

A Priori Entailment is not Worth the Costs

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Is metaphysics essentially an investigation from the armchair? An exercise characteristic of armchair philosophy is analysis. The philosopher takes a term '*F*' she is interested in and enquires into the necessary and sufficient conditions for something being an *F*. In a series of articles Frank Jackson argues that such analysis does play an essential role in metaphysics.

This essay evaluates his argument. In the first section, I reconstruct Jackson's inference from what constitutes serious metaphysics to the essential role of analysis. Section 2 presents obvious objections to this argument which cause Jackson to elaborate a two-dimensional descriptivism of natural kind terms.

This, however, leads straight into a dilemma, or so I argue (3). The final section bolsters my refusal of Jackson's argument by identifying a valid and less controversial alternative.

1. Why serious metaphysics would be committed to analysis

Jackson starts from the assumption that metaphysical theorising is only serious if it attempts to explain everything in a restricted basic language [Jackson, 1994, 25]. Therefore, a serious metaphysical theory *T* would be equivalent to a global supervenience claim

superT: Any world whose description in terms of *T* is identical to *T*'s description of the actual world is a duplicate simpliciter of the actual world.

superT holds if and only if at any world where *T* is true, any true sentence not in *T*'s basic language is also true. Assuming, for example, that *T* contains

1. *NaCl* contains 1.8% iodine ,

superT implies that

2. Salt contains 1.8% iodine.

is true at all worlds where *T* is true. In other words, *superT* presupposes that *T* entails (2). Hence, *T*, being equivalent to *superT*, has to account for the fact described by (2) to become one of its theorems (26). In Jackson's terms, 'entry by entailment' is the only solution for this 'placement problem'.

The entailment at issue, however, must transcend metaphysical entailment according to which *p* entails *q* iff at any world where *p* is true, *q* is true. This cannot vindicate *T* because *superT* already implies that at any world where (1) is true, (2) is also true. Therefore, citing metaphysical entailment in support of *T* would beg the question. Additionally, metaphysical entailment would fail to elucidate how one arrives from (1) at (2). To cross this explanatory gap, the metaphysicist better add some reasoning. Surely, assuming

3. Salt is *NaCl*.

the step from (1) to (2) is a plain Leibniz substitution. Nonetheless, Jackson denies that this straightforward deduction solves placement problems.

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Deviating from Kripke's original distinction between epistemological and metaphysical necessity [Kripke, 1980, 35 - 37] Jackson contends that (3) and

4. *NaCl* is *NaCl*.

express the same necessity but differ in how this necessity can be known [Jackson, 1994, 34] [Jackson, 1998a, 77]. Whereas (3) is necessary merely *a posteriori*, (4) is an *a priori* necessity .

Based on this epistemological understanding of necessity Jackson gives a stronger notion of entailment which he thinks is necessary to fill the explanatory gap between (1) and (2): a priori entailment. Although metaphysical entailment $\lceil p \parallel q \rceil$ guarantees a conditional $\lceil p \rightarrow q \rceil$ to be necessary, this necessity would be merely a posteriori. *p* a priori entails *q*, however, not only if *p* is true in all worlds where *q* is true, but also $\lceil p \rightarrow q \rceil$ must be an a priori necessity. To solve her placement problem, accordingly, the metaphysicist has to maintain an a priori necessary conditional with (2) in the consequent and (1) in the antecedent. Because (3) is a posteriori, the above deduction does not suffice for this.

Now, analysis enters the stage. According to Jackson [Jackson, 1998a, 80 - 82], it provides a priori knowledge of

3'. Salt is the actually salty stuff

Additionally, for the sake of the argument, *T* contains

4'. NaCl is the actually salty stuff

Since (1), (3') and (4') entail (4), analysis renders '(1) \wedge (40) \rightarrow (43)' an a priori necessity. Thus, (3), although being an a posteriori truth, is derived a priori from (1) and (4'). Therefore, given the above deduction and the logical truth of transitivity '(1) \wedge (40) \rightarrow (2)' becomes an a priori necessity itself. Hence, analysis allows the metaphysicist to demonstrate that (1) does indeed a priori entail (2).

