

ISSA Proceedings 2002 - On The Use And Misuse Of Analyticity In Arguments



1. *Argument-by-Analyticity*

I go to a concert and hear, among the other pieces, a particularly avant garde piece where the notes or rather the sounds it is made up of seem to me and to all the rest of the audience to succeed one another at random. Being a bit of a conservative at the end of the concert I remark: "That thing was not music". I intend that as a statement of fact, even if to many it looks like a statement of value. None such can be made, unless the piece in question is first admitted to the category "music". A progressivist friend of mine, with a tendency to radicalism, disputes my aphorism - essentially my classification - by retorting: "Why not? Music doesn't *have* to be what it always has been. It can still be music, even if its component sounds come at random. Art is originality and original things cannot be copies of past ways".

Though both my friend and I are laymen, and lack any pertinent philosophical information, we essentially stand on opposite sides of a Wittgensteinian "family resemblance" dichotomy. To him the piece in question shares a family resemblance with music, which is thus treated as an open-ended concept, because it is possessed of sound, which standard is deemed sufficient. To me, on the contrary, it falls short of the *definition* of Music, in that it lacks the specific *unity* of sound characteristic of what we normally call music. And then music is no longer an open-ended concept, nor is any other, for that matter. The basis of my objection, though in being a layman I may lack the proper philosophical means to express it, rests upon the following, restrictive rule of identification:

[A] Only Coherent Sound Can Be Music.

This is, paradigmatically, a rule of usage. But it is, fundamentally, an *analytic* rule. Being a layman I know nothing of analytic truths, synthetic ones, borderline cases between them or what have you. But this much I do know: Not *anything* can qualify as music. Were I a Popperian, for example, I could qualify this gut feeling of mine with an even more refined version:

[A1] Nothing Can Be Music, Unless *Dissonance* Can Occur In It.

This is by strict analogy with “nothing can be science unless falsehood can occur in it” though of course, in being a layman, I know nothing of all this.

What I have done here without knowing it, is to have provided a typical sample of what may be called “Argument-by-Analyticity”. Using “only coherent sound can be music”, or its Popperian version, as a major premise, and my own conviction that “that piece contained no coherent sound” as the minor, I validly conclude that “that piece was not music”. Properly speaking, it is not even a piece. Of course, if [A] or [A1] are analytic, they are irrevocable, which is in proper harmony with my own, above noted, conservatism. Nor is there such a thing as a *nonconservative* type of argument, to begin with. None that we would call *valid*, at any rate.

In being a layman as much as I am a philosopher, or perhaps more, I have never found anything objectionable to this type of reasoning. In fact I find it perfectly natural, common to all men and impossible to do without. But philosophical sophistication, of which I sometimes think that there is just too much going around, is known to have thought otherwise. Quine, for starters, says that there are no analytic truths at all, hence, he concludes, “there is no statement immune to revision”. (Quine, 1961, p.43.) Putnam modifies this by admitting that “there are analytic truths” but such as are too trivial to make a difference (Putnam, 1975, p.36.), stressing Quine’s contribution, for “the obligation ‘not to violate the rules of language’ is a pernicious one and Quine is profoundly right in rejecting it”. (Putnam, 1975, p.38.)

Philosophers are sometimes too clever for their own good, outsmarting themselves long before they do others. Quine, for instance, claims that there is no statement immune to revision. *His* is, if none other is, but perhaps we can make room for one exception. Quine, again, too smartly reasons as follows:

“There are no analytic truths, *hence* there is no statement immune to revision.”

Which is itself but a typical sample of Argument-by-Analyticity if not indeed a straightforward analytical statement, of the very sort whose existence he has denied. Given the appropriate translation, the first statement just about *means* the second for, if not, then one can assert the first and still deny the second, whereupon some statements would turn up immune to revision, independently of whether or not there are analytic truths. And then it *would* be a bit of task, not to retrodictively identify the immune statements with the analytic ones. How that fact spoils Quine’s calculations, is plain to all, except perhaps Quine himself. It seems that Reasoning-by-Analyticity is so fundamental and ineradicable a practice, that it is extensively employed even by its worst of enemies.

