ABSTRACT: Neurath’s famous boat metaphor paints a picture of a coherentist system of knowledge where every statement (protocol or otherwise) is always open to revision. However, his total rejection of correspondence theory, I argue, raises questions about what “statements” actually are, since they can no longer be defined with reference to an external world. I believe that, if Neurath’s coherentism is taken seriously, statements must be ontological entities that make up a universe that is a nonintactly persisting object, in Roderick Chisholm’s sense. I explain this concept with recourse to the classic metaphysical riddle of the ship of Theseus.

Otto Neurath famously compared our experience of the world to our being on a ship at sea that never reaches land. Instead, we have to constantly make repairs on the open water. His point was that we don’t have the benefit of being able to stop and check our theories of the world from a detached perspective. There are no absolute, indubitable certainties to which our theories must conform. We must be prepared to revise anything and everything as necessary, in order to maintain the coherence of our world system—to stay afloat: “We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials” (Neurath 1932/33, 201).

Neurath’s metaphor is reminiscent of the ancient metaphysical riddle of Theseus’ ship: if the parts of a ship are slowly replaced over time, until the ship has none of its original parts, would it still be the same ship? In what follows, I use Roderick Chisholm’s language to suggest that, if Neurath’s metaphor is accurate, our world is a nonintactly persisting object, dropping and gaining parts over time according to the pragmatic needs of coherence. This view of the world requires that we jettison any ontological baggage attached to the correspondence theory of truth, a move Neurath would endorse. In the conclusion, I discuss temporal issues that come
up under my theory. The most serious is the question of statements made about spatio-temporal facts: if these statements can be overruled, it seems like wild contradictions ensue: e.g., an object, once located at spatio-temporal point A, now must be considered to be (or to have been) located at spatio-temporal point B. I believe that, with the help of Bruno Latour’s articulated propositions and an extension of Neurath’s boat metaphor, we can overcome skeptical difficulties and define a serviceable type of mutable truth over time.

*The Ship of Theseus*

The apparent facts of change and identity have been a gold mine for philosophers over the millennia. Plutarch catalogued an excellent example, traditionally known as the “ship of Theseus” problem (Plutarch 75). Suppose there exists a wooden ship, made of planks and boards and rods. It has a deck, a hull, a sail, a stern, a rudder, etc. Now suppose that a single plank from the deck is removed and replaced with a new plank. Is it still the same ship? Most people would agree that it was the same ship, with a new plank. If a single plank were replaced overnight, we could say that the same ship had survived from sundown to sunup. But what if, over a period of weeks or months, we slowly replace every single plank, board, and rod, one increment per night, until none of the original constituents of Theseus’ ship remain. Is it still the same ship, despite the fact that none of the material components are the same?¹

Roderick Chisolm’s solution to this riddle is to distinguish between *intactly persisting objects* and *nonintactly persisting objects* (Chisholm 1970, 173-179). For instance, in the

¹ Thomas Hobbes is known for complicating this classic puzzle: what if the discarded planks of Theseus’ ship are used to build a numerically distinct ship? Afterwards, which ship is really Theseus’, the one exhibiting formal continuity, or the one made from the same matter (Hobbes 1839, 135-138)? This is a fascinating question, and perhaps a more popular version of the problem in the literature (see, e.g., Johannsson 2006, Barnett 2005, Rea 1995, 531-537, and Scaltsas 1980). However, with the space I have here, the original, simpler problem will prove less unwieldy.
example given, a particular plank or board would be an intactly persisting object that happens to be employed in the construction of a ship before being discarded. The ship itself, however, is a nonintactly persisting object, an object whose parts change over time, with perhaps every part being replaced eventually.² (David Barnett would say, for similar reasons, that the ship exhibits the trait of “material non-rigidity” (Barnett 2005, 529)).

