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ESSAY REVIEW

On Incommensurability

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Howard Sankey, *The Incommensurability Thesis* (Aldershot: Avebury, 1994), viii + 227 pp., ISBN 1-85628-631-2, Hardcover £35.00.

THIS BOOK offers a referential approach to the incommensurability thesis, defending theory comparison, while allowing for untranslatability. It is instructive with respect to developments in referential theory and it also offers considerable advances in the assessment of some well-known arguments against untranslatability and how translation relates to the incommensurability thesis. Nevertheless, with his referential approach, Sankey presupposes a number of realist assumptions that lead him to misconstrue Feyerabend and Kuhn's intentions in establishing the incommensurability thesis; and consequently, to mistakes about how to confront the challenge that the thesis was meant to pose. Furthermore, the book is somewhat dated: although it appeared in 1994, the debate covered ends in about 1984.[1] In spite of these problems, the book is well-structured, clearly written, and rich in its argumentative content. After considering Sankey's analysis, we shall suggest a separate thesis which characterizes many of the problems with Sankey's approach to the incommensurability thesis.

In the first chapter, Sankey reviews how the incommensurability thesis is understood and why it has been the source of so much controversy. He presents incommensurability as a version of semantic relativism, at heart consisting of the observation that the vocabulary used in some given theory is somehow semantically dependent on that theory. Consequently, the terms of successor theories have different meanings. This creates three interrelated problems: In what sense can successive theories be rivals? How can a choice between such theories be based on rational grounds? And where, under these circumstances, does that leave our notion of

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[1]There are few references to works after 1984: only two from 1985, four from 1987, and the other eight authored by Sankey himself, including his Melbourne thesis from which this work was developed.

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scientific progress? Sankey hopes to undercut these troublesome questions by reconstructing the incommensurability thesis on semantic grounds; thus, the book is concerned with 'how to respond to the incommensurability thesis within the framework of the theory of reference' (p. 5). His strategy is based on the standard response first suggested by Scheffler: to grant that there may be meaning variance of the terms involved but to insist on reference invariance.

Sankey then reviews Feyerabend and Kuhn's positions. His presentation in this chapter is fair and, in general, accurate. A few things, however, are somewhat disturbing. First, Sankey generally does not cite by original publication date. While this may seem minor, the reprint dates cited make it difficult to trace the important historical developments involved in both Feyerabend and Kuhn's positions. Especially with Feyerabend, Sankey fails to differentiate between different stages of development. Furthermore, Sankey continues the stereotyped perception of Kuhn. For example, Kuhn is often interpreted as having claimed in *Structure of Scientific Revolutions* (SSR) that communication between successive paradigms is entirely impossible. Yet, in Sankey's book (p. 18), there are four citations from SSR which make it clear that Kuhn only limited successive paradigms to *partial* communication.

In the second chapter, Sankey adopts and revises Scheffler's proposal that successive theories be compared by their content. The general strategy seems to be this: we accept meaning change, but we want content comparison. Thus, we turn to referential stability across incommensurable theories in order to preserve the possibility of content comparison. The idea is that statements from different theories may contradict each other as long as their terms share reference. The question becomes: How is reference determined and does it remain stable between incommensurable theories? Given a descriptive theory of reference, a substantial change in theoretical context will promote new descriptions associated with the empirical objects. If the associated description changes, then because reference is determined by description, reference changes: hence referential instability. In short, reference changes when meaning changes because meaning determines reference. Sankey concludes that a theory of reference less sensitive to variations in description is needed. The causal theory of reference is a good candidate. However, some modifications are necessary. First, if the reference of a term is really fixed once and for all by some initial baptism, then reference change is altogether impossible, which is implausible. Second, for Sankey the causal theory must be supplemented with descriptions because (a) baptism requires some descriptive element to be determinate, and (b) theoretical terms require that descriptions play an even greater role because direct ostension is not possible. For the latter case, Sankey adopts Nola's suggestion that the necessary supplement consists of a specification of the causal effects of the theoretical entity introduced. The result is a causal–descriptivist theory of reference which is the basis for the rest of the book.