This is a sound indication of its indispensability. So I suppose that digging deeper into its ramifications would not be an unworthy occupation. But I will leave that to argumentation theorists, who surely can do it better. I myself am not so much interested in the intricacies of its structure, or even the complications involved in it, which may yet lay ahead, as I am in refuting its enemies and the soundness of their epistemological claims against its more or less generic conception. So I will conclude my opening section by specifying who these enemies are, starting with my radical friend.

Not knowing how he will speak next, he makes room for noncoherent sound to be music, though were he only to *still* speak in the way he always has done, as I am resolved to do, he would not have allowed the problem to even arise. And then there would be no problem of how to speak in the first place. In reacting thus, my radical friend becomes a Meaning Variance theorist and, perhaps, even an incommensurabilist. I myself, on the other hand, am not all that uncertain how I will speak next. I will as I always have done. I will not call incoherent sound, or much less *silence***[i]**, music, nor will I empty frames a painting**[ii]**. For reasons known only to him, he bravely, though somewhat recklessly, chooses to sail the great ocean of language adrift. I choose to sail it with an anchor.

2. The Dialectics of Incommensurability

Any Meaning Variance theory, especially in its acute version of Incommensurability, must inevitably come to grips with Analyticity. For the two doctrines are nothing short of incompatible. To make matters as clear as possible, I add that Analyticity is not really a doctrine at all, though faith in it may surely be one. It is itself a concept, hence anything but a doctrine. This is being said in order that we get our priorities right.

If I hold that “matter is extended” is analytic, and you deny this, proposing that there can be matter without extension, they just don’t come any more incommensurable than that. Hence, to defy an analytic truth is to say something incommensurable about one or more of its propositional terms. Analyticity and Incommensurability are contrary postulates. This is no news to any one. What may be news is that, antinomically or, as Hegellians would say, “dialectically”, there can be no incommensurability, unless there *is* analyticity (of some sort) in the first place.

Indeed, what else is Incommensurability, except the denial of an existing *synonymy*, and the establishment of a new one in its place, where the terms

hitherto considered as synonymous are now declared *nonsynonymous* instead? For without some form of intimate connection linguistically established between subject S and predicate P, which is what makes "S is P" an analytic judgement, there would simply be nothing revolutionary about "S and -P". It would be routine, not revolution. If music did not *mean* "coherent sound", there'd be nothing revolutionary, hence nothing incommensurable, in calling non coherent sound music. You cannot have the one without the other. Clearly, therefore, either Meaning Variance, and especially Incommensurability, are inconsistently conceived doctrines, relying on the very thing they subsequently undermine, or else they *require* some form of Analyticity - though not another. As it turns out, it is precisely the latter, which is the case.

In accordance, it is a clearly warranted and, indeed, an illuminating way of describing Kuhnian Paradigms, by noting that in their frame theoretical terms authentically synonymous in a context such as Newtonian Mechanics have become nonsynonymous or even antithetic in a context such as Relativistic Mechanics, whence of course, their in-commensurability. Consider, for instance the following passage:

For Kant, as also for Descartes and Newton, objects cannot exist without space. For Einstein, *space* cannot exist without objects. (Jeans, 1933, p.96-7.)

Observe the reversed synonymies: For Kant, Descartes and Newton "object" meant "that which needs space". For Einstein "space" means "that which needs objects". The syno-nymies can be unpacked even further. For Kant, Descartes or Newton "to be" meant "to be somewhere". For Einstein, "to be" no longer means "(having) to be somewhere", at least if Jeans is to be believed, though how can something be, and still be nowhere, is a bit of a strain to fathom, as are, I imagine, all other cases of incommensurability.

