The Pragmatist's Troubles with Bivalence and Counterfactuals

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RÉSUMÉ : Je me demande ici si les conceptions pragmatiques de la vérité peuvent être réconciliées avec les intuitions ordinaires quant à la portée de la bivalence. Je soutiens que les pragmatistes sont conduits à accepter une distinction du genre «type / occurrence» entre les formes d'une investigation et ses instanciations particulières, sous peine de banaliser leur vérificationnisme. Néanmoins, même la conception révisée que j'examine échoue à sauver les approches épistémiques de la vérité de certaines conséquences peu plausibles.

Pragmatic accounts of truth are faced with apparent difficulties when it comes to the application of bivalence to statements which cannot be verified using ordinary methods. Some authors, including Jardine, Appiah, and Misak have appealed to the use of counterfactuals as a way to deal with such worries. Misak's respective discussions (Misak 1990, 1995) of Jardine and Appiah, however, suggest pragmatic motivations are undermined if the counterfactuals used within a theory of truth are not constrained in certain ways. Misak's own appeal to counterfactuals reveals a tension between commonplace modal intuitions and the internal demands of pragmatism. In attempting to resolve this tension, I will identify and discuss a deeper problem within such an approach to truth. I will begin by canvassing Misak's objections to the extravagantly unruly counterfactuals employed by Appiah and Jardine. After that I will show how Misak's own suggestion that we ought to treat bivalence as a regulative assumption of inquiry falls prey to a related difficulty. I will then consider a new way counterfactuals might be used by the pragmatist which respects the spirit

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of Misak's objections. Although this proposal will seem initially attractive, I will argue it ultimately fails to rescue pragmatism from its difficulties with bivalence. The analysis of this failure helps establish that pragmatic truth needs to be re-interpreted as an account solely of doxastic states.

Nowadays it is commonly thought that truth is correctly conceived as a metaphysically deflated notion. Traditional correspondence theories are often said to fail to provide credible explanations of what facts are or for what it is for a proposition to correspond with a fact. This leaves correspondence accounts without the resources to explain certain central features of truth. One such feature is that propositions which satisfy their conditions of proof are considered true. But if the nature of the correspondence relation between a proposition and reality is left obscure, there is no way to make sense of why the satisfaction of conditions of proof should serve as a marker for the possession of truth. This failure to keep sight of the connection between truth and the concepts grounded in our epistemic practices, such as experience, inquiry, and assertion, has prompted theorists seeking an alternative to correspondence to reject accounts involving mysterious metaphysical concepts.

The dominant deflationary alternative, offered by disquotationalists, is metaphysically austere in the following sense: there is no further property of truth beyond the equivalences generated by the "Disquotationalist Schema" (DS). Here, truth is said to be completely captured by biconditionals of the form, "'p' is true iff p." The concept of truth is "deflated," leaving only the infinite list of sentences expressible through the DS as the content of the truth predicate. Some have expressed doubts about the adequacy of this approach, arguing "deflationism shows a tendency to inflate under pressure" (Wright 1992, p. 13). Others, encouraged by such "inflationary" arguments, have tried to revive interest in the pragmatist tradition, particularly as developed by C. S. Peirce. The latter system aims at a conception of truth which goes beyond the triviality of the DS while sharing the disquotationalist's distaste for metaphysics. Misak's critique of Jardine and Appiah sets the groundwork for what follows, and my polemical ends will be best served by leaning heavily on her discussion of pragmatism and its corollaries. I will now focus on the key features of this Peircean approach, as articulated by Misak.

The central pragmatist notion is that truth and objectivity must be intimately associated with our epistemic practices. As Misak puts it, pragmatists have sought to articulate "a view of ourselves in the world . . . which does not appeal to anything beyond observation and inquiry" (Misak 1995, p. 142). This is one way of saying that empiricist commitments provide motivation to accept some form of the principle of verification. The principle of verification, broadly conceived, amounts to the claim that only expressions which have some connection with experience are meaningful. Of course as it stands this is quite vague. What, for instance, is the

nature of the relation between beliefs and experience? How exactly are the notions of observation and inquiry to be unpacked? These questions will be examined within the context of a problem closely associated with the pragmatist's use of the principle of verification. The problem concerns the status of sentences which seem verification-transcendent and raise difficult questions about the status of bivalence. In spite of this, it might seem an advantage of the pragmatic approach over other deflationary accounts in that it does not prejudge the issue of whether bivalence applies to any given statement; it is open to the pragmatist to be able to account for certain failures of bivalence which we may sometimes expect.[1] Hence, the pragmatism I am considering does accept the DS, but only where it is believed that bivalence holds for a given class of expressions.

Given the finite investigative capacities of human inquirers, verification must come to an end somewhere. Yet there are plenty of sentences which do not seem to conform to such limits; they are, as Edgington says, "verification transcendent" (Edgington 1981, p. 153). In what follows, I assume (with Edgington and others, notably Dummett) that the difference between realism and anti-realism hinges on whether or not bivalence applies to a given class of expressions. If truth is closely linked to inquiry, what are we to say about those statements whose truth or falsity we have no means of investigating? Does the principle of bivalence fail to hold for such statements or not? It is a well-known adjuration of Dummett's[2] that we ought to give up bivalence in such cases; however, for many this is wholly unsatisfying. Dummett insists that what determines which expressions are verification-transcendent are the limits of actual inquiry, that is, whatever methods are presently at hand. Statements which are undecidable in this sense do not refer to real objects, properties, or events. This counsel of despair obviously runs against the grain of many pre-theoretic intuitions. It seems quite apt to regard many kinds of undecidable expressions, in Dummett's "here-and-now" sense, as being either true or false. Take, for example, statements about the remote past such as "There was no Mendelevium on Earth a billion years ago." I think one good reason our intuitions recoil from denying bivalence to expressions like this is because it would call for a radical and unmotivated revision of the concept of truth. A central feature of truth, acknowledged even by some stalwart pragmatists such as Misak, is that truth, unlike belief, or warranted assertion, is stable. The truth about some matters, most certainly those involving indicative statements about the distant past, is not contingent on the state of the art of inquiry. The introduction of new methods and processes of investigation do not, as it were, *create* new truths about how many atoms of Mendelevium existed long ago. Notice that the Dummettian conception also treats all unverifiable statements in the same way. Statements involving explicit normative judgements are just as dependent on human inquiry as any scientific claim. While it *might* be plausible to suppose

judgements about humour, aesthetics, etiquette, and traffic regulations would fail to satisfy the principle of bivalence if humans were to disappear, the canon of scientific and mathematical truths would presumably remain unperturbed after we were long gone. (Notice this counterfactual is also here-and-now unverifiable; it too fails to satisfy bivalence for Dummett.) Of course one cannot always expect raw intuitions to provide trenchant and unequivocal insight into the correctness of philosophical theories. The question of whether bivalence applies to expressions in ethics, for instance, is a delicate matter lacking consensus, intuitive or otherwise. Nevertheless, it seems an interesting and valuable project to try to find a way to reconcile common sense with anti-realism as defined above.