In sum, Jackson argues that serious metaphysics brings with it placement problems which cannot be solved but by identifying entailment relations. As this entailment needs to be a priori, and only analysis provides the required a priori knowledge, analysis plays an essential role in metaphysics.

2. Two-dimensional descriptivism of natural kind terms

Jackson's crucial assumption is that analysis provides the required a priori knowledge of (3'). Taking a step back, though, this seems little plausible [Harman, 1994, 43]. The paradigm of a priority, as Harman points out, is our knowledge of logical truths. Whereas this, however, can be achieved by mere deduction, analysis relies on induction in two respects. First, the philosopher generalises from various judgements to the unique intuition about a possible case. Second, she infers from a small number of cases a definition which is supposed to hold generally. This epistemic difference already requires Jackson to specify what he means by 'a priori'. The various objections raised against the analytic-synthetic-distinction also cast doubt on whether the analysis of concepts yields a priori knowledge. Therefore, in order to render '(1) \rightarrow (2)' a priori Jackson needs to elaborate the traditional conception of 'a priori'.

This is even more so as Jackson's champions analysis of natural kind terms. Thus, knowledge of (3') being a priori demands the subject to know the reference of 'salt' merely by means of her linguistic competence. If so, 'salt' would refer to whatever is the white, powdery stuff which is present in sea-water and is used to flavour and preserve food. More generally, the reference of a natural kind term '*F*' would be determined by which properties a speaker associated with it.

This, however, amounts to a descriptivist theory of reference. Hence, Jackson's assumption holds only if such descriptivism holds. The well known externalist cases studies, however, have swept away traditional descriptivism by showing that the reference of '*F*' is independent of whichever descriptions speakers associate.

Against this obstacle Jackson applies considerable effort, by developing a two-dimensional approach to natural kind terms [Jackson, 1994, 39], [Jackson, 1998a, 46]. Two-dimensional semantics is the approach of disambiguating traditional conceptions of semantic value into two different aspects. With Jackson, the difference is drawn between two types of functions from possible worlds into extensions, *C*- and *A*-intensions. This distinction is based on two different ways to think of possible worlds [Jackson, 1998a, 47]. From the first stance a natural kind term '*F*' is used at the actual world @ to talk about another world *w*, and thus has the same extension at any *w*, namely whatever is an *F* at @. In this sense, 'salt' refers to *NaCl* even at Twin Earth. From the second point of view, however, '*F*' is used as if *w* would be the actual world. Then, 'salt' refers to *AbCd*, but again at all worlds, considered as counterfactual. The *A*-intension, now, takes this latter stance and maps actual worlds to extensions, whereas the *C*-intension distinguishes one actual world and gives the according extension for counterfactual worlds. This is crisply represented in tables, as it is done for 'salt' in table 1.

	@	<i>w</i> ₁	<i>w</i> ₂	...	possible worlds as counterfactual worlds
@	<i>NaCl</i>	<i>NaCl</i>	<i>NaCl</i>	...	← <i>C</i> -intension
<i>w</i> ₁	<i>AbCd</i>	<i>AbCd</i>	<i>AbCd</i>	...	
<i>w</i> ₂	<i>EfG</i>	<i>EfG</i>	<i>EfG</i>	...	
...	

worlds as actual

↙ *A*-intension

Table 1: the two-dimensional meaning of 'salt'

Jackson exploits this framework to revive a descriptivist theory of reference for natural kind terms '*F*'. He admits that its *C*-extension is not determined by a description. 'Salt', as used at @ talking about *w*, refers to *NaCl* although *AbCd* is the salty stuff at *w*. Nonetheless, he claims that the *A*-intension of 'salt' corresponds to a rigidified definite description [Jackson, 1994, 39], that is a conjunction of stereotypical features ('salty') a sortal ('stuff'), a uniqueness clause ('the') enhanced by an operator which species the actual world ('actually'): Salt is the actually salty stuff.