The idea of a nonintactly persisting object (NPO) is incredibly useful in various contexts. Perhaps the most ready-to-hand is the application to an individual animal, say, a human being. Some would argue that a human being is an NPO, as our cells are replaced continually. But a house could also be an NPO, as could a city, or a planet. Could an entire universe be an NPO? An eternalist, believing the universe to be a changeless space-time block, would not countenance the idea. Ultimately, she wouldn’t even agree that the universe persists at all. Such persistence would require a meta-time, beyond the time encapsulated in the universe itself. The space-time universe simply is, in timeless eternity. It is less clear what presentists would make of the idea of a nonintactly persisting universe. If all that exists is the present, could the universe (“all that exists”) be said to persist nonintactly through consecutive presents? Perhaps. In the remainder of this essay, I will be arguing for something like this view. I show that, at the very least, if we accept Neurath’s boat as an accurate picture of our reality,

² We might also say the ship of Theseus perdures, rather than endures, to use terminology originally coined by David Lewis (1986, 204). A perduring object is a four-dimensional entity that can be divided into temporal stages, each stage possibly consisting of different physical (or three-dimensional) parts. An enduring object is fully present with all of its parts at every moment of its existence. Of course, Lewis would insist that every object perdures, whether it persists intactly or nonintactly. This betrays his commitment to eternalism, the position that every moment of time, past and present, is equally real. This position comes loaded with a commitment to the space-time universe as a singular whole, an unchanging reality that all precisely defined truth claims describe. It seems possible in principle to invoke the notion of perdurance without invoking eternalism, or four-dimensionalism, but the common association of the terms would make it confusing. Eternalism is not a position I find tenable, as will become apparent later in this essay.
an NPU, or a nonintactly persisting universe, is exactly where we end up living. But first, let us take a closer look at Neurath’s metaphor of the boat.

_We’re On a Boat_

The logical positivists declared that meaningful propositions were required, by definition, to be verifiable by experience. Metaphysical claims, such as those about “the Absolute,” which were neither tautologies nor confirmable, were meaningless. In order to clearly distinguish between statements that were open to the test of experience and those that weren’t, the positivists began to formulate what they called protocol sentences.

Every positivist had his own vision of how these sentences were to be articulated and how they were to play a role in the verification process. According to Neurath: “Apart from tautologies, unified science consists of factual sentences. These may be sub-divided into (a) protocol sentences[; and] (b) non-protocol sentences. Protocol sentences are factual sentences of the same form as the others, except that, in them, a personal noun always occurs several times in a specific association with other terms.” He goes on to give an example of one: “Otto’s protocol at 3:17 o’clock: [At 3:16 o’clock Otto said to himself: (at 3:15 o’clock there was a table in the room perceived by Otto)]” (Neurath 1932/33, 202).

The nested structure of the statement means that its “interpretation” is not obvious. My own interpretation relies on Thomas Uebel’s articulation of the four-part structure of Neurath’s protocol statements—with the fourth part thrown out, for reasons I will explain in the next section (Uebel 2009, 7). The innermost component of the statement (“at 3:15 o’clock there was a table in the room perceived by Otto”) is what Uebel calls a “stimulation state.” In
the example, Otto has perceived a table. The next component removed (“3:16”) is a “thought,”
the conscious recognition that Otto had a perception. The farthest removed component
(“3:17”) is the final “protocol,” the official stamp that makes the experience into a sentence
ready for service. This last protocol is the explicit claim that makes the entire sentence clear
and ready to be verified or falsified.

Neurath insists that protocol sentences can be verified or falsified. While some other
positivists were concerned to create a fundamental language of indubitable statements, for
Neurath, “There is no way of taking conclusively established pure protocol sentences as the
starting point of the sciences. . . . Every law and every physicalistic sentence of unified-science or
of one of its sub-sciences is subject to such change. And the same holds for protocol sentences”
(Neurath 1932/33, 201, 203, emphasis in original).

It is essential for Neurath that our protocol statements be open to revision, that is, that
they be replaceable. This revisability is the cornerstone of his coherentism. In his “Sociology
and Physicalism,” Neurath insists that, “A statement is always compared with another
statement or with the system of statements, never with a ‘reality.’ Such a procedure would be
metaphysical; it would be meaningless” (Neurath 1931/2, 292). Neurath has no faith in the
existence of a stable external reality with which protocol sentences (or any sentences) must
correspond. All of the accepted statements at a given time must cohere with each other. If a
new protocol statement is offered that conflicts with the previously existing system of other
statements, it either must be thrown out, or room must be made for it, by throwing out one or
more of the tenured statements.

With all this in place, Neurath articulates his famous metaphor:
We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials. Only the metaphysical elements can be allowed to vanish without a trace. Vague linguistic conglomerations always remain in one way or another as components of the ship. If vagueness is diminished at one point, it may well be increased at another (Neurath 1932/33, 201).