Many would willingly follow Dummett to a limited extent, adopting his characterization of the difference between realism and anti-realism. We are realists about a topic wherever the truth predicate can be correctly applied to sentences within that discourse. By "discourse" I mean a class of expressions which can be roughly characterized as belonging together in virtue of a shared subject matter; this makes ethics a discourse, as well as quantum mechanics and art criticism. This construal of anti-realism presents a "most pressing difficulty" (Misak 1998, p. 415) for the pragmatist: How is the essential pragmatist tenet, "that truth is linked to inquiry-truth does not go beyond inquiry" (Misak 1990, p. 171), to be reconciled with the notion that statements which cannot be confirmed or disconfirmed by any actual inquiry nevertheless can be either true or false? Consider the hypothesis "Churchill sneezed exactly fifty-one times in 1949"; it is hard to see how the pragmatist can maintain that this satisfies bivalence if inquiry fails to establish its truth value. Presumably, there once was evidence that could have decided the matter but has since dried up; these are questions about real things we are simply no longer able to observe. Accepting this sort of "core" intuition about bivalence fixes Dummett's view as a benchmark for what counts as an unacceptable conception of truth. The tempting thought that determinate truth values could have been determined by inquirers who had been in the appropriate epistemic position provides a whiff of the counterfactual accounts to come.

Jardine (1986) and Appiah (1986) both attempt to situate the kinds of intuitions about truth just mentioned within a pragmatist tradition. The strategy they both employ attempts to broaden the scope of inquiry by invoking counterfactual claims about non-actual but logically possible lines of inquiry. Counterfactually specified forms of inquiry have an immediate appeal because they hold the promise of allowing one to apply bivalence to otherwise verification transcendent expressions including those indicative expressions concerning the remote past. Jardine and Appiah hope to preserve the connections between truth and inquiry but in a way that avoids the grossly implausible "here-and-now" verificationism of Dummett. Inquiry is conceived very broadly, quite beyond Dummet's or

the logical empiricists' uses of the principle of verification. These moves have been criticized by Misak on the grounds that the counterfactuals employed by Jardine and Appiah extend the horizons of inquiry too widely, undermining the original pragmatic motivation for accepting some form of the principle of verification. Despite this, Misak also needs access to some counterfactuals in order to treat bivalence as a regulative assumption of inquiry. The discussion of these three theorists exposes internal constraints on the sorts of counterfactuals pragmatism can permit.

Jardine and Appiah both argue against the underdetermination of evidence-transcendent statements in order to preserve bivalence for many kinds of expressions. Jardine's proposed solution asks us to invoke what he calls "counterfactual bravado." By this Jardine means to conceive of counterfactual inquirers as having enhanced investigative capacities. For example, Jardine thinks that an indicative statement about the distant past such as "[H]ow many tyrannosaurs were there 80 million years ago . . . ?" (Jardine 1986, p. 29) does not violate bivalence because "were we able and willing to travel back to the time in question and count them, we would count some number *n* of them" (Misak 1990, p. 174). Jardine thinks "we must imaginatively escape from the spatio-temporal limitations on the evidence-gathering capacities of ourselves and other physically possible inquirers"; in this way such beings can be thought to be "evidentially unrestricted" (Jardine 1986, p. 30). By engaging in counterfactual bravado, we are supposed to confer whatever investigative powers are required in order to counterfactually place investigators in the appropriate epistemic position required to verify a given indicative statement.

One could quibble about the more exotic counterfactuals that must be admissible on Jardine's account. The conceptual and practical barriers which can be marshalled against the possibility of time-travellers going about their investigations on a Cretaceous Earth are, shall we say, daunting. Likewise for the notion of Jardine's travellers snooping around an Earth inhospitable to life, or better still, a universe too hot to allow the existence of atoms. But such indulgences precisely reflect Jardine's point. We are supposed to imagine our investigators as having any logically possible powers needed to perform their tasks including, perhaps, immunity to the extreme conditions of the early universe; hence "counterfactual bravado" and not "timidity." Misak sidesteps the exotic controversies spawned by Jardine's proposal by focusing on the more banal fact that Jardine's counterfactuals are all directed towards the past; towards what inquiry might have been, instead of what it could be. This raises certain difficulties for his account which will prove enlightening later on.

Rather than focusing on the more extreme counterfactual scenarios, she imagines a "mundane" instance of counterfactual bravado: "We simply imagine that, say, Churchill's friends and acquaintances conspired to count his sneezes" (Misak 1990, p. 174). The truth conditions Jardine

envisages involve a backward-looking counterfactual like this: a statement H is true if the subjunctive conditional "If H had been pursued, H would have been agreed on" is true. One problem with Jardine's suggestion is that the truth of some matters now seems to depend on the performance of some particularly fallible inquiries. But particular inquiries can be flawed in various ways: Churchill's friends might miscount, and so on. Whether conducted by Churchill's friends or by Jardine's well-equipped time travellers, trusting in the deliverances of any particular inquiry seems an insecure hook on which to hang the concept of truth. An additional difficulty is that the results of different fallible investigations are in no way guaranteed to be commensurable. By ignoring this possibility Jardine's bravado seems in danger of treating truth as highly unstable, in the style of Dummett.

Misak suggests that what is needed instead is an idea of what fruits inquiry in general would bear over an indefinitely prolonged period of time. What proximate investigations turn up can only include "empirical adequacy, explanatory power and the like" (Misak 1990, p. 175). Her complaint is that Jardine's backward-looking counterfactuals do not construe truth as what unhindered inquiry would produce, nor does it involve "progression, improvement, and getting as much evidence as would be possible" (Misak 1990, p. 175), contrary to fundamental pragmatic assumptions. Counterfactual bravado thus seems to undermine its own purpose, that is, to close potential gaps between truth and inquiry.