What Jeans is giving us here, essentially, are antithetic semantic rules, ascribing to the terms "space", "object" and "be" (exist) senses incommensurable with their Newtonian and/or Kantian counterparts. The classical-Newtonian semantic rule constrains us to regard the objecthood of an object as directly dependent on having first satisfied the requirements of Space, and arranges synonymies on that principle. The relativistic-nonclassical semantic rule absolves us precisely from this constraint, rearranging the principle itself and the synonymies based upon it, by simply rejecting the synonymy. But in order that a synonymy may be rejected,

a synonymy there must be. In consequence, the primary, if not indeed the sole reason for the emerging incommensurability between Newtonian and Relativistic concepts stems precisely from having replaced one synonymy by another. When Jeans claims that objects are logically prior to Space, he is not perchance referring to a particular physical discovery, say the discovery of matter *prior* to Space, for no physical discovery of anything is possible, let alone of this one, *without* Space. He is pitting forth a *new Grammar*. A grammar incommensurable with the one presently available in the speech market, because the concepts involved are now assuming a semantic role precluded by their namesake predecessors.

On this reconstruction of the doctrine, it is *by means* of radically novel synonymies, i.e. novel analytic propositions, though synonymies hitherto unadopted or consciously avoided, that the novel scientific theory is rendered incommensurable to the old. This conclusion can be stated even more forcefully. *Unless* there are analytical propositions, there can be no incommensurability in the first place. For if there were no such things as “truths of meaning” of any kind, but only truths of brute fact, how could meanings change, if at all? The factual truth (or, rather, falsity) that “all swans are white” can implement no meaning change, when black swans are discovered, for, if this proposition were thought true by virtue of facts, it will be facts which will be false, when the proposition is refuted, and so facts which will suffer the consequences. And therefore not the meanings. Ergo, if there were only factual truths to reckon with and none other than those, there would be no meaning changes to begin with. For the refutation of a factual truth not only is a triviality in itself, and hence no prelude to incommensurability. *A fortiori*, is ex hypothesi incapable of bringing about a change of meanings, for its refutation is confined to considerations *other* than its meaning. Hence, Meaning Variance presupposes truths of meaning.

But if Meaning Variance presupposes truths of meaning and Meaning Variance, in a different connection, now comes to dispute such truths of meaning, either Meaning Variance is an inconsistent theory, or else “truths of meaning”, just, *are not necessary truths*. I can hardly overemphasize the extent of my own agreement with the incommensurabilists on this point, provided that it is fully understood, what it is precisely that I am agreeing with. For I do concede that “truths of meaning”, just, are not *eo ipso* necessary truths. But I am far from conceding the converse, namely, that necessary truths are not *eo ipso* truths of meaning.

For it may be true, indeed it may be inevitable, that Meaning Variance and

Incommensurability are impossible without Analyticity, just as much as and just as how as Nonsense is impossible without Sense. The difference is, however, *what sort of Analyticity this is*. Well, in a word, it is of the expendable kind. But that is not the only kind there is. If, that is, all we are to understand under the term “analytic” is the arbitrary, perhaps even the whimsical decision of two or more people to call a diary a “log”, because, say, the former word did not rhyme well with “dog” in the poem while the latter did, then there is really no restriction raised, no barrier erected and no epistemological commitment involved, except, perhaps, that of having to write a bigger dictionary. Apart from being a blessing to poets, such synonymy is of little significance to epistemology.

If, in other words, and (*only* if) “object” is a mere convention, *conventionally* tied to “being somewhere”, hence if (and only if) the sentence “object is something which is somewhere” is not an objective truth but only a long living verbal habit, reflecting our choice to speak in one way rather than another, then (and only then) can it be abandoned in the face of novel theoretical pressures. And so be radically (incommensurably) revised, if the need should ever arise. This is the expendable kind of Analyticity. What cannot be revised is the objectivist conception of Analyticity, which has little to do with how we may or may not decide to speak: *Necessarily* objects presuppose space and hence necessarily objects have to be somewhere, to be objects.

This is the nonconventional, nonrevisable, ontological and absolute conception of Analyticity, whose opposite is literally impossible. Let me explain how I conceive of it, with the example already at hand, namely, “matter is extended”. This proposition is necessary, because it turns up true, *even if supposed false*. Suppose the proposition is false. Then there will be matter which lacks extension. Yet, since it is only by being extended, that something can take up some space, and since it is only by taking up some space that something may be *encountered* in space, nonextended matter cannot be encountered and therefore cannot be located anywhere in space. To put it briefly, what lacks in extension, lacks in *inspection*. Nonextended matter is not the sort of thing we can ever *discover*. So the counter instance to “matter is extended” has not been produced and, for that matter, it is in principle impossible to produce. Hence the proposition has no conceivable counter instance to contest it. It is necessary. Then the semantic characterization, “analytic”, is not all that important and it is but derivative on the statement’s primitive necessity.