We are all afloat on a boat made of protocol statements (and logical tautologies). We never have the chance to get off the boat and try to make the statements correspond to an external reality, but only to compare the statements with each other, occasionally throwing some out, like rotten planks on a deck, and replacing them with new planks that, most likely, will one day also need to be jettisoned. Further, we will always have to tolerate creaky or loose (vague) planks, ideally repairing them before they go bad.

**What Are Statements?**

An interesting question emerges at this point: what exactly are “statements”? Under a correspondence theory of truth, a statement would be a vocal or written utterance emanating from a rational being, making a particular declaration about something in the external world. The statement’s accuracy would afterwards have to be checked against the external world; truth would be established only if a correspondence could be verified between the statements and the world.

But as we have seen above, the idea of an external reality is too “metaphysical” for Neurath. If statements, protocol or otherwise, aren’t the sort of things that correspond or refer to an external reality, what are they? The question becomes even more important when we remind ourselves, yet again, that Neurath denies outright the metaphysical external reality of the correspondence theorist. We might be able to get away with defining statements as “linguistic constructs of varying degrees of vagueness and precision in relation to one another,”
but in the end this definition solves nothing. What are “linguistic constructs” when removed from the context of commentary on an external world?

For those familiar with Thomas Uebel’s account of the meaning of Neurath’s protocol statements, it should now be obvious why I elected to throw out the fourth component of his explication. Beyond the “stimulation state” mentioned above (“at 3:15 o’clock there was a table in the room perceived by Otto”), Uebel wants to add an “observable fact,” a final condition for a protocol statement that runs like this: “there is no evidence available that would contradict the object’s being in the room” (Uebel 2009, 7). If by this Uebel simply means that the protocol statement isn’t incoherent with other already accepted statements, then his fourth component is worse than superfluous; it is wrong. Neurath makes clear, as I showed above, that previously accepted sentences can be thrown out and replaced with new ones. If Uebel’s “evidence” is to be understood along correspondence lines, if an “observable fact” is anything like a statement that corresponds to external reality, it is wrong again; Neurath’s coherentism makes any kind of correspondence untenable.³

³ Uebel also argues that protocol statements are only to be taken as relevant to the philosophy of science, and are not applicable to knowledge generally (6). This is difficult to accept; consider Neurath’s “Universal Jargon and Terminology,” where he not only distinguishes “building up our Universal Jargon” from “building up our science,” but uses a train of examples involving craftsmen, lawyers, and people seeing zebras at the zoo (Neurath 1940-1941, 131). As Nikola Nottelman puts it, “If Neurath meant his thesis to apply exclusively to observations in institutionalized science, he certainly chose his examples in a most misleading way” (Nottelman 2006, 173). Neurath also makes much of the necessity of purifying our “ordinary natural language” in “Protocol Sentences” (Neurath 1931/2, 200-201).

But even if Uebel were right, it is far from clear how the dualism between scientific and ordinary language should function. Should scientific terminology be reducible to ordinary language? Neurath affirms this wholeheartedly in “Protocol Sentences” (1931/2, again at 200). But again, he doesn’t endorse a dualism here, but brings the two into a single universal system. Even if Neurath did want to enforce a dualism, it would presumably still be rooted in a coherence theory. How else would ordinary language function? According to a correspondence theory? But this would be a retreat to “metaphysics.” Coherence theory seems to be a fundamental part of the interpretation of any system of statements, for Neurath. And this is all I need to make my point in this essay.
This result is an instance of the inter-connection between Neurath’s theory of truth and the theory of reality. In a world where an external reality for statements to correspond to is ruled out, statements aren’t quite the same kind of entity. External reality can’t play the same role in the ontology of a full-blooded coherentist as it can in the ontology of a correspondence theorist. So, again, what are statements? Nikola Nottelman sheds light on the question: “[For Neurath,] all statements are spatio-temporal objects. . . . From at least 1930, Neurath viewed all linguistic expressions as spatio-temporal entities” (Nottelman 2006, 167, 174). If we take this to mean that statements are objects that merely move through space-time, we end up with the same problem that Uebel had. Where is space-time coming from? Is space-time an extra-linguistic scaffolding, the figurative “sea” roiling underneath our boat? This seems unlikely, as it would require that statements about space-time be either impossible or closed to revision, and it seems unlikely that Neurath would accept either of those possibilities. It seems unlikely that we would accept those possibilities, for that matter.