One of the serious philosophical weaknesses of the book shows up in this chapter. It concerns Sankey's concept, derived from Scheffler, of content comparison of

incommensurable theories (pp. 38–42, p. 221). On this view, the comparison of theories consists in a juxtaposition of contradictory observational statements derived from the two theories or, put another way, of statements that receive conflicting truth values from the two theories (what Kuhn calls 'point-by-point' comparison). Feyerabend and Kuhn's response to this form of theory comparison is that because of meaning change, there are always predictions of both theories that find no competing counterpart in the other.[2] But these predictions must also play a role in theory comparison. Thus, the weakness with Sankey's approach is that he does not consider questions about what theory comparison might consist in, but simply presupposes that there is nothing more to theory comparison than a point-by-point comparison of the predictions those theories might make. The possibility of this sort of theory comparison is certainly plausible if one is committed to realism, as is Sankey. But this commitment, and the presuppositions it entails, significantly limit the debate, raising a problem to which we will return. For now, it suffices to state that Feyerabend and Kuhn are certainly not naive realists and that, for them, incommensurability is one form of expressing a critical attitude towards naive realism. Thus it may be a serious impediment to a critical reconstruction of incommensurability if one begins by presupposing realist assumptions. Furthermore, in regard to theory comparison, Sankey should have considered Kuhn's more recent writings in which the no-overlap principle is developed. This principle tries to explicate what the conceptual contradiction between incommensurable theories consists in; roughly, that kind terms cannot share reference unless they are related as species to genus.[3] Thus, incommensurable theories in which the extension of some natural kind term has shifted are incompatible with each other due to the no-overlap principle, although this incompatibility cannot be transformed into a logical contradiction. In short, even if Sankey succeeds in securing point-by-point theory comparison through his referential approach, he will not have met the challenge to the concept of theory comparison that the incommensurability thesis poses.

In the third chapter, Sankey develops the idea that theories that share reference and are thus comparable with respect to content may nevertheless be partly or wholly untranslatable. Incommensurability denies exact translation or strict preservation of semantic content through translation. Because reference determination contributes to semantic content, differences in reference determination result in different semantic content. Untranslatability between theories results if the specific means of reference fixing in one theory cannot be reproduced in the context of the other theory. The main

[2]See, e.g., Feyerabend, 'Problems of Empiricism' in R. G. Colodny (ed.), *Beyond the Edge of Certainty: Essays in Contemporary Science and Philosophy* (Lanham: University Press of America, 1965), pp. 145–260; see 152–3, 216–7; for T. S. Kuhn, see P. Hoyningen-Huene, 'Kuhn's Conception of Incommensurability', *Studies in History and Philosophy of Science* **21** (1990), 481–492, particularly Section 5, and P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993) Sections 6.3.d and 7.4.b.

[3]T. S. Kuhn, 'The Road since Structure', in A. Fine, M. Forbes and L. Wessels (eds), *PSA 1990*, Volume 2 (East Lansing: Philosophy of Science Association, 1991), pp. 3–13. See p. 4.

source for the impossibility of one theory's fixing the reference in the same way as another theory is the incompatibility of those theoretical principles that enter reference fixing. For Kuhn a sufficient criterion on translatability is sameness of lexical structure. According to Sankey, Kuhn's criterion results from a fallacy (p. 100). Sankey claims that translatability requires sameness of the ways in which references are fixed. He justifies this criterion claiming that equivalent 'translational expressions must have the same extension *in all possible worlds*' (p. 77), which will only be secured if the way references are fixed in both languages is the same. Yet criteria involving rigid designation may be too strong, because for Kuhn the criteria used to determine reference vary within a single scientific language community. This is an important aspect of Kuhn's theory because it allows for future disconsensus to arise.[4] Sankey's suggestion that the criteria be fixed *between* language communities may be overly restrictive as for Kuhn the criteria vary even *within* a community.

In Chapter 4, Sankey defends his account of untranslatability between incommensurable theories against well-known arguments by Putnam and Davidson. These arguments essentially assert incoherence on the part of those who claim and defend untranslatability. Sankey brilliantly succeeds in analyzing and refuting these arguments. This chapter is, in our opinion, the best of the book. It shows the author in full command of the weapons of analytic philosophy: precise analysis of positions and concise arguments to the point.