These difficulties gesture towards two principles which can be used to guide the construction of counterfactuals for pragmatists interested in bivalence. First is the idea that counterfactually conceived inquiry must be *forward-looking* in the sense that the cited counterfactuals must be directed towards future states and processes. The other constraint I will call the "generality condition," which is to say there is a requirement to eschew resting the establishment of truth on the efforts of particular fallible inquirers. Notice that these constraints seem mutually supportive. If an inquiry is directed forward indefinitely then it will also satisfy the requirement that truth not depend on the outcome of any particular fallible investigation. Likewise, a natural way to avoid restricting inquiry to a finite set of investigations is to indefinitely prolong the introduction of new investigators and methods for gathering evidence.

In a charitable spirit, Misak considers what happens if we take counterfactual bravado to require that we regularly send back fresh inquirers at regular intervals. This way there is a progressive accumulation of evidence, thereby re-orienting the relevant counterfactual to both a forward-looking and general perspective. Misak thinks this still does not insulate Jardine's counterfactual bravado from a different sort of objection.[3] Reflection on this objection suggests a third way to constrain the counterfactual accounts under discussion. However it also brings out the tension in Misak's position I hinted at earlier.

Misak says even supposing Jardine holds that, say, the sneeze-inquiry is not linked to any particular fallible inquirer (thereby satisfying the first two constraints mentioned above), introducing time-travelling investigators undermines the pragmatist motivation to accept the principle of verification. She maintains the connection between truth and inquiry will fray to the point of breaking given that "pragmatism is not interested in any counterfactual world. It is interested in the actual world" (Misak 1990, p. 176). Jardine's bravado does not "engage . . . with . . . what inquirers would actually have to take account of" and "abandons the pragmatist's commitment to . . . how it is conducted and replaces it with . . . what . . . inquiry would be if inquiry were something it is not" (Misak 1990, p. 176). If this is what pragmatism ought to avoid, what ought it to aim for? In the concluding sentence of the same paragraph she tells us pragmatism "is interested in . . . what inquiry would be if it were diligently pursued under favourable conditions" (Misak 1990, p. 176). Take this point as introducing the third constraint on the specifications of counterfactual conditionals, namely, that they may only specify *actual* forms of inquiry.

Misak suggests that taking bivalence to be a "regulative assumption" of inquiry is an alternative way to preserve the pragmatist's commitment to the principle of bivalence. What, then, is involved in making bivalence a regulative assumption? Misak tells us we must be moved by what Peirce called the "hope of success":

> If we were moved to inquire, inquiry would throw up a hypothesis which eventually would be settled upon. This optimism is a regulative assumption of the practice of inquiry. Inquirers must assume that, if we were to diligently inquire into any given question, there would be an upshot to our inquiry. (Misak 1990, p. 176)

The mere hope of success does not itself *make* bivalence hold; the view is rather that, following Pierce, Misak regards his taking bivalence as a regulative assumption of inquiry akin to "the need to make the assumption that he has money in his account, if he is ever to write cheques on it. But the indispensability of course never affected his balance in the least" (Misak 1998, p. 415). Misak therefore maintains that there are classes of innocuous counterfactuals. For example, for any hypothesis H, she says, "If H were to be the best that inquiry would produce then H would be true" (Misak 1990, p. 174). The tension should now be easy to spot. If this is what it means to treat bivalence as a regulative assumption, then Misak has herself succumbed to the very same objection she raises against the charitable revision of Jardine's bravado. The point is simply this: whatever inquiry "would be" under favourable conditions does not describe the actual world. Misak's regulative assumption is clearly characterized as a counterfactual state of affairs. It therefore violates her own criticism of

Jardine's bravado, namely, that he appeals to epistemic practices which stray from the actual world. The claim that "pragmatism is not interested in any counterfactual world" is followed immediately by the suggestion that pragmatism is interested in "what inquiry would be" if it were pursued as far as it could fruitfully go (Misak 1990, p. 176).

The sense of conflict is reinforced in a later work (Misak 1995) where she admonishes pragmatists to avoid counterfactual bravado, for

> if we construe human inquirers as being something which in fact they are not, but which they might be or might have been . . . a statement S about the past is true if you or I or some other fallible inquirer went back in time to check and, after checking, took S to be true. (Misak 1995, p. 141)

This is ill-advised for the pragmatist since "such a move is contrary to the spirit of the pragmatist view that truth is the best that actual inquiry would do under favourable circumstances" (Misak 1995, p. 141). Disregard that the objection seems to entangle the "forward-looking" and "generality" constraints with the "actuality" constraint. Focus instead on her rejection of the expansion of inquirers' capacities beyond actual methods. Strictly interpreted, this disallows anything like a counterfactually specified regulative assumption of bivalence. In effect, it is to retreat into Dummett's stringently verificationist council of despair. Since Misak is rightly interested in preserving many of our common-sense convictions about the scope of bivalence, some looser reading of the actuality constraint seems necessary. The objection about non-actual forms of inquiry, and the tension between spurning yet nonetheless needing counterfactuals, arises again in the case of Appiah.

Appiah, like Jardine, concerns himself mainly with statements about the past. He argues that Dummett and the positivists share an overly "conclusive" notion of verification. Like Jardine, Appiah wants to adopt a very broad conception of inquiry. This is done, once again, in the sense of including non-actual but logically possible lines of inquiry when deciding matters related to the applicability of bivalence to sentences which can neither be confirmed nor disconfirmed. Misak (1995, p. 138) remarks that Appiah agrees our pre-theoretic intuitions about the scope of bivalence cannot be easily shrugged off. Like Jardine, Appiah questions the assumption that human investigative limitations should be considered relevant to questions of verification. But his proposed method for generating truth-apt counterfactual statements represents a more delicate approach. Appiah thinks we instead ought first to distinguish between our cognitive and physical capacities. Cognitive capacities include the "limitations we are under in virtue of limitations of memory, attention and computational capacity" common to all humans (Appiah 1986, p. 59), whereas physical capacities include such finitudes as spatio-temporal access (p. 58) and

lifespan (p. 57). With this distinction in mind, Appiah suggests a weakened version of the counterfactual bravado offered by Jardine. On Appiah's account, we regard our intellectual capacities as fixed. It is only our physical capacities which are extended without restraint in counterfactual situations. Yet, there is likely not any principled difference between abstractions of life-span and abstractions of memory, brain size, or computational capacity. Consider a calculation that would take one centuries to perform. Life-span is therefore already a constraint on computational capacity. Appiah himself (1986, p. 59) seems close to acknowledging this, admitting, "this simple contrast reveals a host of difficulties."[4]

