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Overcoming Carnap's Methodological Solipsism: Not As Easy As It Seems

Methodological solipsism is the position adopted by Rudolf Carnap in his *Der logische Aufbau der Welt* (*The Logical Structure of the World*, 1928, hereafter: *Aufbau*). My concern here is to investigate whether, and if so, how, it can be effectively argued against – under certain conditions. That is, I will not take account of perhaps the most famous criticism Carnap received and pursue a question of principle. I will assume that Carnap's *Aufbau* "does what it says on the tin" and ask on what grounds one can then take issue with it. I will argue that Carnap had remarkable resources to resist the criticisms he did receive.[1]

I.

According to the methodological solipsism of the *Aufbau*, it is possible to develop by logical construction a conceptual system encompassing all of empirical science on a so-called autopsychological basis. "Within the autopsychological basis, the available basic elements are restricted to those psychological objects which belong only to one subject" (§ 63, 100); in other words, the construction starts exclusively from what is "given" to an individual consciousness (§ 64, 102).[2] This basis was chosen so as to reflect the "epistemic order": the construction was to begin with objects that are "epistemically primary", namely objects whose recognition is "presupposed" for the recognition of "epistemically secondary" objects (§54, 88–89), which in turn are presupposed by epistemically tertiary objects, and so on as long as required. From a basic type of object, after

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[1] This is admittedly not the first time that I have been considering these matters, but ongoing discussions with neo-Carnapians lead me to think that revisiting the matter from a fresh angle may help the understanding of certain subtleties that previous discussions neglected. Note that my discussion is limited to methodological solipsism in the context of the *Aufbau* project.

[2] All references with paragraph and page numbers are to the English translation of Carnap's *Aufbau*.

a certain number of steps, another type of object can be constructed, and so on, up to four kinds in total. In ascending order of complexity, "the sequence with respect to epistemic primacy of the four most important object domains is: the autopsychological, the physical, the heterosychological, the cultural" (§58, 94). Notably, the methodologically solipsist system was but one several possible construction systems of concepts; Carnap also envisaged, but did not develop, systems with a physical base (§§ 59–60).[3]

While the technical aspects of Carnap's construction project do not concern us here, we must briefly reflect on its radical nature. The basic elements are a person's "elementary experiences", that is, experiences "in their totality and undivided unity" (§ 67, 108). This means, to be precise, that the basic elements of the system are "conscious experiences (in the widest sense): all experiences belong to it, whether or not we presently or afterwards reflect on them. Thus, we prefer", Carnap wrote, "to speak of the 'stream of experience'" (§64, 102). This bare "given" is unanalyzable as such; all that can be done with it is that "statements can be made about certain places in the stream of experience, to the effect that one such place stands in a certain relation to another place" (§67, 109). In this way, even sense data are to be constructed by a method of so-called quasi-analysis so as serve as building blocks for further constructions.

Even more daring is Carnap's choice of basic relations according to which the basic elements are to be ordered: only a single one was to be used, namely "recollection of similarity" (§ 78, 127). (From this basic relation that of "part similarity" can be derived for use in quasi-analysis, such that elementary experiences are recollected as similar in part, and it was from classes of such similarities that basic sense data are constructed.) The aim was that all scientific statements were to be shown translatable into statements employing only iterations and logical permutations of these elementary elements and the elementary relation. To be sure, predicate logic and classical mathematics are presupposed (§107), but few if any constructive projects in philosophy have shown such ambition.

Now importantly, it must be stressed right away, as it was by Carnap, that "since the choice of an autopsychological basis amounts merely to an application of the form and method of solipsism, but not to an acknowledgement of its central thesis, we may describe our position as *methodological* solipsism" (§ 64, 102, orig. emphasis). Methodological solipsism made no ontological claims; it was one possible stance of construction theory. Let's see what this comes to.

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[3] Carnap offered no discussion of the epistemic primacy of the autopsychological over the physical, which indeed was a very widely shared assumption at the time. Among representatives of the Austrian tradition it was shared by theorists as different as Franz Brentano and Ernst Mach (see Crane 2006).

II.