Based on this semantics Jackson elaborates the epistemology of analysis. Whereas linguistic competence alone does not suffice to provide knowledge of its *C*-intension, as the externalist cases reveal, mere reflexion about one's implicit conceptual understanding of *F*, he claims, gives knowledge of its *A*-intension. A speaker of English may not know that salt is *NaCl*, or a Twin-Earthling that what he calls 'salt' is *AbCd*. However, or so Jackson presumes, both know that salt is the salty stuff of their respective acquaintance, know that rigidified definite description which makes up the *A*-intension. Since this knowledge is acquired as soon as the English respectively Twin-English word 'salt' is understood, it does not depend on which world is the actual. For Jackson, this circumstance is sufficient for knowledge of a term's *A*-intension to be a priori [Jackson, 1998a, 50]. Thus, analysis would indeed yield a priori knowledge, could solve placement problems and therefore play an essential role for serious metaphysics. This result, however, stands or falls on the presumption that for any natural kind term, any speaker has a priori knowledge of a rigidified definite description which makes up the term's *A*-intension. In the next section I show how contentious this assumptions is.

3. Two-dimensional descriptivism is controversial

To establish analysis as the only cure against placement problems, Jackson has developed a two-dimensional descriptivist semantics of natural kind terms. Traditional descriptivism was defeated by counterexamples. The fatal weakness of Jackson's argument is that against his two-dimensional descriptivism, too, counterexamples can be construed. They show that any constituent of the definite description, be it the uniqueness clause, the sortal or one of the stereotypical features, is revisable in view of empirical findings. Any adjustment to save a priori knowledge of *A*-intensions, it is demonstrated, either weakens the description to triviality or, as Laura Schroeter puts it, credits '[...] us with a more accurate understanding of the reference of our concepts than we seem to have' [Schroeter, 2004, 432].

First, that natural kind terms are not a priori linked to stereotypical properties is suggested by cases found in [Block & Stalnaker, 1999, 432]. Laurence and Margolis [Laurence & Margolis, 2003, 261-263] explicitly tie up with Putnam's argument against a descriptivism of kind terms [Putnam, 1970, 187-190]. They point out that to command the term 'salt' does not presuppose knowledge of salt being liquid, clear or having anyone of the properties commonly associated with it as these are contingent facts about our world. In some passages [Jackson, 1994, 39],[Jackson, 1998b, 241], Jackson anticipates this objection and allows deviant cases as long as enough of the stereotypes are fulfilled; however, he fails to specify and justify the limit. Presumably, he would have to allow extreme deviations. In fact, as Block and Stalnaker point out, nothing guarantees that any stereotype is fulfilled at all. Effectively, he is compelled to trivialise speakers' knowledge of how salt is like.

Second, Schroeter [Schroeter, 2004, 439] points out that Aristotle thought of salt as one of the four basic configurations of prime matter. Today, chemical inquest has revealed that salt is a chemical kind, accordingly speakers associate a different sortal. Apparently, speakers do not have an infallible understanding and therefore no a priori knowledge of the sortals which are part of the rigidified definite description. A possible response on behalf of Jackson denies that such idiosyncratic metaphysical opinions of the speaker constitute his understanding of the term but more basic and universally shared '[...] principles of theory choice [...]' (438). Nevertheless, any specification of this vague suggestion is refuted by further cases. More important, though, this response is flawed by origin, as it questions the value of knowing *A*-intensions.

Finally, the uniqueness clause of the description is challenged by counterexamples, too. Since salt well might be a mixture of *NaCl* and *AbCd*, associating a definite description, rigidified or no, with the term 'salt' is fallible [Block & Stalnaker, 1999, 18]. In response, Jackson could switch to a partial definition of 'salt' where two different but each again definite rigidified descriptions make up the respective *A*-intension [Block & Stalnaker, 1999, 21], [Schroeter, 2003, 4]. This, however, attributes overly strong cognitive capacities to speakers, as they are supposed to disambiguate infallibly the diverse meanings of natural kind terms. Alternatively, it might be suggested that the rigidified description merely captures the functional role independently of what salt consists of at the single worlds. Again, though, this move trivialises description.