Consider now how if Appiah's (and arguably Jardine's[5]) distinction between physical and cognitive capacities really does break down, their accounts cannot rule as inadmissible such logically possible inquirers as an omniscient God or otherwise spooky forms of evidence-gathering, including mystical insight or psychic intuition. Since God is a logically possible inquirer, could one maintain that "an omniscient God secures the reality of the world" (Misak 1995, p. 143), and, furthermore, that this is a kind of verificationism? This would be to say that if P is true then God can know that P is true. Pressing home the demand to keep inquiry tied to the actual world, Misak says the kind of trivial verificationism this entails once again totally undermines the motivation to connect our epistemic concepts "legitimacy, objectivity, meaning, truth, or whatever" (Misak 1995, p. 144) with our practices: "If restrictions on the endowment of inquirers are entirely relaxed, verificationism is 'vacuous'" (p. 143) and "loses all appeal" (p. 142).

It is not clear the charge of absolute vacuity will stick. Does God know what it is like to be weak, or ignorant, or to be me typing this sentence? Perhaps examples such as these show the concept of omniscience is self-refuting. If so then the logical limit of counterfactually unrestricted inquiry is less spectacular than initially assumed. All the same the kinds of inquiry admissible into the desired counterfactual account must not be "too far removed from what actually goes on in inquiry" (Misak 1995, p. 143). Yet, how are we to decide what kinds are too far removed? Misak argues Appiah's approach undermines the pragmatist's motives for adopting the principle of verification because Appiah's cognitively constrained bravado still allows for counterfactuals which are freed from the bonds of actual inquiry. So then why is not *any* departure from practices "here-and-now" a disloyal strike against pragmatism? To put the same point a little differently, why not regard Dummett's view as commanding the most legitimate pragmatist credentials? This raises the tension introduced above in another guise: if it is sensible and pragmatic to spurn non-actual inquiry, why not regard Dummett's view as the most sensible and pragmatic to adopt?

Misak's further criticisms of Appiah and Jardine centre on the third constraint I mentioned on the sorts of counterfactuals that a pragmatist concerned with bivalence should allow. Misak claims that any pragmatic appeal to counterfactuals in order to handle problems with bivalence must pick out a subset which only includes practices which are close to our own, in some admittedly vague sense. Recall now Misak's first constraint, namely, that the counterfactuals must be forward-looking insofar as only those inquiries which aim at the truth can be cited, that is, in the sense of what our best endeavours would produce if allowed an unhindered investigation. Add to this the two other major constraints she implicitly suggests, specifically, that the desirable counterfactuals must not mention any *particular* line of inquiry and must allow for only *actual* forms of inquiry. Below I shall discuss a counterfactual account of Misak's regulative assumption which tries to satisfy all three of these conditions.

It may initially appear that these constraints do not sit entirely well with each other. The notion that counterfactuals must mention both general and actual methods might seem conflicted. Next I will consider whether the air of disharmony here is relieved by deploying a type/token distinction to the notion of actual inquiry—that is, whether the difference between type and token inquiries will clarify what appears to be an oxymoron: a counterfactual constrained by what is actual. The challenge ahead for Misak and other pragmatists is to show the following is a false dichotomy: either inquiry is restricted to our actual limits (here and now) or there are only logical constraints.

I now turn to the issue of making the notion of actual methods more precise. To simply say "If we had the evidence necessary to decide questions about the remote past an answer would be forthcoming" makes no mention as to how we actually get that evidence. Such a counterfactual makes no mention of specific lines of inquiry, but makes no explicit break with non-actual methods either. To make this explicit, consider the following distinction: perhaps we ought to focus on *kinds* of inquiry and avoid talk about specific tokenings of investigations within the appropriate counterfactuals. This would be to restrict the counterfactuals about statements which are unverifiable to physically possible forms of inquiry. As a contrast, consider first how Appiah concentrates on the practices of particular inquirers, as when he discusses the investigative capacities of "a creature with increased powers," "a person with my cognitive powers (or yours) [who] had been around a million years ago," "there having been a long lived person," and so forth (Appiah 1986, pp. 58, 60, 83). Not surprisingly, Appiah's account was criticized for focusing too narrowly on the actions of particular fallible inquirers. By deploying the distinction between our actual token-practices and the physically possible kinds of practices inquirers like us are capable of, the excessive vagueness of the counterfactuals might be dealt with in a way that does not violate the

three required conditions. Instead of employing counterfactuals which cite the efforts of particular inquirers, the present suggestion is that we restrict them to inquiries belonging to our (actual) *kind* and ignore (by abstraction) irrelevant details such as specific times and places. Then the right test is not one that a certain someone with our physical or cognitive capacities could perform; rather, here we should say there are physically possible forms, methods, or modes of inquiry, in the sense that beings with our investigative methods (or creatures or investigators of our kind) could determine truth conditions for given kinds of questions. Here a sentence-token is verifiable, and hence satisfies bivalence, if it belongs to a general class of sentence-type which is accessible to those forms of inquiry-types which may be invoked in the subjunctive conditionals. Recall once more that those counterfactuals must be: (1) forward-looking, (2) make no reference to particular lines of inquiry, and (3) reflect actual methods of inquiry. Since inquirer-types define only general methodological practices the relevant inquiry-types which may be cited need not specify particular times, places, or any other conditions which would fall under the characteristics of any particular investigation. So it does not matter (at least not on the face of it) with respect to verification if token-instances concern matters in the remote past. The token-instances of inquiry (particular investigations) are still a crucial part of the process of abstraction, though, since they pick out which modes out of the set of all logically possible forms of inquiry are relevant to matters of verification: general methods of sneeze-recording are allowed but the hypothetical methods of time-travellers are not. Allow me to illustrate with an earlier example. In the case of "Churchill sneezed 51 times in 1949" one might say there are general (in principle) methods which can be used to investigate instances of human sneezes. This is not to say there must be a general method of counting sneezes, although it would be easier to think about it that way for expository purposes. Since there are, in fact, actual tokenings of sneeze-counting this kind of inquiry satisfies the actuality condition. The Churchill example, then, falls under the general class of sentences "Person X sneezed n times between times T1 to T2" which are, as a class, among those which are verifiable. The type is verifiable because the type-inquiry which specifies the general methods used in investigating sneezes is represented by successful tokenings in the actual world. All that is required is that there are mechanisms which detect and record sneezes for any person X. The forward-looking counterfactual "If inquiry were pursued and was unhindered, token sentences of the kind mentioned would satisfy bivalence" is thus true for this case. On this view token-sentences need not actually be verified in order to satisfy bivalence. This allows for the reasonable possibility that an inquiry may have been hindered in some way: some such vicissitude as the evidence drying up, meteor strike, or whatever could prevent an inquiry from running its full course.