It is this second conception of Analyticity which is incompatible with and rules out

all hopes of Meaning Variance, Context-Dependence, Incommensurability, Hermeneutics and all the rest of the contemporary mythology that goes with it, the main concern of all of which is not to serve the interests of Epistemology but only to safeguard *the equal rights of different cultures*, operating with different concepts, which the notion of universal necessity, and therefore universal uniformity, is presumably putting at stake, blocking the way, as it does, to the establishment of the great democracy of ignorance. This is the Analyticity on the basis of which Jeans, quite definitely, and Einstein, very probably, rather than revising the logic of certain concepts, as they think, are quite simply talking nonsense, when they seriously declare that matter can exist before Space. It is this sort of Analyticity which makes fundamental conceptual change impossible. And this Analyticity which really cuts the ice.

3. *Disarming the Analytical Weapon*

Here then is Putnam's version of the story:

In a deeper sense I think that Quine is right; far more than his critics. I think that there is an analytic-synthetic distinction, but a rather trivial one. (...) Ignore the distinction and you will not be wrong in connection with any philosophical issues not having to do with. Attempt to use it as a *weapon* in a philosophical discussion and you will be consistently wrong. (Putnam, 1975, p.36.)

On the basis of this understanding of Analyticity Putnam confidently proceeds to rebut an anonymous philosopher - one he keeps anonymous in any case - who was bold enough and reckless enough to maintain that, in the words of Putnam himself:

The hypothesis that the earth came into existence five minutes ago, complete with memory traces, causal remains, etc., is a *logically* absurd hypothesis. The argument was that the whole use of *time* words presupposes the existence of the past.

(Putnam, 1975, p.37.)

Having thus prepared the ground for the final blow, Putnam then proceeds to its delivery:

It is not, I think, happy to maintain that the existence of the past is analytic, if one's *paradigm* of Analyticity is the "all bachelors are unmarried" kind of statement. 'Bachelor is synonymous with unmarried man' though certainly analytic, still cuts no philosophical ice, bakes no philosophical bread and washes

no philosophical windows. (Putnam, 1975, p.37.)

Ironically, it is Putnam who commits this very error which he holds his opponent responsible for. When that unnamed philosopher rejected the hypothesis that earth came into existence five minutes ago, on the basis of how we have hitherto come to talk about the past, “past” here meaning the actual history of the world, he made a statement about the world. He did not make a statement about how we use words. He did not make a statement about the *grammar* of timewords and much less did he make a statement about unmarried men. That the basis of his statement was *launched* from considerations about how we speak about the world, and from considerations as to *why* we speak of it in the way we do rather than in another, can hardly be denied. But he did all that for the sole purpose of stressing the commitment and even the irreversibility that goes together with having spoken about the world in the ways we have, rather than in others.

This is the specific philosophical method of deducing truths about the world by elucidating how we have come to speak about it. The idea being that, the world being such and such, we had *no other option but* to speak about it the way we have. Items of this method we can retrace in the entire philosophical domain covered by the free will problem. We have no material evidence that, when facing a dilemma, we are free to do otherwise, than what we will in fact do. We deduce this putative power of ours, a power to act in mutually exclusive ways within *a unique* set of conditions, by sheer logical analysis of the deep level structure of words such as “responsibility”, “choice”, “blame” or “guilt”, and on their encouragement alone we take a huge leap beyond the confines of language and plummet all the way into naked ontology. The line of reasoning which proceeds like “I am punished, therefore I am accountable; I am accountable, therefore I am responsible; I am responsible, therefore I’m free; I am free, therefore I could have done otherwise”, although uniquely relying on an interlinked network of logical connections between *meanings*, does in no way result to an assertion about meanings at all. But to an assertion about the nature of *reality*. A reality, where a man could have done differently in a given set of circumstances, than he did in fact do, in other words, to an assertion about *a breach in the causal chain of events*. Arrived at through conceptual analysis alone and based upon the sheer power of words.