To sum up these inquests, two-dimensional descriptivism falls prey to a dilemma when confronted with externalist counterexamples: Either it generalises the descriptions which speakers are supposed to know a priori such that this knowledge becomes trivial, or it enhances them to capture any far-fetched cases such that knowledge of them exceeds what can reasonably assumed to be human cognitive capacities. Considered by itself, the assumption that speakers have an a priori knowledge of *A*-intensions thus becomes implausible.

Jackson accordingly embeds his epistemological assumptions into a more general picture of language and communication. He sketches it in different ways [Jackson, 1994, 34][Jackson, 1998b, 202][Jackson, 2009, 391, 423f.], but essentially it amounts to three claims [Jackson, 2004, 266f]. First, he understands languages as sets of items by means of which a transmitter conveys

information to receivers. This requires both to associate with these linguistic elements possible ways things are. Second, among these associations needs to be a class of such which remain stable across hypothetical cases of application. Third, these associations are built into the meaning of the terms such that being a competent speaker suffices to know them. By an argument to the best explanation Jackson identifies these stable and a priori knowable associations with his *A*-intensions.

Admittedly, this picture provides Jackson's assumption of a priori knowledge of *A*-intensions with some plausibility. Nevertheless, this achievement turns out to be merely apparent, because Jackson's view on language and communication is by no means less controversial than the claim to a priority itself.

Various arguments have been raised in the literature, but for reasons of brevity I focus on a already known opponent of Jackson's case. Schroeter casts doubt on argument from language by proposing an alternative model of communication. It dispenses with any core set of resilient assumptions about the extension of '*F*', instead, the folk theory about *F*s is continuously developed, changed and adjusted [Schroeter, 2006, 572]. Still, it can account for the difference between change of belief and change in meaning as well as for synonymy, since meaning is solidified by holistic, rationalising interpretations speakers undertake of their own linguistic practise. This 'jazz model' of communication [Schroeter & Bigelow, 2009, 102] is not only more economical than Jackson's account as it reduces linguistic competence to general heuristic abilities, it also captures better the psychological reality. And it does so without any commitment to speakers associating with a term a resilient class of properties which could be identified with *A*-intensions. Hence, Jackson's account is not the best explanation of language and communication and therefore fails to bolster his descriptivism.

4. Serious metaphysics without analysis

In the foregoing section, I have sketched the various obstacles Jackson's argument faces. The number of objections raised indicates how controversial his presumptions are and accordingly how weakly his overall argument is founded. To establish that only analysis allows the metaphysician to solve her placement problems, he commits himself not merely to a two-dimensional semantics for natural kind terms but to a full-blooded descriptivist theory of reference. As these indeed are strong, though contentious theories, he gets hold of a powerful philosophical machinery. It is therefore hardly surprising that based on these assumptions he arrives at the envisaged conclusion that speakers have a priori knowledge about the reference of natural kind terms.

Simultaneously, however, he inherits all the problems of these positions. Thus, his argument becomes considerably vulnerable, at more than one point. If only some of the objections above hold, Jackson's argument fails to show that analysis is essential for serious metaphysics. In any case, however, one has to admit that Jackson's argument rests on highly controversial claims.

It might be replied that hardly any philosophical argument is free of objections and that contentious assumptions do not yet disqualify the overall project. Instead, its value ought to be measured not so much according to its costs but according to the theoretical benefits it promises. The issue Jackson has started from, the need of serious metaphysics to identify entailment relations between theoretical and commonplace truths, is indubitably both relevant and urgent. Therefore, it might be argued, Jackson's argument can still be maintained as a valuable contribution and has to be considered seriously. This defence of Jackson's argument only holds, however, if no alternative solution for placement problems stands to reason.

In a series of articles [Kirk, 1996], [Kirk, 2001], [Kirk, 2006a] Robert Kirk addresses in an initially congenial way the commitments of serious metaphysics. As Jackson, Kirk argues that the global supervenience thesis which a serious metaphysical theory is equivalent to, compels the theorist to identify entailment relations between theoretical truths such as (1) and commonplace truths like (2). Since metaphysical entailment would not suffice (page 1), she needs to establish strict implication instead, such that the conditional '(1) → (2)' becomes a necessary truth.