Certain points deserve elaboration. There is much which ought to be said about the individuation of the types in question. The basic idea is that a mode of inquiry specifies cognitive capacities, investigative constraints, sensory modality, or perhaps even the topic under investigation. Rough-grained and fine-grained individuations might both be accommodated by introducing nested layers of categorization. A type can obviously be a token of some other type. By a type of inquiry, I mean to appeal to an intuitive carving of experience and knowledge into abstract categories. For example, sensory modalities like vision and echolocation are types of inquiry. Perhaps the topic under investigation can also define a type, when we are interested in the properties of a natural kind. But the point here is not to showcase a theory of kinds or type-individuation. I intuitively assume the notion that time-travelling belongs to a different kind of inquiry than just-plain-looking is not philosophically suspect.

For a given type of inquiry to figure in a counterfactual about the past, that is, in questions of objectivity and verification, that type would have to be represented (physically instantiated) by member tokens. This will only include creatures with those kinds of investigative powers which exist somewhere in the universe although "somewhere" includes a temporal sense. I think that pragmatists interested in preserving our intuitions about bivalence are driven towards accepting this if they are to avoid countenancing an omniscient God, psychics, etc., and falling back into a self-defeating form of counterfactual bravado. The type/token account regards God et al. as mere "shell-inquirers" representing hypothetical types in the absence of any token-inquiry instantiations; these types have no actual representatives. An inquiry-type only describes hypothetical, and not actual, constraints on inquiry. As for which inquiry-types are relevant towards settling questions about the applicability of bivalence, one must consider what kinds are actually instantiated in this world. Inquiry-tokens, then, are manifestations of some inquiry-kind/type. Particular inquirers serve to indicate which of the logically possible candidate kinds can be cited in the needed forward-looking counterfactuals. In this way the constraint on actuality—key to evading a trivialization of the principle of verification—can seemingly be satisfied in a manner which partially transcends here-and-now methods. Perhaps this soothes the tension under consideration.

Consider a further example or two. The idea here is that counting the sneezes of Prime Minister Chrétien today and counting those of Churchill in 1949 are tokens of the same type of inquiry. In both cases the same kind of question is addressed: "How many sneezes were there?"; it is just that one of the token cases is inaccessible to a subset of actual investigators (us here and now). When the questions are compared as kinds of questions, there is no meaningful difference, and so the relevant counterfactuals are the same. Similarly, instead of imagining particular persons

conducting an inquiry millions of years ago, perhaps the tyrannosaur case is an example of the general type of inquiry "counting beasts." This would be to say counting beasts is a real mode of inquiry since there are actual tokenings. These tokenings do not make use of time-travel, so although the kinds of questions the time-travellers would address are admissible, the time-travellers themselves are not. This leaves the scope of bivalence an open question. Yet if unrestricted investigations were carried out on the kinds of indicative statements about the past that "Churchill sneezed 57 times in 1949" is a member of, we would expect determinate answers to be forthcoming.

Another attractive feature of this account is that the notion of *our* inquiries appears to avoid an implausible linkage between a parochial and anthropocentric conception of inquiry and truth. A flexible attitude regarding diverse epistemic styles is preserved. Since inquiry-tokenings may occur anywhere in space and time, past and future human practices count as admissible modes of investigation. Furthermore the discovery of inquirers with methods other than our own would not require a revision of truth or the scope of bivalence. Verification should not be restricted to any particular community of inquirers; rather, it should apply to the sum total of inquirers, again, with inquiry understood in the sense of any sort of inquiry which happens to be instantiated through inquiry-tokenings. This allows for inquirers with radically different sense-modalities from our own. Seager (1999), for example, describes a fish, *Gymnarchus*, whose primary sensory mechanism has no human analogue. This fish has the unusual and highly refined ability to discriminate between subtle differences in magnetic field strengths. The Nagelian question "What is it like to be a bat?" reflects the same uneasiness towards setting *a priori* restrictions on what satisfies the notion of actual experience. The type/token distinction countenances the possibility of weird forms of inquiry, while disallowing the more unreasonably fanciful possibilities; it simply depends on whether or not a given form of inquiry is physically instantiated somewhere/when. This all seems to fit the desiderata for the needed counterfactuals to a T. But, for all that, big problems remain.

I have tried to expand on this proposal in some detail because it seemed an interesting, and hitherto unknown, prospective avenue out of some difficult philosophical thickets. Pragmatic theories of truth, as discussed above, are pushed to accept the type/token-inquiry distinction on pain of evacuating verificationism of its ties to our ordinary conception of experience. It strikes me as the only way open for the pragmatist to go beyond inquiry here and now, while sticking close to the actuality constraint. To avoid the kind of trivial (or near-trivial) verificationism shunned by Misak, the counterfactuals cannot allow for just any old logically possible non-actual modes of inquiry. Those which are merely logically possible have to be disallowed if the most distant non-actual forms, such as an