The *Aufbau*'s combination of reach of ambition and instrumentalist minimalism was not pursed for logical sport only. One of the main points of the *Aufbau* was to pursue "the formalization of scientific statements", namely their translation into sentences which replace each term with its constructional definition, i.e. their definition in terms of the elementary elements and relation alone. The ultimate aim was "to complete this formalization by eliminating from the statements of science these basic relations as the last nonlogical objects" (§ 153, 235) – to achieve the complete structuralization of knowledge.[4]

This aim, in turn, was to complete Carnap's theory and afford it reflexive blessing. According to the *Aufbau*, the objectivity of sciences rested on what he claimed to be a fundamental fact, that "scientific statements relate only to structural properties", that is, "they speak only of forms without stating what the elements and the relations of these forms are" (§12, 23). By furnishing a strictly scientific redescription of human knowledge, one that by complete structuralization stripped it of its "intuitive" features and represented it in terms of its purely structural features, the *Aufbau* was to provide constructive proof of the claim about objectivity. What Carnap set out to do, then, were two things: first, the provision of the conceptual skeleton of possible human empirical knowledge, and, second, the provision of a theory of how to go about producing such conceptual systems. In Carnap's terms, he provided both a "rational reconstruction" and a theory of such rational reconstructions.[5]

Now importantly, that Carnap's construction of objects proceeds according to their epistemic order "does not mean that the syntheses or formations of cognition, as they occur in the actual process of cognition, are to be represented in the constructional system in all their concrete characteristics" (§ 54, 89). The point was philosophical. Now the *Aufbau* itself shows little concern with "justifying" knowledge claims as such, but only interest in developing "constructional systems", in the logical construction of systems of concepts. That said, the point of these constructions, Carnap himself conceded, was the "*rational justification of intuition*". He elaborated: "*The constructional system is a rational reconstruction of the entire formation of reality*, which, in cognition, is carried out for the most part intuitively" (§ 100, 158, orig. emphasis; cf. § 179, 289).

Needless to say, this epistemological engagement of the *Aufbau* remained pretty minimal. It provided only the logical-conceptual foundations for justifications of knowledge claims. Yet precisely by showing all concepts to be struc-

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[4] For various forms of non-foundationalist interpretations of the *Aufbau* that are drawn upon in this section see, e.g. Friedman 1987, 1992, Richardson 1998, Pincock 2005 and the discussions in Carus 2007. ch. 6 and Pincock 2009.

[5] This metatheory, the theory of rational reconstruction provided what nowadays we can call a toolbox of formal epistemology.

turally reconstructible, it was the objectivity of science that was to be explained and substantiated, so it was an epistemological engagement all the same. The *Aufbau* was not altogether epistemologically innocent – as the Index of Subjects of the *Aufbau* reveals. There we read under "Justification": "see Rational reconstruction", and then find "Rational reconstruction [*rationale Nachkonstruktion*] (rational justification)" (360 and 363).[6]

It is therefore not at all irrelevant to note that while Carnap abjured the claim to paint a psychologically realistic picture, he did claim that the relations of epistemological justification that obtain for our cognitions are *correctly* portrayed in the way they were portrayed in the *Aufbau*. It is true that Carnap stressed that the system with an autopsychological base was but one possible way of providing a construction system (one with a physical base was also possible), but likewise is it true that his choice of which one to develop in the *Aufbau* was not arbitrary. "From an epistemological viewpoint (in contradistinction to the viewpoint of empirical science), we are led to… a constructional system with autopsychological basis" (§ 59, 95). In other words, what is epistemological about the construction system of the *Aufbau* that was developed in it, is precisely its methodological solipsism.

But, and this also is extremely important, while this methodological solipsism was long regarded as entailing a form of reductionist foundationalism, its epistemological interest lay elsewhere for Carnap. There is, for instance, the (already mentioned) structuralist agenda which it facilitates, and with it the distinctive idea of how to sustain science's claim to objectivity: "science wants to speak about what is objective, and whatever does not belong to the structure but to the material (i.e. anything that can be pointed out in a concrete ostensive definition) is, in the final analysis, subjective" (§16, 29). Another central concern, also facilitated, is the exemplification of the unification of concept formation as something postulated by the concept of unified science (§ 2, 7).