Kirk and Jackson disagree, however, about which necessity is required. Whereas Jackson contrasts a posteriori with a priori necessity and thus gives analysis a prominent place (page 1), Kirk champions logical necessity [Kirk, 2006b, 529]. For the exemplary theoretical truth (1) to strictly imply the commonplace (2), the conditional '(1) \rightarrow (2)' must be necessary thus that its negation '(1) \wedge \neg (2)' is inconsistent [Kirk, 1996, 244], [Kirk, 2006b, 544] [Kirk, 2006b, 527]. In the remainder of this paper, I shall elaborate Kirk's approach and sketch an argument why this different conception of necessity offers an alternative route for entry by entailment which does not require a priori knowledge and therefore is not committed to any descriptivism.

To forestall misunderstandings, strict implication (hereafter: SI) covers a priori entailment if there is such. The inconsistency might be of a kind that analysis indeed yields a priori knowledge of the conditional. The crucial difference, however, is that SI can dispense with it. Jackson suggests that if merely metaphysical necessities do not suffice a priori knowable sentences make up the only strengthening available. I deny this dichotomy. There are sentences, and '(1) \rightarrow (2)' is one of them, which are logically necessary but still not knowable a priori. This is so, because conceivability is not necessary for consistency. For any circle's circumference c and diameter d , $\lceil x = \frac{c}{d} \rightarrow x \in \mathbb{Q} \rceil$ is necessarily true. Nonetheless, $\lceil x = \frac{c}{d} \wedge x \notin \mathbb{Q} \rceil$ is conceivable, as speakers might grasp the concept of the ratio of a circle's circumference to its diameter and still not know that π is not a rational number [Kirk, 2006a, 533]. Generally, there are strict implications such that it is impossible for speakers to proceed a priori from knowledge of the antecedent to knowledge of the consequent. Therefore SI does not presuppose a priori entailment.

One might deny SI being a valuable alternative since the strict, but a posteriori implication '(1) \rightarrow (2)' would fail to explain the step from (1) to (2) (page 1). I counter that the consistency necessary for '(1) \rightarrow (2)' being a strict implication corresponds to a proof, that is a complete unit of explicit reasoning leading from (1) to (2). In fact, this may well be the very same reasoning as given above as an example for a priori entailment. SI therefore has the same explanatory potential as Jackson's a priori entailment, the only difference is that SI does not require (3') to be a priori knowable. Still, doubts might be raised based on the concern that such an account would presuppose and be committed to a certain calculus. However, the consistency at issue need not be proved in a formal system. Informal reasoning suffices to justify strict implication.

It might still be objected that SI eventually collapses into a posteriori entailment. If p implicates q strictly, it would be argued, such that the conditional $\lceil p \rightarrow q \rceil$ is provable ($\lceil \vdash p \rightarrow q \rceil$) and completeness holds for T then $\lceil p \rightarrow q \rceil$ is also true in all models ($\lceil \models p \rightarrow q \rceil$), which would mean nothing more than being true at all worlds. As this, however, is already given by *superT* (page 1), SI would beg the question and the metaphysicist would be where she started from.

This line of thought, however, goes wrong since it confuses models with possible worlds and therefore model-theoretic with metaphysical necessity. At best, a possible world may count as the domain of a model, which, though, still contains in addition its interpretation function which maps non-logical expressions into the domain. Therefore, if $\models p$, then p is true merely in virtue of its logical form, independent of its meaning. Truth in possible worlds, on the contrary, applies to interpreted sentences, such that if $\Vdash p$, then p is true because of what it says is the case at any possible world. Accordingly, $\Vdash p$ is not sufficient for $\models p$, as p 's truth may depend on its meaning. Hence, model-theoretic necessity is by far a stronger notion than metaphysical necessity, and SI does not beg the question.

In conclusion, SI is not committed to the two-dimensional descriptivism Jackson has developed in support of his a priori entailment. Accordingly, the various objections raised above do not apply. Nonetheless, SI gives a sufficient answer to the placement problems of serious metaphysics. In view of its serious and diverse difficulties and the availability of an alternative I conclude that Jackson fails to show why analysis should play an essential role in metaphysics.

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