omniscient God, are to be disqualified. The type/token distinction is more circumspect, and respectably pragmatic, since it makes only those inquiry-types admissible which are actually represented by inquirer-tokens, be they humans, electric-sense inquirers, echolocators, or whatever. The highly idealized, merely logically possible inquirers consistent with the accounts of Jardine and Appiah (or arguably so if the cognitive/physical powers distinction breaks down), such as an omniscient God, are blocked since the notion of "our" inquiry is constrained to admit only those kinds of inquiry which are actualized somewhere in *this* world. Gods, seers, and time-travellers are all out on the grounds that we have good independent reasons to believe that these logically possible inquirers are not real. No exemplars of these forms of inquiry exist anywhere in the actual world. As a rough answer, the type/token distinction seems to satisfy Misak's request for a sufficiently constrained set of counterfactuals. It is an attractive-looking compromise between competing demands: the pragmatic insistence on counting only actual inquiry as legitimate, and the need to go beyond what we experience, right now, if we are to retain a concept of truth worth having. The basic idea is to allow minimal access to counterfactual claims through the restriction provided by inquiry types which are actualized. The remainder of my argument will proceed as follows. The type/token distinction or something close to it is likely the best hope for the pragmatist. But the distinction ultimately fails to resolve the enmity between pragmatism and common-sense intuitions about bivalence. Therefore, pragmatism fails to give an adequate account of truth, and perhaps is better read as providing an account of something else, such as the concept of belief or warrant. To be sure, serious difficulties confront the type/token move I have proposed. I will discuss these next.

It might be thought that from the outset the type/token proposal violates the spirit of the actuality condition in a very direct way. Types can be taken as universals and they might thereby be taken to transcend what we experience here-and-now. "Beast-counting" is not really an actual type of inquiry, if as a category it includes all of the non-actual tokenings of beast-counting. But let this pass.

A second run at what is wrong with the type/token distinction I have offered involves considering the effect on pragmatic truth if there had never been humans in the actual world.[6] So, suppose there were no humans (or their investigative cognates) anywhere/anytime. Would it still be true there were x number of tyrannosaurs in existence fifty million years ago? Since human modes of inquiry (however individuated) would not be actualized under those conditions, those forms of inquiry are not allowed to be used in the relevant counterfactuals about questions concerning the remote past. But if this means there would be no fact of the matter about the number of tyrannosaurs, then I say so much the worse for the type/token distinction and the pragmatic account truth it was supposed to res-

cue. A natural rejoinder for the pragmatist might be to point out that, in the actual world, humans do exist, so therefore their methods must be counted as legitimate. However, I think this reply does not adequately preserve the common-sense intuitions about the applicability of bivalence Misak, Jardine, and Appiah all want to respect. Given the "core" modal intuitions canvassed earlier, the applicability of bivalence to the counterfactuals under consideration cannot be restricted to only those inquiry-modes which happen to be tokened in the actual world. Pragmatists who want to reject an implausibly stringent verificationism should also be loath to say that truth only depends on what contingent investigative modes are instantiated. Just consider the sensible possibility that there are forms of inquiry which never happen to arise within the actual world, but might have.

In *Wonderful Life*, Gould illustrates this last point with his typical aplomb while discussing how the trajectory of evolution is influenced by highly contingent features of the environment. Cambrian-era fossil remains gathered from the famous Burgess Shale of British Columbia consist of an astounding menagerie of freaks and monsters, unrivalled by today's standards. The Cambrian explosion saw a soaring, prolific, dizzying, and radical experimentation with basic body plans, only a handful of which are still recognizable in contemporary organisms. The wormlike creature, *Pikaia*, is one of the few chordates (the phylum to which human beings belong) found amongst the Cambrian fauna. Gould conjectures that creatures represented by our phylum likely faced dim prospects for survival, let alone chances for eventual ascendance over most other old-school forms. It would be an adaptationist's folly to assume that *Pikaia* was destined to win out in the end. Indeed it is a well-acknowledged feature of evolution that otherwise-fitter genotypes can fail to supplant an "inferior" rival. Such is the case where natural disaster wipes out the "superior" subpopulation.

This is germane to what counts as a legitimate form of experience for the pragmatist. As I have just said, it is inadvisable to expect that every biologically possible form of sensory experience has been or will be realized in the actual world. I think the following counterfactual speculation is just as reasonable as many other claims about the remote past: it is conceivable that one of the creatures made extinct shortly after the Cambrian era would have eventually led to the development of an entirely novel sensory mode if its species had survived. Seager's *Gymnarchus* is a real-world discovery of just this sort. Are we to suppose that every possible mode of sensory perception has been or will be instantiated in the actual world? It seems unlikely. Grant me at least one such innovation, let us call it "schmision," fails to take root in the actual world (anywhere/anytime). If it was instantiated in a sentient, schmision, like vision, could be used to help answer questions about the world some of which uniquely require "schmeeing." But it would be very odd to insist that the questions answer-

able by schmeeing, but not seeing (and the rest), must fail to satisfy bivalence just because schmision, but not vision (and the rest), was the loser in an evolutionary lottery. Likewise, realism about judgements which require vision would not automatically be put into jeopardy even if creatures with eyes had never developed. I assume those pragmatists interested in preserving common-sense modal intuitions would find it difficult to disagree. Pragmatists pride themselves on sticking close to concepts as they are received from the accepted practices of human life. It would therefore be bad to take truth about what is biologically possible to depend only on contingent features of the actual world. I think this does not bode well for the claim that only inquiry-types with actualized tokens are admissible in indicative counterfactual statements.

I shall now make a third and final run at showing why the type/token proposal fails to adequately reconcile pragmatism with bivalence. Truth as defined by the pragmatist cannot really capture our modal intuitions about which counterfactuals satisfy bivalence and forces us to take truth to be something which it is not. Pragmatic accounts of truth cannot really sustain common sense about bivalence even when amended by my type/token proposal. The example I have readied is far-fetched, but not impossible, and perhaps even describes the actual world.

Consider two communities of inquirers causally isolated from each other for all time. Suppose they even exist in separate universes, in a style somewhat similar to those "baby universes" which some cosmologists have recently proposed. Baby universes apparently may "bud off" from our own from time to time. Let us say our group lives in universe A while another group of sentients resides in another such world B. This situation is similar to a more ordinary case where two investigative communities are spatially isolated, as, say, on separate islands. However, the rough similarity belies a crucial difference important towards settling questions concerning bivalence. In the banal example involving the island, the pragmatist need not regard truth as relative to a particular cultural group. There is really only one community of inquirers, separated by physical barriers, certainly, but not in-principle isolated from the fruits of each others' investigations. But what if they were? Assume universes A and B exist in a complete and irrevocable casual isolation from each other. Each forms a closed system between which no casual interchange can occur, including various forms of communication. The actual world might already be somewhat like this in another way if the regions of space which lie beyond the distance light can traverse over the age of the universe are populated.