Some of these epistemological interests may, of course, also be served by constructions with other kinds of bases or other approaches to epistemology altogether. (It is an interesting question, not pursued here, which can survive the overcoming of methodological solipsism.) For now, however, it should be clear that methodological solipsism manages to combine these interests in the construction of its conceptual system. And one more thing: some of these interests are wholly independent of epistemological foundationalism, the grounding human knowledge claims in non-inferentially justified beliefs (let alone indubitable ones) and the desire to secure human knowledge against philosophical skepticism (beyond establishing objectivity for science), and therefore remain viable motivations for the *Aufbau* even if the foundationalist one is discounted.

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[6] Originally, "Rechtfertigung, s. rationale Nachkonstruktion" and "*rationale Nachkonstruktion* (rat. Rechtfertigung)", with §§ 100 and 143 in bold as indicating special importance among the nine sections mentioned. No such differentiation was made in the Index of the English version.

III.

Now, turning finally to criticisms of methodological solipsism, I will bracket the most famous criticism of it, Quine's. According to Quine, Carnap's *Aufbau* project breaks down because the predicate "is at" (placing a perceived quality in physical space) does not receive an eliminative definition (at § 126).[7] (Call this the "physicalist charge".) This criticism is widely, but not universally, accepted, even by some authors who oppose Quine's interpretation of the *Aufbau* as foundationalist empiricist epistemology. For present purposes I disregard it, since its acceptance would pretty much render my inquiry void. Failure to provide eliminative reductions would certainly show that the slim base Carnap chose to provide an adequate basis for methodological solipsism in the *Aufbau* was inadequate, whichever of the aims mentioned is pursued. (Whether a more Machian strategy, starting from a small number of types of sense data, would do better, is anybody's guess.)[8] The conditions under which I wish to investigate whether methodological solipsism can be effectively argued against, advertised in my introduction, are precisely those that obtain when Carnap's construction is not yet viewed as having its reconstructive proficiency challenged.

But while I here bracket Quine's criticism, I must to stress that we should grant him with considerable more insight and subtlety than your average critic of logical positivism displays in at least one respect – one in which the present investigation must emulate him. Quine accepted that Carnap's strategy of constructing a genealogy of all non-formal concepts on the sole basis of the relation of remembered similarity with unanalyzed whole first-person experiences as relata was to be of only reconstructive import. Certain shortcomings simply would not count. Two misunderstandings in particular must be guarded against. First, as Carnap himself stated (§ 50), rational reconstruction was *not* meant to be *descriptively adequate to knowledge acquisition* as it actually took place. The second misunderstanding is more subtle and can be illustrated with reference to Quine's "is-at" objection.

Any failure of reduction that constitutes a legitimate complaint about the rational reconstruction must show that this strategy betrayed its promise to reconstruct our ordinary and scientific discourse *even in its own terms*. Therein lay the *Aufbau*'s failure on Quine's reading. His complaint of failure was *not* that with methodological solipsism reference to anything but phenomenal objects

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[7] See Quine 1951/1953. 39–40; 1969. 74–75. There is, of course, also Goodman's criticism, in Goodman 1951 and Goodman 1963, of earlier stages of the reconstruction which is still more controversial (see Carnap 1961. ix–x; Proust 1984, Mormann 1994) and which does not seem to turn on assumptions peculiar to methodological solipsism as such but on specific aspects of Carnap's way of formalizing its realization.

[8] When Carnap envisaged one such in the "Preface to the Second Edition" (1961–1967. vii), he did not motivate his preference for it on these grounds.

became impossible. That much is taken for granted when we accept Carnap's strategy. It is rather that methodological solipsism *fails in its aim to simulate* ordinary cognition. That is, it fails to reconstruct physical object discourse in its own reconstructive terms, namely by not providing indicators necessary and sufficient for the recognition of the basic states of affairs in which physical objects figure.[9] (Even if the *Aufbau* had succeeded with its reductions contrary to what Quine claimed, it would only have been make-believe physical objects that he ended up with, but that would not have mattered then.) Quine's criticism, in other words, was immanent to Carnap's project.[10]

