box- and diamond-operator) (1) entails

(4) not $\Diamond$ not $\Diamond \forall p$ Rev p.

Since (3) and (4) contradict each other, (1) and (2) cannot both be true (given the plausible assumptions made above). Either (1) is necessarily true or it is false and (2) is true. Alternatively one could go from (3) (with the support of S5) to

(5) not $\Diamond \forall p$ Rev p,

which contradicts (1). We have to give something up (though not necessarily everything). What should be given up then?

Here is an argument in favor of (2) and against (1). (1) is either necessarily

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7. Leaving aside possible qualms about quantifying into modal contexts; see the classics Quine (1966) and Kaplan (1968).

8. Assuming that (a) p is false iff p is not true, and that (b) p is not true iff not p. At several points in the text I am going back and forth between object- and meta-language. Since this does not pose a problem for my argument, I decided to go with ease of exposition; I trust that there won't be confusion and leave aside more formal representations of the argument.

true (a) or false. It is very hard to imagine how it could be merely contingently false. If (1) is contingently false, then there is a possible world w in which it is contingently true. However, in w it would then be true and also necessarily true (see above). Hence, there cannot be a world in which (1) is contingently false. Hence, it isn't. We may then assume that if (1) is false it is necessarily false (b).

(a) Suppose (1) is true, necessarily true. We may assume that even non-ideally rational subjects would come to recognize a necessary truth of this kind and recognize it as necessary (when considering it). I, at least, cannot see how rational subjects could (when considering a potential revision of their belief in such a necessary truth) have a good reason to deny and not affirm such a necessary truth. One might object that there are empirical necessities which one might rationally deny. Suppose Mark Twain is Samuel Clemens, and necessarily so (see, e.g., Kripke 1980: 34–38). Someone might then receive misleading information from, say, an English Literature professor and reasonably come to believe that Mark Twain was a different person than Samuel Clemens. Wouldn't such a person have a good reason to deny such a necessary truth? In reply, one could even concede this particular point but also insist that our claim (1) is very different from empirical identity statements (like "Samuel Clemens = Mark Twain" or also "Water = H_2O"). But what then about a different case? Consider an a priori necessary truth like Fermat's conjecture. Couldn't, for instance, some mathematician of the 18th century have had good reasons to deny or not affirm the truth of the conjecture? To be sure, under certain circumstances they might have been epistemically blameless to do so but even that wouldn't turn their reasons to do so into good reasons. What about a necessary truth that is so complex that even a highly rational human being could not grasp it? This is not a problem here because a highly rational human being would not be able to adopt, revise or even entertain that belief in the first place (see above on the notion of revision).[9]

Since revisability is revisability for good reasons, we should conclude that there is no good reason, even for non-ideally rational subjects, to revise (1). In other words, (1) is not revisable. Hence, (1) is false if it is true (which is our assumption for reductio). Hence, (1) is false. Since (1) is also true if it is true, it is both true and false if it is true. Hence, (1) is false and leads to a contradiction.

(b) Suppose now that (1) is false. Then it is, of course, also possibly false and (2) is thus true. In both cases (a, b) we have to conclude that (1) is false and (2) is true: Not everything is revisable (in the sense of (1)).

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9. If reasons are factive (see, e.g., Littlejohn 2012), then one cannot have reasons to hold a belief in a (necessary) falsehood or to deny any (necessary) truth (though one might have factive reasons to suspend belief). I don't want to discuss, adopt or even defend this controversial view here.

2. Narrow Revisability

But perhaps we should rather choose the narrow-scope reading:

(1*) ∀*p* ◊ Rev *p*.

If we assume, paralleling the above, that this could be false, we get

(2*) ◊ False (1*).

Reformulated, this turns into

(3*) ◊ not ∀*p* ◊ Rev *p*.

Given universal instantiation (UI)[10] and given the unproblematic assumption (unproblematic here; see Footnote 1) that there are propositions (EA), (1*) entails a list of its instantiations n of the form

(4*) ◊ Rev (n/*p*).

Call this list "L".

(3*) entails that it is possible that there is a proposition that cannot be revised. If propositions are—as can be plausibly assumed—abstract objects and exist in all possible worlds,[11] then we can use the following inference rules (with "F" as a predicate variable):

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10. For this kind of way of deriving the contradiction in general see the brief passage in Colyvan (2006: 7).

11. What if an actual particular does not exist in some non-actual possible world? Suppose Moses did exist but would not have existed under certain circumstances. Then one could perhaps argue that singular propositions involving Moses would not exist under such circumstances even though they exist in the actual world. See for this, e.g., Kripke (2013: 39), Plantinga (1983), Williamson (2002), and Stalnaker (2010). However, we can put these kinds of cases aside here (without deciding upon them) because they don't pose a problem for non-singular propositions (and such propositions seem paradigmatic for the idea of universal revisability). It is sufficient for present purposes to show that universal revisability is not tenable if applied to non-singular propositions. Furthermore, it is not obvious that one cannot use, for instance, Fregean resources (see, e.g., Frege 1997) to argue that all propositions exist in all possible worlds (necessarily). Finally, even though we have an idea about the difference between a world containing Socrates and a world not containing him, we don't seem to have any halfway clear idea about the difference between a world containing a certain proposition and a world not containing it (putting the case of singular propositions aside here); we have a good idea of the existence of some proposition but no good idea of its non-existence. Apart from this, if propositions are sets of possible worlds or functions from worlds to truth-values, how could they then not exist in all possible worlds?