Now consider the assertion P1: "There is sentient life in A." On the pragmatic grounds articulated above, this expression is true and verifiable; there are modes of inquiry available which can confirm it. Likewise, P2: "There are sentients in B," is also true, if there are sentients living there as well.

Reflect now that it logically follows that P3 "There are sentients in A and B" must also be true if P1 and P2 are true. But notice that P3 is not verifiable. The best inhabitants of either world could come up with is that either P1 is true or P2 is true, but not both. If we know anything about truth at all—if our ordinary concept of truth means anything—it is that if two sentences are true the conjunction of those two sentences is also true; boolean operations on indicative expressions are truth-preserving. (Compare with epistemic states: If two people respectively hold two different beliefs, it obviously does not necessarily follow that someone believes the conjunction of those beliefs.)

I can imagine an interlocutor trying to stop me here, arguing we only know about the actual world and have no grounds for engaging in this sort of dubious metaphysical speculation. But such an objection misses the point and only further propels me towards the conclusion that pragmatism is really only interested in belief. We may have no (or weak) grounds for *believing* the above scenario is true, but it could nevertheless describe the world as it actually is, namely, as two causally partitioned realms.[7]

A natural pragmatic reply to the banal case of isolated island-communities would be to introduce an innocuous counterfactual of the sort Misak envisages. The conjunction of the claims that there are people on islands A and B satisfies bivalence because the counterfactual "If the islanders were to establish communicative links (using ordinary methods) they would easily verify their mutual existence" is true. There is no problem here. But in the case of two isolated *universes* there simply is no innocuous counterfactual a pragmatist can appeal to which will do the same truth-to-inquiry linking job. While the type/token distinction could be used to satisfy questions about "counting sentients," it cannot help settle questions concerning transworld *comparisons*, that is, questions about the conjunction of truths in worlds A and B. The reason is there are no token instances of an inquiry which compares information between two causally isolated universes. The point is more forcefully made if we consider a case where the inhabitants in A and B have methods of inquiry unique to their respective realms. Hence, suppose in world A, but only in world A, questions of the type "@" can be fruitfully pursued, whereas "#" inquiries are only feasible in B. Again, the conjunction of "@" and "#" inquiries must satisfy bivalence if "@" questions are verifiable in A and "#" questions are verifiable in B. But there is no way, even granted the type/token distinction, for the pragmatist interested in bivalence to make sense of the truth of the (conjunctive) answer to a "@ and #" question. The startling result is that the pragmatist now must say that a sentence expressing the conjunction of certain truths in A and B does not necessarily satisfy bivalence. This seems an implausible consequence. I am left with grave doubts about the hope that an epistemic account of truth can preserve our ordinary intuitions about bivalence. Notice that it would be inadvisable to

avoid this result by falling back into a form of counterfactual bravado. The needed counterfactual would have to allow for transworld travel between causally isolated universes. It likely must further allow for the exchange of information between sentients with radically alien methods of evidence-gathering. Given logically possible abilities as powerful as this, even the inverted spectrum hypothesis would be revived as a live issue, and on "verificationist" grounds! The alternative to bravado is no more satisfying. Truth cannot lead to contradictions.[8] I think this shows the pragmatic approach is not really an account of truth at all. It is an account of something else.

I suspect the problems raised here show the pragmatic account of truth only provides constraints on purely epistemic states like believing. The above example derives a natural explanation from the uncontroversial observation that statements which are represented in belief sometimes fall under so-called "referentially opaque" contexts. For example, some of us could believe P1 and others believe P2 without anyone jointly believing the conjunction of P1 and P2, even where P1 and P2 are both true. Likewise, it is sometimes said that finite rational agents do not necessarily believe all of the logically deducible implications of their beliefs. Nevertheless, if A is true and B is true, then A and B must obviously be true as well.

The pragmatic account of truth ends up having features very much unlike our ordinary conception of truth. I have argued that pragmatic truth ends up sharing properties with doxastic states that it ought not to. Pragmatic truth ends up looking far removed from our ordinary conception, and instead appears semantically opaque, unstable, and parochial. It would be disturbing to discover that our understanding of truth had been this misguided. It would also be strange that this revelation grew out of an account which purported to hold our ordinary practices in the highest esteem. This leaves us with the following choice: either the concept of truth is something radically different from what practically everybody takes it to be, that it just happens to have the features normally taken to be characteristic only of belief-like states, or pragmatic truth is not an account of truth at all, but of something else.

Here is the situation as it now stands. It is commonly thought that certain sentences satisfy the principle of bivalence even though we lack the means to either confirm or disconfirm them. I hoped to show that three constraints can be read off Misak's objections to Jardine and Appiah: that truth and actual inquiry cannot come apart, that counterfactuals used by the pragmatist interested in preserving bivalence should be forward-looking, and that they should be grounded within sufficiently general forms of inquiry. The vague counterfactual Misak cites is meant to follow these constraints, but leaves out what will count as "actual" methods of inquiry. Inquiry-types were then introduced which specified logically possible sets of investigative modes, including humans, gods, psychics, bats, and so forth.

Inquiry-tokens were then defined as systems which instantiate an inquiry type somewhere in the actual world. The instantiated inquiry-types specified which kinds of questions yield to bivalence, where the inquiry-tokens (particular inquirers) were used to pick out which of all logically possible kinds of inquiry could be considered relevant to questions of truth.

I then suggested that Misak's objections could only be accommodated by accepting the distinction between inquiry types and tokens. In this way, the vacuous verificationism of counterfactual bravado is avoided. The type/token distinction is eschewed at risk of construing inquiry non-generally and therefore making truth a parochial feature of particular fallible inquiries. This, too, would be to treat truth like belief: unstable and open to constant revision.

The promise of innocuous counterfactuals was to stave off an exaggerated and implausible anti-realism. Anti-realism was broadly conceived as involving a commitment to give up the principle of bivalence for discourses containing expressions which are verification-transcendent. However, much depends on the matter of how generously the pragmatist fashions the notions of observational method and decidability. I have deferred to Misak's authority on the nature of pragmatism where it transpired that certain internal demands need to be placed on the counterfactuals. Most importantly they must capture both actual methods and general methods. How else is this to be done other than by invoking a type/token distinction?