The criticism I want to consider here is likewise immanent to Carnap's project, but differs from Quine's in its focus. Note that, however new-fangled Carnap's logic and however radical his structuralism may be, the ground plan of the *Aufbau*, the order of epistemic primacy which is followed in the process of ever more complex constructions of concepts and objects of cognition, is very traditional indeed. It is so, to be sure, not in virtue of appealing to atomistic foundations – the conceptual system is so deeply holistic that the atomism charge largely misfires – but it is so traditional in virtue of the austere individualism of its base. The criticism I want to consider is that it is this individualism that brings the *Aufbau* to its fall, in other words, that Carnap's methodological solipsism is responsible for a highly significant and non-negotiable failure of the reconstructive project, namely, the failure to do justice to its own aim of reconstructing intersubjectivity.[11] (Call this the "social charge".) Again it may be helpful to illustrate what criticism would *not* fit the bill before proceeding.

An example of non-immanent criticism would be that Carnap's reconstruction of intersubjectivity in the *Aufbau* in its later stages fails on account of its inability to sustain a certain conception of it that is endorsed earlier in the book. Consider that the kind of objectivity that was in fact reconstructed in the *Aufbau* consisted of "intersubjective correspondences" that allowed the construction of an intersubjective world (§ 146). These intersubjective correspondences consisted in the far-reaching structural agreement between a constructional system as a whole (which holds for me and represents my experience of the world, call it "CS_{self}") and the constructional systems which are ascribed to others within this all-embracing constructional system (call them "CS_{other}"). It was on the basis of this agreement that intersubjective objects and properties can be construct-

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[9] For these conditions, see *Aufbau* §§ 2 and 49.

[10] It is criticism that in principle should sway Carnap to take it on board (as, without change of agenda, one is not likely to do in the face of non-immanent criticism).

[11] To be painfully explicit it's the austere epistemic individualism of methodological solipsism that is being attacked here – which is not related to the position of methodological individualism in the philosophy of social explanation (even though that attracted much heated criticism on account of being misunderstood as a sociological analogue of methodological solipsism).

ed, i.e. objects and properties constructed in an analogical fashion in CS_{self} and CS_{other}. This intersubjective world then allows for the construction of physics. All along, what this process of "intersubjectivizing" provides, however, are constructions that "do not consist in a hypothetical inference or fictitious postulation of something that is not given, but they consist *merely in the reorganisation of the given*" (§ 148, orig. emphasis).[12]

Compare now how Carnap answered the question of "how science can arrive at intersubjectively valid assertions if all its objects are to be constructed from the standpoint of the individual subject, that is, if in the final analysis all statements of science have as their objects only relations between my experiences". His answer was that "[t]he solution to this problem lies in the fact that, even though the *material* of individual streams of experience is… altogether incomparable…. all streams of experience agree in respect of certain *structural properties*" (§ 66, 107, trans. amended, orig. emphasis). Note that this defense of the intersubjective validity or objectivity of science depends on having taken a standpoint external to the epistemic subjects in question by postulating all of their "streams of experience" to "agree in respect of certain structural properties": no such objective agreement was reconstructed later in the book, nor could it even be stated from the perspective of an individual with the autopsychological language as in *Aufbau*.

Now why would this not qualify as criticism immanent enough to satisfy our desiderata? To begin with, there's a delightful ambiguity in the phrase "all streams of experience agree in respect of certain structural properties". On an ordinary understanding, this phrase speaks of different streams of experience (mine, yours, his and hers) and so provokes the charge of inconsistency: what is reconstructed later is not what was talked about earlier.[13] But a committed Carnapian is likely to interpret the phrase in question as already speaking from within the perspective of the *Aufbau*: what accounts for objectivity in the *Aufbau* is precisely that each subject is able, by the process of intersubjectivization, to build up an intersubjective world shared with (reconstructed) others. For present purposes, there is no need to disambiguate, for we may ask whether Carnap has any need, in the first place, to invoke whatever may be the objective nature of objectivity, let alone to reconstruct it. Once it is noted that the *Aufbau*'s point is to simulate, not recreate, human cognition, then it becomes readily apparent

[12] Likewise, the *Aufbau*'s reconstruction of the intentional relation and its directedness never reaches real world objects (§ 164).