When judge and jury pronounce someone guilty and demand the death penalty, (logically) deducing this man’s guilt from the postulated fact that, no matter what

the circumstances, still he did not have to do the crime, but in the end much rather chose to, they are not particularly interested in the semantics of the situation, as I now am. They refer to the *states themselves*, of which I have given the semantic account, and which, as *states*, namely, as entities subsisting “out there” in objective independence of our linguistic conventions, render this man worthy of punishment. The end result of this line of reasoning, *analytical* reasoning, mind you, is that of a man being put to death. Is this the Analyticity which, according to Putnam, cuts no philosophical ice, bakes no philosophical bread and washes no philosophical windows? Is this the Analyticity of “bachelors are unmarried men”?

Modern philosophers are sometimes as unimaginative a lot, as modern physicists are often an unduly imaginative one. All they see in Analyticity, being too quick to sneer at those who know enough to see more, are bachelors who never took a wife and spinsters who never took a husband. *Other* possibilities have not crossed their minds any more than that of their house keepers. Thus in Kripke we read, once more

The common examples of analytic statements nowadays are like “bachelors are unmarried”. At any rate, let’s just make it a matter of stipulation that an analytic statement is, in some sense, true by virtue of its meaning and true in all possible worlds by virtue of its meaning. Then something which is analytically true will be both necessary and *a priori*. That’s sort of *stipulative*. (Kripke, 1980, p.39.)

But why be so stingy? Let’s also make it “a matter of *stipulation*” that you cannot take a hundred dollars from a purse which contains only fifty. A matter of stipulation that if I’m stronger than you are (and faster than you are and smarter than you are), and we fight alone and unarmed, I will beat you in the end, no matter what. Do not worry, that you will really be beaten to the ground. “It’s all sort of stipulative”.

This then is the understanding of Analyticity which constitutes one of the major and most pervasive of fallacies of contemporary philosophy indeed, I am tempted to suppose, of contemporary thought. It is this understanding of it which is just the right sort of foundation generously offered to and making possible all the epistemological curiosities of this century, such as context-dependence, Kuhnian paradigms, Feyerabendian incommensurability and cultural relativism. This is the Analyticity which *cuts no ice* and the one chosen because it cuts no ice.

As so many other fallacies in philosophical reasoning, this fallacy too draws its

roots from a fallacious reversal. The reversal being that, since all necessary truths are expressed in analytic sentences, all analytic sentences should in turn express necessary truths. "That's sort of stipulative". Then, as the former truth was identified with the latter falsehood, philosophers, in finding no necessity of any kind in whimsical "stipulations", cutting no philosophical ice, baking no philosophical bread or washing no philosophical windows, but merely reflecting the private determination of a particular linguistic group - or "form of life"- to observe one *optional* linguistic rule rather than another, declared Analyticity nonexistent or idle. This is Analyticity of the expendable kind. And, in getting rid of the parasite, some are quick to think they got rid of the host.

4. Necessity by Analyticity and Analyticity by Necessity

Before taking a look at how real people think, let us take a last look on how philosophers do. Roughly, this is what we are being told so far:

Analytic truths reflect only the purely semantic structure of language; they contain *only* dictionary information. Since the dictionary is written independently of the encyclopaedia, sense is determined *independently* of the empirical history of a term. (Ramberg, 1989, p.29**[iii]**)

One can clearly see how Analyticity is useless as a weapon on this understanding of it. Due to the dictionary/encyclopaedia dichotomy, Analyticity is severed from the world of real events (as philosophers themselves also are) and can cut no philosophical ice of any kind. But I myself have seen it cut plenty of ice in automobile magazines, where I can read that David Coulthard finished ahead of Michael Schumacher in the formula one race held in Monte Carlo on the 15th of June 2001, all of which information fully qualifies for encyclopaedia entries, *because he drove faster* in the last five laps. Which latter, however, is not a matter of encyclopaedia, which could have gone the other way, but a matter of necessity, which couldn't. But then, only philosophers will conclude that encyclopaedic entries and dictionary ones are mutually exclusive. Philosophers struggle to keep the two apart, as a matter of professional duty, but actual people reason differently.