There is an alternative. We could accept space-time as a built-in property of the statements. For instance, in the “stimulation state” “at 3:15 o’clock there was a table in the room perceived by Otto,” space and time are not implied so much as they are constitutive of the state itself. Statements are “spatiotemporal entities” not in that they exist in space-time, but in that they produce space-time. Ostensibly, their coherence with other statements would be the grounds for a common space-time, one that is revisable when certain statements become obsolete and are deleted in favor of new statements.

If this is Neurath’s claim, or at least a reasonable way to fill out his sketchier claims, I find a parallel with Bruno Latour’s articulated propositions (Latour 1999, 133-164). While we
should be careful to guard against identifying Neurath’s protocol statements with Latour’s propositions (“Propositions are not statements, or things, or any sort of intermediary between the two,” Latour 1999, 141), the two have a lot in common, if my claims above are accurate. Propositions, in the Latourian sense, are simply anything and everything, from a sentence to a city to a laboratory to a swift motion. They do not exist in an absolutely stable space-time, but make up a relatively stable space-time in so far as they are articulate with one another. The proposition that I refer to as “Evan” is articulate with the proposition “Evan’s functional chair” insofar as I can sit in the chair without it collapsing. To use one of Latour’s favorite examples, the proposition “microbes” is articulate with the proposition “lactic acid fermentation” as long as lactic acid ferments occur and can be practically tied together with Louis Pasteur, his experiments, the scientific community, microscopes, etc. Under this analysis, Latour’s concept of “articulation” looks very similar to a kind of coherence, though of course the coherence in question isn’t to be taken as coherence between statements or sentences in the usual sense.

If Neurath’s statements aren’t the statements of the correspondence theorist, it would seem his protocol statements are closer to Latour’s propositions than might at first appear, but I won’t stress this point. The important thing is that Neurath’s boat, when systematically severed from any lingering trace of correspondence, gives us an ontological picture of a world that both grows and discards parts as necessary. This is not the eternalist’s four-dimensional block universe; such a world would be far too “metaphysical,” “metaphysical” meaning, here, that the eternalist’s universe lays down an absolute ontological foundation that is incapable of being overturned, and hence far outside the purview of any empirical research.
If we reject eternalism, the universe (a.k.a. Neurath’s boat) is itself a nonintactly persisting object (NPO) in Chisholm’s sense. What makes it up today might not make it up tomorrow. At one time, our boat only included white swans; now room has been made for black ones. The boat’s hull used to be made of planks of absolute space and time; the new planks are relativistic, and much more flexible.

Something seems strange here. How can we speak of time being replaced over a period of time? It is admittedly an odd-sounding suggestion, but if we are to take coherentism seriously, we are going to have to contend with such claims. For (protocol/non-protocol) statements about the nature of space and time are evaluable in the same sense as any other type of statement, and hence just as disposable and replaceable. And if we are left without an external reality for our boat to match up with (or come to rest on), time and history themselves are “defeasible,” we might say. It is here that we will have to consider a different conception of time(s).

**Changing Times**

Let’s consider an everyday example. I remember, on the morning of December 11, that at 8:17 pm on December 10, I put my screwdriver into a pack of tools I keep in a cabinet next to my stove, right after using it to put together the new kitchen chairs I bought. We could easily transform this into a protocol sentence, so I will spare you the tedium of actually doing so (and if all sentences are revisable anyway, it’s not certain that it matters).\(^4\) So this statement of my

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\(^4\) Also, Nottelman argues that the particular complex three- and four-part forms that Neurath’s protocol statements appeared in were simply clarifications of an earlier two-part formula (Nottelman 2006, 24). The interchangeability of these formulas might suggest that protocol statements aren’t even required to be articulated in too-specific of a manner, as long as they clearly include reference to an individual experiencing a particular perception at a specific place and time.
perception of having placed the screwdriver in its pack in the cabinet at a specific time last night is a plank on my ship. This is a part of my spatio-temporal reality.\footnote{The question of whether or not there are multiple realities, or multiple boats, is fascinating, though I will not have space to treat it here. I will note, though, that Neurath explicitly endorses William James’ notion of the “pluriverse” (Neurath 1940-1941, 129). This endorsement might be enough to allow ontological pluralists to set sail with Neurath’s fleet.}

Now let’s suppose the day has passed and it is presently the evening of December 11. When I need to tighten one of the screws on my new chair, I go to the cabinet with the pack . . . and don’t find my screwdriver where I remembered putting it. I ransack my apartment, and discover that I had \textit{actually} absentmindedly put the screwdriver in my silverware drawer. This fact can be formulated as a new protocol sentence that will have to replace the old one about storing the screwdriver in its proper place.