[13] This was the criticism voiced first in Uebel 1992. 94, where it was also attributed to Heinrich Neider (see §4 below), and then more or less repeated in his 2007. 133. That Carnap employed two different conceptions of intersubjectivity in the *Aufbau* is also noted in Richardson 1998. 89-91 and made the basis of a fundamental criticism of the *Aufbau*. How Richardson's criticism relates to those considered and developed here must be considered on another occasion.

that the committed Carnapian is right to reject the criticism of inconsistency as, at a mimimum, irrelevant, for reconstructing an intersubjectivity involving two independent subjects was never the point.

IV.

What this brings out clearly, I think, is that it is not at all easy to come up with an immanent criticism of Carnap's methodological solipsist construction system in the *Aufbau* – as long, that is, as one grants him technical success. Not only does this mean that any demonstration that experience-transcendent objects remain out of reconstructive reach is bound to miss the dialectical mark, but that any demonstration that the process of intersubjectivization does not deliver a social space involving independent others is bound to miss the dialectical mark as well. What has to be shown, rather, is that Carnap's methodological solipsist construction system in the *Aufbau* did not manage to realize its legitimate aim: that it failed to show that there obtained no epistemologically significant discrepancy between the reconstruction and what it was a reconstruction of, in particular, that their subjective origin was no bar to the objectivity of scientific knowledge claims as here conceived.

Readers will have noted that the dialectical situation just outlined is pretty much like the one in which critics of Carnap's methodological solipsism found themselves before Quine's physicalist charge. So how did opponent of methodological solipsism react? The first concrete objection Carnap himself was confronted with (more diffuse ones had been voiced in Neurath's review of the *Aufbau*)[14] focused on the fact that, according to the model provided, different subjects could not test and confirm or disconfirm the same knowledge claims about that world, but only very different claims about their own experience. If everyone only ever tests (and understands) a sentence by translating it into their autopsychological language, then there are no sentences that are ever tested in common by different people. It is clear why this is an instance of the social charge: whatever was reconstructed here, it was not the intersubjectivity of science, for methodologically solipsist simulacra for that were not provided.

This criticism was put to him first by Heinrich Neider in December 1929.

I said to Carnap: "You will have to drop the auto-psychological basis, because sentences concerning the auto-psychological domain are not intersubjectively verifiable, and sentences which are not intersubjectively verifiable cannot belong to science. Philosophy can consider them in explanations of how these sentences came to be formed and once they are formulated then they must be intersubjectively verifia-

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[14] For discussion and references, see Uebel 2007. 103–123.

ble." We talked for a long time and then Carnap asked me: "That is indeed a correct observation …" Neurath was delighted. Neurath had not been with us then, but the following evening we were at his house and told him about it. He said: "Of course, finally!", for with this a bridge was built towards materialism, which he valued so much as the philosophy of the workers' movement. (Neider in Haller & Rutte 1977. 29–30.)

In light of the foregoing remarks, we must consider the logic of Neider's criticism and see whether it really does apply, whether, for instance, the difference between simulation and recreation was observed.[15]

V.

The difficulty of making the social charge stick can be brought out by considering disagreement about an observational claim.[16] In the intersubjective language L_{IS}, differences about observational claims concerning a physical object, say "Po_{IS}", are unproblematical: subject A affirms "Po_{IS}" and subject B denies "Po_{IS}". There are two subjects which take conflicting attitudes towards the same proposition about a physical object. But how would things look according to the *Aufbau*?

If we imagine — from the vantage point of the objective perspective that also can observe the structural similarity of different streams of experience — different subjects operating with autopsychological protocol languages, we get the following result. Agent A has to translate the observational claim "Po_{IS}" into her protocol-language L_A, "Po_A", and affirm it, while agent B has to translate the observational claim into her protocol-language L_B, "Po_B", and deny it. Clearly, what A affirms is not what B denies – contrary to the situation we wanted to reconstruct. Intersubjective disagreement stays unreconstructed.

Now it might be thought that this misdescribes the situation. Are the statements in the protocol languages of the two subjects not translations of a statement of the intersubjective language (or its denial) and is it not in virtue of this relation of translatability that the two statements of the different protocol languages stand in the logical relation of contradiction? The objection is not without merit, but it holds only as long as it is the case not only that intersubjective languages are translatable into autopsychological protocol languages but also that the latter are translatable into the former. But precisely this they are *not* according to the *Aufbau* – it was only in 1932 with "The Physical Language

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[15] For a dating of Neider's argument and discussion of its context, see Uebel 2007. 130–136; for the subsequent campaign by Neurath, with numerous references, see Uebel 2007. Chs. 6–8.