When judge and jury send a man to the death chamber, having satisfied themselves that he committed the crime in full awareness and in full possession of his sanity, they do not ground this decision of theirs on the point that we have *stipulated* "being punishable" to mean "being responsible" and "being responsible" to mean "being free". This is what these expressions mean, no

question about that, but that is not what we mean, when we employ them thus. What judge and jury are doing in such cases is not to fix synonymies intended for the dictionary. What they do is to *trust* these synonymies and feel confident to pass sentence on their basis. A sentence which will result, on the basis of strict logical, though possibly not moral, justification to the death of a man. Is all this just stipulative?

Why then are these synonymies trusted? Why do we stake our lives on them and feel confident we are doing the right thing, at least logically, even if not morally? We do because these are synonymies which are *imposed on us* by the world. And not “unmarried bachelor” synonymies, which we impose on the world. And which latter we can well do without, with nothing amiss. These are synonymies which we have no choice but to adopt or ignore at the price of absurdity. Kripke says that what is analytically true will be necessary *a priori* as a matter of stipulation. And Putnam, in seeing nothing really necessary *a priori* in all this, not perchance because he disagrees with Kripke but, on the contrary, because he fully shares his opinion, declares Analyticity to be vacuous and redundant. He is perfectly right in doing this, as far as necessities based on synonymies go. Yet, apparently, what seems to have never occurred to any of these thinkers, is that besides necessity which is the result of prior synonymy, *there is also synonymy which is the result of prior necessity*. Whence, evidently, the basis of our trust.

Or that there are optional synonymies and compulsory ones. That “being punishable” is synonymous with “being responsible” and the latter synonymous with “being free” is not something of our own making. Unmarried bachelors are. The former expressions *have* to be synonymous, or else we will reason incoherently *and* still send a man to his death. One cannot be punishable, if he is not responsible, and one cannot be responsible, unless he is free to act otherwise, as a matter of oneway, strict, objective necessity.

This necessity we clearly perceive and suitably preserve by arranging our synonymies accordingly. We could not have done it differently, if we tried.

But we *could* have done “unmarried bachelors” differently with little effort and, come to think of it, perhaps we should have, since “bachelor” also means “bachelor of science” and thus creates unnecessary ambiguity. In merely speaking thus I have produced an *objection* to this synonymy. And a potential proposal to undo it. But that which is really necessary and *a priori* is not the sort of thing you can coherently object to or propose to undo. And, so far as I can see,

it is nothing short of scandalous to treat “all unmarried men are bachelors” as something *a priori* true. “Unmarried bachelors” is a type of agreement, a verbal one no doubt, but an agreement none the less. And to all agreements there is a *time*, when still nothing was agreed upon, hence a time, when “all unmarried men are bachelors” was not even true. Let alone analytic and a priori. But to what is a priori true, there was never a time, when it was not true. This is why we call it “a priori”, to begin with.

Having begun with a fallacious reversal, we could only end up with a fallacious *identity*. Mistaking “all necessary truths cannot but result to truths of meaning” for “all truths of meaning cannot but result to necessary truths”, we have equated the two and then, via their equation, we came to conclude that both are equally *vulnerable*. Or equally impotent. This is why we have witnessed in the past decades so many philosophers unproblematically disputing whether there is such a thing as a necessary truth at all. What they meant, of course, was that the paradigm of analytic necessity, “all bachelors are un-married”, fails to qualify as a necessary truth and the rest of them are simply reducible to it. I then invite them to try and reduce to it statements such as the following:

1. A Faster Vehicle Will Overtake A Slower One.
2. A Larger Object Will Not Fit Into A Smaller One.

But those, they just don't want to know about. They much prefer to take their case and try their strength with weaklings, such as unmarried bachelors or any other “dictionary entry” sufficiently whimsical and arbitrary to give them the easy victory they desire. But when it comes to statements of the types of [1] and [2] above, victory will hardly be a walk over any more. For these statements are necessary *before* they turn up ‘analytic’, rather than analytic before they turn up ‘necessary’. In other words, there is ‘necessity’ resulting from prior verbal *agreement* and there is verbal agreement resulting from prior necessity. And this is how they cut the ice and how they can be weapons in philosophical debates, when unmarried bachelors cannot.