What has happened here? What does the word “actually” mean in the paragraph above? Can it mean that my original protocol statement didn’t correspond with the really real “actual” external space-time reality? And that my second protocol statement did correspond? If we admit these claims into our account, we are leaving Neurath far behind.

While it is the case that Neurath eventually gave up on the metaphysically loaded term “truth” (Nottelman 2006, 169), I think we can still make some use of it to describe this situation. Prior to the night when I went searching for the screwdriver again, it was simply true that I put the screwdriver in its proper pack in the cabinet next to the stove. It was true in virtue of the fact that the protocol statement expressing, and constituting, that fact cohered with all other statements in the system making up my world. However, once I found the pack in the cabinet barren of screwdrivers, the original protocol statement was ejected, and replaced
with a new one about how I misplaced the screwdriver. This new one was articulated further when I found the screwdriver in the silverware drawer.

What we have here is a temporal track that is defined along two dimensions. On the first, we have the “present” history of the world/boat, which includes my misplacing the screwdriver in the silverware drawer on the evening of December 10. This occurrence is an historical fact, and it is simply wrong to suggest that I stored the screwdriver in my pack of tools. On the second dimension, we have an historical precession of boats, or, rather, a record of boat maintenance. Neurath’s boat is a nonintactly persisting object, losing protocol statements here and there, and taking on new ones as well. On what we might call the previous iteration of the boat/world in question, it was true, or coherent, to say that I put the screwdriver in the cabinet next to the stove on the evening of December 10. After the “universe maintenance” that occurred on December 11, the original statement ceased to be true, and our “present” boat includes a brand new “evening of December 10.” New statements must be retrofitted, and history itself revised, for the universe to stay afloat (cf. Latour 1999, 170).

One last caveat is necessary: if this characterization is an accurate extension of Neurath’s boat metaphor, we must not come to think we have special access to previous versions of the boat. The reality of the precession of boats, or the history of boat maintenance, is not an external reality our statements must correspond to. Rather, historical accounts, of wars and scientific discoveries and misplaced screwdrivers, are themselves planks on the deck.

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6 See Latour 1999, Ch. 5, for a similar treatment in the context of the discovery/construction of microbes, esp. Figure 5.2 on 171.
A problem seems to emerge. As long as we have conflicting historical accounts, such as those of me putting the single screwdriver in two different places at the same time, our world/boat is incoherent. In practice, in situations like the example, we tend to favor the most recent statement and throw out the old one. But once philosophical analysis is put in motion, skeptical doubt sets in. How can we be sure our most recent memory won’t be overthrown the same way our previous memories have been? Of course, this problem is a microcosm of the problem of the history of science at large. As Thomas Kuhn notes, “All past beliefs about nature have sooner or later turned out to be false” (Kuhn 2000, 115). What makes us think our present beliefs will fare better?

This is why Neurath’s boat isn’t just a clever metaphor, but is a conceptual outlook we can employ to increase the coherence of our universe. As long as the tension between present and future accounts of facts breeds skepticism or confusion, we lack satisfactory coherence. But if we can convert these discrepancies from being contradictions to being values along two distinct temporal dimensions, we can save coherence without having to skeptically deny present truths or make up reasons why old truths were somehow illegitimate. Neurath’s boat gives us the opportunity to make the past and present harmonious in a way that a correspondence theory of truth would never allow.

Conclusion

Neurath’s coherentism would probably be considered extreme under the standards of today’s coherentists (cf. Kuukkanen 2007, 562; Kuukkanen provides a citational catalog of

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7 “All past beliefs about nature” is hyperbolic, of course. E.g., we still think of water as a serviceable solvent, after millennia. But it is true that a great many beliefs, scientific and otherwise, have been discarded, and skepticism is known for preying on this fact.
epistemologists that distinguish coherence epistemology from a correspondence theory of truth, embracing both). But if we take him seriously, and officially cease looking for any explanation for anything in an external reality, independent of our statement-constructed boat, it seems clear that we are sailing in a nonintactly persisting object we call the universe. I have tried to make this claim sound less unreasonable by making a Latour-inspired analysis which divides time into the history of events and the history of world/boat iterations. It is my claim that such a(n at least) two-dimensional ontology of time serves to beat back skepticism about temporally conditioned truth claims and establish more coherence in our world picture.

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