[16] The argument could also be put in terms of agreement, but disagreement makes it more vivid.

as the Universal Language of Science" that Carnap granted this (in effect: re-) translatability of the autopsychological language into the physical language.[17]

Prior to 1932, Carnap's autopsychological protocol languages possessed a *je-ne-sais-quoi* that prevented their translation into the intersubjective language (and thereby presumably also the re-translation of a formerly intersubjective content which, once mixed with the autopsychological *je-ne-sais-quoi* could not be distilled out again).[18] We must conclude, given the state of reconstructive play defined by the *Aufbau* (i.e., no re-translatability from the autopsychological into the physical language), that if there ever are two subjects operating according to methodological solipsism, they could neither agree nor disagree with each other, in fact, they could not communicate at all. They would be caught in their autopsychological protocol language – a state clearly at variance with science as it is conducted: intersubjectively.

So much the for what methodological solipsism (under the *Aufbau* conditions outlined) comes to from an objective or outside vantage point which recognizes there to be two different subjects. This is not a conclusive argument against methodological solipsism (as deployed in the *Aufbau*), however, for this only shows that intersubjectivity cannot be *recreated* by intersubjectivization, but not that it cannot be simulated by it. To investigate this we must try to model the situation subjectively, from the inside, as the agents involved envisage it from the perspective of a subject in the methodologically solipsist condition. Can *A*

[17] See Carnap 1932a. The *Aufbau* itself keeps quiet about this untranslatability, but Edgar Zilsel 1932. 145–146 also noted and remarked upon this asymmetry. It might be thought that I make too much of what is but an oversight in the *Aufbau*. To think so is to forget, however, that according to the model of the *Aufbau* testing and understanding happen only at the level of the autopsychological language: the physical language is understood mediately only. Given the direction of reduction, understanding depends on the autopsychological base. Likewise it is no good to point to Carnap's claim elsewhere in the *Aufbau* that, given psycho-physical parallelism, not only are "all physical objects reducible to psychological ones" but also "every statement about a psychological object is translatable into a statement about physical objects", that between them obtains "mutual reducibility" (§§ 57–58, 92–93). Surely then, the counter would go, autopsychological statements Po_A and *not-Po_B* are translable back into the physical language so as to disagree there (as to whether Po_{IS} obtains). To this it must be responded that in §§ 57–60 Carnap addressed the general theory of constitution systems, as he did when he stated, in § 62, that a constitutional system of concepts could also be erected on a physical basis. Such statements say nothing about the specific constitution system developed in the *Aufbau*, but outline the possibilities opened up for constitution systems generally by the assumption of psycho-physical parallelism. It was from this array of possibilities that Carnap then chose the particular reduction relations of the *Aufbau*, namely the methodologically solipsist ones that mirrored the order of epistemic primacy that he took to obtain: cultural objects to heteropsychological objects, heteropsychological objects to physical objects, and physical objects to autopsychological objects (§§ 59 and 64, at 95 and 101). The distinctive feature of Carnap's actual *Aufbau* among the many possible *Aufbaus* he could have constructed is that the autopsychological language translates the physical language but is not translatable back into it. For further discussion see Uebel 2014.

[18] Carnap never specified the *je-ne-sais-quoi* element beyond suggesting it to be peculiar to the meaning of the autopsychological language; see again Uebel 2014.

represent *B's* disagreement with *A's* observational claim? Let's put aside the question of how *B's* body (to which psychological states are to be attributed) is to be constructed from *A's* evidence in the absence of explicit definitions of physical objects in phenomenal terms (Quine's complaint): suppose (*per impossibile*) it had been done. What's relevant now is the question how *B's* disagreement with *A's* observational claim is rendered by *A*.