(IR-a)

$$\frac{\lozenge \, \exists p \, F(p)}{\exists p \, F(p),}$$

or even

(IR-b)

$$\frac{\lozenge \, \exists p \, F(p)}{\square \exists p \, F(p).^{12}}$$

We can also use the following two conditionals:

(IRa) $[\lozenge \, \exists p \, F(p)] \rightarrow \exists p \, F(p)$;

(IRb) $[\lozenge \, \exists p \, F(p)] \rightarrow \square \exists p \, F(p)$.

All this and (3*) entails that there is a proposition which falsifies its entry on L, the list of instantiations based on (1*) (see (4*)). Hence, (3*) is incompatible with L, the list of form (4*)—they cannot both be true. So, (1*) and (2*) from which they were derived cannot both be true.

We can recapitulate the above argument in the following way. (1*) entails (via (UI) and based on (EA)) a list of the form of (4*), L:

(5*) $(\forall p \, \lozenge \, \text{Rev} \, p) \rightarrow$ L.

Hence, we get the following argument:

(1*) $\forall p \, \lozenge \, \text{Rev} \, p$

(5*) $(\forall p \, \lozenge \, \text{Rev} \, p) \rightarrow$ L

(6*) L [(1*), (5*)]

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12. Thanks to a referee here.

The argument from (2*) can be summarized in the following way (with (3*) standing in for (2*) as its reformulation):

(3*) ◊ not ∀*p* ◊ Rev *p*

(7*) ◊ ∃*p* not ◊ Rev *p*   [(3*)]

(8*) (◊ ∃*p* not ◊ Rev *p*) → ∃*p* not ◊ Rev *p*   [(IRa)]

(9*) (∃*p* not ◊ Rev *p*) → not L

(10*) not L   [(7*), (8*), (9*)]

(11*) not ∀*p* ◊ Rev *p*   [(5*), (10*)].

This gives us the incompatibility of (1*) and (2*). Alternatively, one could reformulate (3*) as saying that there is a possible world in which there is an unrevisable proposition. Given that propositions exist in all possible worlds, one can then infer

(11*) Not ∀*p* ◊ Rev *p*.

What should we give up then? We can indeed argue for (2*) and against (1*). If (1*) is necessarily true, then we can make an argument parallel to the one above for the wide reading of the revisability claim and conclude that (1*) is false.[13] If (1*) is false, then it is, of course, false. Could (1*) be contingently true? It couldn't because then (2*) would be true; and if (2*) is true then (1*) is false. Alternatively, one could argue that for some particular proposition *q* (1*) entails that it is possible to revise *q*. Given S5, it is then also necessarily possible to revise *q*. We can then infer that each proposition is necessarily revisable (since *q* is arbitrarily chosen). Furthermore, given that propositions exist in all possible worlds, we can infer that necessarily each proposition can be revised. In other words, (1*) is necessarily true.[14]

Hence, if (1*) is true, then it is false. Given that it is true if true, we can, again develop a contradiction from (1*). (1*) is false and should be rejected while (2*) turns out to be true.

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13. I am sparing the reader the repetitiveness of going through the details of the parallel argument here.

14. Thanks to a referee here.

3. What Then?

Both the wide and the narrow universal revisability claim are false and lead to contradictions. So, in case we held (1) or (1*), we should give them up. We should "revise revisability".[15]

Where does all this leave us? A "mild" way of rejecting (1) or (1*) consists in restricting the claim (see also Resnik & Orlandi 2003: 305):

(X) Everything except (X) is revisable.

However, (X) seems ad hoc, at least prima facie. One would have to say something more substantial about kinds of claims that are revisable and kinds of claims that are not (which might even result in a "contra-Quinean" way back from issues of revisability and confirmation to analyticity; see Ebbs 2016 on this). Lacking anything like this, we should be very skeptical of anything like (X) and rather: radically revise radical revisability.

Acknowledgments

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15. Colyvan (2006: 7–8) very briefly discusses the type of argument made here. He holds that such an argument does not go through because the principles of modal logic used here have no equivalent in the relevant epistemic logic we should rather use. The conclusion can be derived "only if the access relation is transitive and symmetric – logics such as S5" (Colyvan 2006: 7). And: "there are well-known and compelling arguments as to why the appropriate system for epistemology cannot be as strong as S5. The appropriate logic is usually thought to be a non-symmetric logic . . . the contradiction can only be derived if we adopt a fairly strong modal system – one that's inappropriate as an epistemic logic." (Colyvan 2006: 8) There are two points one can make in reply here. First of all, epistemic logic is not needed here to derive the above results because the notion of revisability does not bring with it any problematic epistemic operators at all and all the logical work done here by operators is done exclusively by the modal operators. (See along the same lines Chase 2012: 359: "the world-shifting in Colyvan's proof . . . is being carried out by way of the box and diamond operators. These seem to be the standard alethic operators, rather than epistemic or doxastic operators. Worries about S5 as an epistemic logic are therefore rather by the way.") Second, even if an epistemic logic were relevant here and should in general not include the assumption that the accessibility relation is transitive or symmetric, one would still have to show that in this particular case, the case of revisability, transitivity or symmetry of the accessibility relation is violated. This seems implausible. Even if epistemic logic in general does not allow for a symmetric and transitive accessibility relation, the alleged logic of revisability (which, again, I don't think is called for here) can or could.

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