The attempt to provide succour to the pragmatist backfires. This brings forward an old objection to pragmatism, namely, that it conflates epistemological and ontological issues. An oddly similar difficulty crops up against "social constructivism" within the sociology of scientific knowledge (SSK). There facts are taken to be nothing more than socially agreed-upon conventions which are constantly up for revision and renegotiation. In one disturbing example, it is argued that since there were no agreements among scientists about the substance Thyrotropin Releasing Factor (TRH) prior to its synthesis in a laboratory in 1969, there were no facts about TRH prior to 1969.[9] Many philosophers have reacted strongly against claims of this sort which take truth as something unstable and as something which entails obvious self-refutations; to wit, is it *true* that all facts are socially constructed or is this also just another convention? In a recent article, Friedman (1998) worries that SSK's "inspired innovative work" might be overlooked for its "philosophical partisanship" and "tortuous metaphysics." His suggestion that SSK's "smoothly running gears of empirical social history" can avoid coming to a grinding halt by paying more attention to philosophy "historically and contextually" (1998, pp. 269-70) is perhaps otiose if we see SSK as erroneously treating truth merely as a socially negotiated set of beliefs. The confusion between truth and belief obscures the genuinely illuminating things social constructivists

can be re-interpreted as saying about the formation of scientific theories. Then, instead of deserving ridicule, constructivism becomes an important source of insight into how tacit and non-rational tendencies contribute to the social, cultural, and political contexts which affect the development of scientific *thought*, though not scientific *knowledge*. Maybe pragmatism ought not be consigned to ashes if it too has illuminating things to say about the relationships among experience, warranted assertion, and epistemology generally.[10]

Notes

1 There is a plethora of well-known cases where it has been claimed that bivalence may not hold. A sampling of these includes vague expressions, cases involving quantum indeterminacy, non-cognitivism regarding ethical claims or aesthetic claims, non-referring proper names, mathematical intuitionism, and statements about the remote past or future.

2 Misak (1990, p. 177) notes that Peirce also bites the bullet and denies bivalence even to those indicative expressions about the past which are verification here-and-now transcendent.

3 Newton-Smith criticizes Jardine's use of the idea of time-travel as a kind of counterfactual bravado. He argues that if we accept a relatively uncontroversial interpretation of time-travel, Jardine must allow for radically unconstrained inquirers. Newton-Smith (1989, p. 39) points out that many of those who hold time-travel to be possible have sought to respect the notion that "[i]t is not coherent to suppose that how the past now is will be different in the future." But if time-travel is used to resolve all questions about the past, we must suppose that the time-travellers have already observed everything everywhere. "[L]ike the God of Newton . . . these evidentially unlimited helpers will have already been observing everything everywhere everywhen." Taking the objection as decisive, he declares it "utter folly to seek to combine a belief in bivalence with an epistemic conception of truth" (1989, p. 39). He then asserts the pragmatist is compelled to introduce godlike inquirers in order to satisfy the applicability of truth values to sentences about the remote past. However, Newton-Smith arrives here after reviewing only the "utterly implausible" accounts of Ellis, Putnam, and Jardine. This paper can be thought of as an attempt to further exhaust the theoretical manœuvres available.

Oddly, Newton-Smith goes on to endorse what is essentially a concession to the pragmatic approach. What he calls the "generous proposal" amounts to saying that "a claim goes beyond warranted assertibility in principle if even a god who was only observationally omniscient could not decide it" (p. 44). Newton-Smith sees no reason why a scientific realist should not accept this proposal since he thinks "it allows truth to go well beyond what is currently warrantedly assertible without letting it get completely out of bounds" (p. 44). Nevertheless "pragmatic accounts of truth fail" (p. 45) although in the next

breath he asserts that the modest realist agrees that the generous proposal provides reasonable limits to the "domain of truth."

4 On Appiah's account, we regard our intellectual capacities as fixed. It is only our physical capacities which are extended without restraint in counterfactual situations. To see his proposal in action, consider again statements about the remote past, as in "There were 3,000 tyrannosaurs 80 million years ago." For Appiah, this sentence is verifiable because the counterfactual "If someone with my cognitive capacities (or yours) was around 80 million years ago, she could have confirmed or disconfirmed the statement in question" is true. Statements about observations over a geologic time-scale, for instance, are verifiable on the basis of abstracting away from the limitations of life span, and "that is guaranteed simply by the logical possibility of there having been a long-lived person accessible to us now" (Appiah 1986, p. 83). It is not hard to see that Appiah's suggestion is vulnerable to the same general problems raised by Misak against Jardine's bravado. The account relies too heavily on the deliverances of particular, fallible, inquirers. Misak also questions Appiah's distinction as unprincipled. Indeed, cognitive traits seem to be closely associated with our physical limitations. Consider concept formation, is this activity purely cognitive? Many recent authors have argued it is not (see Seager 1999, chap. 1, for details).

5 In fairness to Jardine's account, I should mention that it is not certain he intends counterfactual bravado to permit literally *any* logically possible form of inquiry. More often he seems to have the sort of cognitive/physical capacities distinction in mind made explicitly by Appiah. For instance, Jardine (1986, p. 30) mentions only "escape from the spatio-temporal limitations" and considers "those [idealized] investigations being as like to those carried out by physically possible inquirers under physically possible circumstances."

6 I thank an anonymous reader of an earlier version of this paper for raising this important worry.

7 William Seager reminds me that we arguably do have some grounds. Cosmologists already inform us that there are likely to be parts of the universe forever inaccessible to us. There are also some tentative reasons to think such regions contain sentients. The only known instance of observed space does contain some intelligent life, namely, us.

8 Certainly some revision of classical logic is in order if the pragmatist is to allow for the occasional rejection of bivalence. If bivalence fails, then the pragmatist must say a proposition can be both true and false, or that there are more than two truth values assignable to a proposition, or that we need a nonclassical interpretation of the classical inference rules, or of certain connectives, such as negation. This has prompted those (notably Quine) who take our intuitions about logic as more central than our intuitions about semantics, counterfactuals, and verification to regard these sorts of projects with contempt.

9 See Sismondo's (1993) fine discussion of Latour and Woolgar.

10 I owe thanks to Glen Hoffman, Brian Garrett, Jon Miller, William Seager, Glenn Tiller, and the anonymous referees for this journal for providing helpful discussion and suggestions. I am especially indebted to Cheryl Misak for her advice and comments on several early drafts.

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