Before proceeding, I will note a kind of difference between them, along side their similarities, intimately relating to the problem I'm tackling. [1] and [2] are both necessary, in the sense that their opposites are comparably impossible. But, curiously, we can witness the truth of [1] in ways we cannot comparably *witness* the truth of [2], by actually *observing* a faster vehicle overtaking a slower one with the testimony of our own eyes, something which the logical positivists had

declared to be impossible for so-called 'necessary truths' in their book. [1] states a special kind of necessary truth, of which we can have the direct experience. Of [2] we can have no direct experience, for all we perceive is the impossibility, and so the *absence* of a fitting. And it is a bit of a strain to see the absence of anything though, to be sure, we still see what has to be seen with our mind's eye.

Meaning Variance theorists and incommensurabilists, who regard themselves as *the* enemy of logical positivism, simply have no idea how much they really owe to that outdated doctrine, which, by divorcing necessity from the bond of words to the world and wedding it to the bond of words with other *words*, has made their own theory even barely tolerable. The mechanism of this effect I have already shown in Section 2 of my paper. For only if Analyticity is *conventional*, is it also expendable. Only if it is conventional, will it fail to cut the ice and be a weapon in philosophical reasonings, in ways preparing the way for impending conceptual change. It was the prejudice that all analytic truths are "reports on linguistic usage" or "reports on how we relate verbal conventions" (Ayer, 1987, p.106), which got everything started and made it all possible, earning the name of "conventionalists" to the empiricists who invented it. It was that original sin, the sin of regarding necessary truth and fact-in-the-world as mutually exclusive, which turned necessity into a concept paradigmatically and notoriously incapable of relating to fact and so one useless to Philosophy.

In the face of propositions matching the properties of [1] and, to a considerable extent those of [2] no less, that conventionalist slogan receives the discredit it deserves. [1] is a report on linguistic usage, to be sure. What is never mentioned, is why is this particular use adopted rather than the contrary and why has it *prevailed*. It has prevailed, for none other could have been adopted and taken its place. In other words, because it is necessary and consequently cannot be spoken of otherwise, save analytically. But whether or not it can also state a fact, just take a walk in town and see with your own eyes faster cars overtaking slower ones hundreds of times a day. Philosophers of the conventionalist persuasion do not, so one must conclude there is something wrong with their eyesight.

5. *How the Ice Is Cut*

I have shown that there are necessary truths which, in addition, can also state a fact, which may have been a mystery to others but has never been one to me. Truths [1] and [2] are such truths, stating facts in ways that no unmarried bachelors ever could. So if unmarried bachelors fail to cut the ice, truths similar

to [1] and [2] still could. Time, then, to show how, by cutting the hardest ice there is, i.e. the ice of contemporary science itself. My choice is the Universe Expansion Theory, also known as “the Big Bang”, an exceptionally bad scientific theory - I decline to call it *physical* - which needs all the cutting it can get. Here is how it goes in a double passage, including sceptic and believer alike:

[universe expansion] is very different from the kind of expansion one would get if the universe originated in an explosion into *pre-existing* empty space. This is because the big bang is an explosion *of* space and time, not an explosion in space

and time. A recent paper by Harrison explains: “From a purist point of view one cannot help but deplore the expression ‘big bang’, loaded with inappropriate connotations, conjuring up a false picture of a universe expanding in space. In modern cosmology, the universe does not expand in space. It *consists* of expanding space. (van Flandern, 1994, p.27, Harrison, 1993, pp.28-31)

The combined picture of the theory drawn by these two descriptions is that the universe did not originate by an explosion *in* space but by one *of* space. In essence, therefore, it is asserted that the “Big Bang” *created* space. This contention is hardly different than that of Jeans’, that according to modern physics, space depends upon material objects, rather than the converse, hence that space comes *second* to objects in the order of things. One may at least concede, like Polonius, that there is method in the madness.