We begin by observing, as before, that *B's* own description, "*not-Po$_B$*", would not be available for *A*, for that employs *B's* autopsychological protocol-language *L$_B$*: evidently, *A* cannot use that. But "*not-Po$_A$*" will not do either, it would appear, for, equally evidently, *B* cannot use *A's* autopsychological language *L$_A$*. *Po$_A$* and *Po$_B$* do not speak about the same thing or have the same content, they are not identical protocol sentences. (One talks about *A's* experiences, the other about *B's* experiences.) However, if it is not the recreation of intersubjectivity that we are after, but merely its simulation, why isn't it good enough for *A* to represent B as holding "*not-Po$_A$*" etc.? Why will the solipsist fiction not do? For purposes of simulation (unlike for those of recreation) no pre-established harmony is needed, only assurance that the merely fictitious intersubjectivity entertained by *methodologically* solipsist subjects is harmless and does not impede the maintenance of a belief system that is functionally equivalent to the belief system their non-methodologically solipsist counterpart possesses.

It may be wondered whether a thin reconstruction of intersubjectivity, one that abstracts from the give and take of real intersubjectivity (like the simulations under consideration), could do the job. In particular it may be thought that there is an additional layer of complexity that emerges when we turn from the question whether physical objects have been successfully reconstructed to the question whether other subjects have been successfully reconstructed – and that this additional layer remains out of reach for methodological solipsism, so that attempts to simulate another with the resources of an autopsychological language inevitably compare unfavourably with simulations of physical object discourse in autopsychological language. Attempts at simulating intersubjectivity, the suspicion goes, are much more complex. For the other is not just a body but also a mind and that means that the task is to simulate that mind's representational activity – which includes the reflexive representation of its own and others' representational activity.

Again the critic stumbles over the difference between simulation and recreation. Of course, from a methodologically solipsist base I cannot recreate a point of view truly independent from mine: in that sense it can and must be questioned whether an autopsychological language can sustain the conception of another mind. But if it is granted that from a methodologically solipsist position I can simulate cognition of another body (as it is, prior to the physicalist charge, by default) and that a description of a mental event can be attached, under certain conditions, to another body whose cognition is simulated, then what should

stop a methodologically solipsist subject from attributing the ability to represent representing, reflexive mental states, to another body? It is hard to see what should make the simulation of complex, i.e. reflexive, mental states of another so difficult, if the simulation of first-order mental states of another is granted.[19]

It must be admitted that is difficult to establish that methodologically solipsist reconstructions like those envisaged by Carnap are functionally inferior – given what we have to grant (we may add: counterfactually) to avoid anachronism. Granted that another body (by definition a transcendent object) can be simulated, there seems to be nothing to stop Carnap attributing mental states to that body so as to make sense of the "expressive events" observed to be happening there (§ 140, 216). But does this mean that methodological solipsism carries the day?

VI.

Let us return to Neider's charge that Carnap's methodological solipsism fails to reconstruct the intersubjectivity of science as required. In light of our discussion we must distinguish: required for what? It is clear that Neider's charge is correct in this respect: Carnap's methodological solipsism fails to represent the intersubjectivity of scientific discourse correctly. Scientists do agree or disagree about statements in the intersubjective physicalist language. But what this criticism amounts to is that true intersubjectivity is not being recreated. What Neider's criticism does not establish is that Carnap was unable to simulate intersubjectivity for his own epistemological purposes (which do not include, as we saw, humdrum justification).

Precisely this is the conclusion that Carnap came to. In *The Old and the New Logic* he therefore drew a new picture of the relation between the intersubjective physicalist language and the methodologically solipsist protocol language.

> The analysis of the concept of science has shown that […] they can be reduced to root concepts which apply to the 'given', to the content of immediate experience. […] Thus, a genealogical tree of concepts results in which every concept must in principle find its place according to the way it is derived from other concepts and ultimately from the given […] ('methodological positivism') […] A second constitution system, which likewise includes all concepts, has physical concepts for its basis, i.e., concepts which apply to space and time […] ('methodological materialism') […] the positiv-

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[19] *Nota bene*: it is Carnap's *Aufbau* that is immunized from typical criticisms by the distinction between simulation and recreation. Once a more traditional epistemological agenda is pursued, as in *Scheinprobleme der Philosophie* ("Pseudoproblems of Philosophy", 1928b), the dialectical situation changes significantly, but this cannot be dealt with here beyond some brief hints below.

ist and the materialist constitution systems do not contradict one another. Both are correct and indispensable. The positivist system corresponds to the epistemological viewpoint because it proves the validity of knowledge by reduction to the given. The materialist system corresponds to the viewpoint of the empirical sciences, for in this system all concepts are reduced to the physical, to the only domain which exhibits the complete rule of law and makes intersubjective knowledge possible. (Carnap 1930/1959. 143–144.)