I will begin my own criticism, one systematically relying upon authentic Analyticity, by the following analytic truth first:

a. An experimental result is something (by definition) emerging at the *end* of the experiment.

Now this proposition has all the requisite triviality which Putnam has charged Analyticity with. And yet in spite of all this, it suffices to show that the Big Bang hypothesis is *in principle* a nonverifiable hypothesis for, by definition, the Big Bang can only *precede* all other events and follow *upon* none and hence must lie beyond all experimental support actual or possible, given that, by contrast, experimental results can only follow upon the performing of an experiment and never precede it. Other, related versions of this point could obviously be: [a’] All experiments are performed in space and [a’'] All experiments are performed in *time*. The conclusion would still be the same. An event which *creates* space and time is by definition impossible to reproduce in experiments, which latter are

always performed *in* space and time. In consequence, the putative theoretical pressures put upon us by an alleged scientific discovery, inevitably resulting to incommensurability, are no greater in this case than those formerly put upon us to call noncoherent sound music. The pressures are our own *making*, and otherwise purely imaginary. It is up to us to accept them and, in being imaginary[iv], I submit we should ignore them.

If so, then the following two analytic truths become decisive:

b. An explosion, or “Bang”, is something which (necessarily) occurs at a place.

c. An explosion, or “Bang”, is something which (necessarily) occurs *at* a time.

Conclusion Therefore, there can be no explosion which creates space and time.

Group [a] of analytic truths, the first of which is clearly trivial in ways that the other two of its kind are not, suffice to strip bare any pretenses to authentic, scientific truth, that could be conferred upon the universe expansion theory. The theory is metaphysical to its core, no less than its biblical alternative. But there are good metaphysics and bad ones and the theory in question falls to the latter category. For on the basis of analytical truths [b] and [c], the theory turns up logically incoherent. No explosion can create space for it must needs occur *at* a place. And no explosion can create time for it must needs occur *at* a time. This construe, I would say, is demanded by the very essence of what it is to count as an *event*, not just in the vocabulary of ordinary men but, a fortiori, in the vocabulary hitherto enforced and implemented by Physics itself. An event, an event treated by Physics all the more so, is an implicitly spatiotemporal entity. Explosions are events, therefore explosions are *a priori* subject to spatiotemporal rules and determinations. Hence the idea of an explosion *creating* spacetime is a sheer logical absurdity, a logical absurdity, I would add, signed and sealed by Physics.

So Analyticity has not done so badly, considering. In the case considered, in particular, it has washed the windows, several of them, and, I submit, those were windows that badly needed washing. Nor was there any other way of washing them, but by *means* of Analyticity, namely, by means of laying bare and elucidating the crucial meanings involved and the constraints they impose. Thanks be to Analyticity, we can at least see more clearly now, what exactly we are after, when we try and construct scientific theories such as the Big Bang.

Still, so far as I can see, the head on clash alone between the currently accepted scientific cosmology, on the one hand, and a cluster of indispensable, that is to say, of objective analytic truths, on the other, is all that we need. Analyticity does not have to *win* this battle to prove itself capable of cutting the ice and washing

the windows. Analyticity need only be an *opponent*, not a winner, to count as a weapon. In other words, make trouble. Battles are fought and won, others fought and lost. But this is not to say that battles lost were fought with *no weapons*, and one need only look at king Pyrrhus's victory and count the casualties, to realize this. If that's not cutting the ice, nothing ever is.

NOTES

- [i] This is the case of John Cage's "4 min. and 33 secs.". (Lynton, 1980, p.331.)
- [ii] This is the case of John Baldessari's 'painting', containing only a written inscription on "art". (Lynton, 1980, p.332.)
- [iii] The author does not necessarily share this opinion. But it is still a description of the opinion of others.
- [iv] "Scientific paradigm" theorists are the last people on this earth who can object to this claim. After all it is their very own understanding of a Paradigm, as a theoretical construct at work, which makes us see things.

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