Note that here both constructional systems — and so also the physical one — are "indispensible". This marks a change from the *Aufbau* where the physical system was merely recognized as possible and where the rational reconstruction of scientific knowledge was assumed to be able to get by with just the constructional system on an autopsychological basis. So Carnap now operated with a two-language model, according to which the business of intersubjective science was conducted in the physicalistic language, but for which a translation into a phenomenalist protocol language was still required to provide its claims with epistemological justification.[20] (At this point, the physical language was held be a universal language into which all and only other intersubjective languages were translatable.)[21]

Needless to say, this only ameliorated but did not solve the problem that critics of methodological solipsism perceive. It remained the case that, as in the *Aufbau*, first-person reports about psychological states were not translatable into physical statements. The asymmetry between autopsychological and heteropsychological stayed in place: only the latter were translatable into the physical language. Epistemologically nothing much had changed.[22] Predictably, this was the point subsequently pressed by Neurath, who had started a campaign for radical physicalism, i.e. the sole employment of the physical language, and to this end devised a succinct private language argument. This story I have told elsewhere.[23] Here I can only summarise the brisk development and note three questions arising.

In order to accord fully with the intersubjective nature of science, one's evidence sentences required full translatability into the intersubjective physical language, for without it they fall outside of science while science itself remains

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[20] Another change, vis-a-vis *Aufbau*, is this emphasis on reduction for *validational* purposes.

[21] This was spelt out in manuscripts from 1930 – early drafts, later revised, of "Die physikalische Sprache als Universalsprache der Wissenschaft" and "Psychologie in physikalischer Sprache" – in which Carnap spoke of two universal languages, the physical and the phenomenal language of which the former was limited to the domain of intersubjective languages; see Uebel 2007. ch. 6.

[22] Except, as noted in a previous footnote, the switch to the project of now validating individual knowledge claims.

[23] For a detailed analysis of this stage of the Carnap–Neurath debate, see Uebel 2007. chs. 7–8.

epistemologically incomplete. The consequences are evident. Originally Carnap's protocol sentences were meant to formulate what was directly given and to provide the basic sentences for methodological solipsism. But once they are treated like physical sentences they fall under the same epistemological regime as the rest of the physicalist language. This means that the primacy of the intersubjective language has been established and that the first person has lost its unconditional privilege. This, of course, was the position Carnap endorsed by the end of 1932. Accordingly, Carnap excluded methodological solipsism from playing any further role in "the logic of science", which he soon declared take the place of (traditional) epistemology.[24]

One question which arises is how Neurath's argumentation dealt with the distinction which helped Carnap to block Neider's argument from having consequences for his epistemology, the distinction between recreation and simulation. The short answer is that Neurath's private language argument called into question whether it was possible for a solitary individual to sustain and ensure the consistent use of her language and thereby undercut a fundamental assumption of the simulation project pursued by methodological solipsism. The second question is closely related. What prompted Carnap, who, after all, found Neurath's argumentation difficult, to drop his simulationist resistance? The all-too-short answer is that Carnap changed his meta-philosophical perspective from rational reconstruction to adopt the stance of "logical tolerance".[25] Thus arises the third question. Given this change of perspective, does it still make sense to speak of Carnap's "overcoming" of methodological solipsism? The again too short answer is that logical tolerance does not prevent the adoption of non-essentialist, pragmatic first-order philosophical positions as superior to the competition. Needless to say, longer answers are needed but must be deferred.

What I tried to show here was only that and how Carnap's methodology of rational reconstruction in the *Aufbau* appeared to render impervious to criticism a conception of epistemic order that, given his revolutionary philosophical fervor elsewhere, was remarkably traditionalist.

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[24] See Carnap 1934/1937. Part V and 1936; for discussion, see Uebel 2018.

[25] While logical tolerance introduced as such only in Carnap 1934/1937, § 17, it was already operative in his (1932b) which renounced the unconditional privilege of the first-person perspective and the demand for methodological solipsism.

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