The aim of Chapters 5–7 is the defense of realism that Sankey sees as necessary to uphold his referential approach; namely referential stability in spite of meaning variance through transition between incommensurable theories. Sankey now needs to defend realism because he has used as yet undefended realist presuppositions in his discussion of the incommensurability thesis. His strategy should be clear: he has analyzed the incommensurability thesis within a realist framework, and now he attempts to defend that framework. After reviewing Sankey's defense, we will consider an issue that exposes a general problem with this strategy. As for the three chapters, they are devoted to attacking three forms of the thesis that the transition between incommensurable theories involves referential discontinuity. They all hinge on one's conception of 'world'. Chapter 5 treats the least extreme view which allows reference to change profoundly while holding the world constant. Chapter 6 discusses the most extreme thesis: that the world itself changes through a scientific revolution; and Chapter 7 deals with the somewhat less extreme view of constructivism 'according to which the world of a theory is not the real world, but is in some way constituted by theory' (p. 139).

In Chapter 5, Sankey attempts to analyze what both Feyerabend and Kuhn have said about reference change, and then to show that their views on reference change cannot be upheld. In Feyerabend's case, Sankey's strategy is to depict a fundamental

[4]P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993). See especially, p. 235.

inner tension in his position. According to Sankey, Feyerabend's pragmatic account of observation commits him to continuity of reference to observable objects (pp. 139–141; p. 187), whereas his views on reference commit him to discontinuity of reference between incommensurable theories. The first part of this statement is quite surprising and Sankey's attempt to establish it is far from convincing. For instance, in Feyerabend (1965) there are telling but uncited sentences about the pragmatic theory: for example 'The pragmatic theory denies that there is an asymmetry between theory and observation' (p. 152); and the denial of this asymmetry is also meant in regard to meaning and reference. In addition, the central argument in section XV is directed against the existence of an unalterable factual core contained in observational statements.[5] Thus, it is highly implausible that the pragmatic theory of observation commits Feyerabend to any continuity of reference on any level. Second, the arguments Sankey advances in order to commit Feyerabend (against his will) to continuity of reference at the observational level are only plausible if realism is already presupposed (see especially p. 140 and p. 151). But as realism is just the issue of the dispute, such arguments carry no persuasive force for the opposing party, although they may provide some deceptive self-assurance to the defender of realism.

As for Kuhn, Sankey proposes three different interpretations of Kuhn's position on reference change in SSR assuming that 'no unequivocal analysis of Kuhn's original view of radical reference change can be given' (p. 153). He further assumes a fairly drastic change in Kuhn's position between the early sixties and early eighties.[6] The first interpretation, according to Sankey, is consistent with Kuhn's later position but it is only cursorily discussed. The second interpretation assumes 'that Kuhn is a realist for whom the world independent of theory does not itself change in the transition between theories' (p. 156), and that paradigms are associated with metaphorical 'worlds' determined by the respective paradigm's ontology. Sankey's objection to this interpretation is that 'the question of extra-linguistic reference remains completely unanswered' (p. 157). One should have serious reservations about this interpretation of Kuhn's realism and Sankey's treatment of it. First, Sankey's characterization is either analytic or meaningless. Second, if one seriously accepts that paradigms are not about *the* world, in the sense of a world that is completely independent of theory, then the question of 'extralinguistic reference' can no longer be sensibly posed. It is not a drawback of such a theory that it cannot answer the question of extralinguistic reference; rather it is a property of such a theory that within its framework this is not a meaningful question to ask. In other words, Sankey's notion of 'real' or 'actual' reference is not an appropriate scale by which to judge Kuhn's theory on this interpretation. Sankey's third interpretation takes Kuhn's use of the

[5]Or succinctly put by Feyerabend: 'observations ... are not merely theory-*laden*, ... but *fully theoretical*', from p. X of P. Feyerabend, *Realism, Rationalism and Scientific Method: Philosophical Papers, Volume 1* (Cambridge: Cambridge University Press, 1981).

[6]We strongly doubt this: see P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993), especially Sections 3.6 and 6.3.

term "referent" to be metaphorical: 'It is not to be read as "referent" and is not to be taken to imply reference at all. Instead, it may be glossed as "purported referent", which makes the question of actual reference a separate issue' (p. 158). Not surprisingly, this interpretation also leads to serious difficulties, especially with respect to theory comparison, given Sankey's adherence to narrow point-by-point comparison.

In his discussion of Kuhn's later view, Sankey comes to the conclusion that it 'is compatible with a modified causal theory of reference' (p. 171) that Sankey proposed in chapter 2.[7] This compatibility is doubtful because the theory Sankey proposes is realist in a way that is at odds with Kuhn's theory. Perhaps the problem can best be seen through a consideration of Sankey's treatment of the same-kind-as relation necessary for reference fixing of natural kinds by means of ostension to a representative sample. For Sankey, 'this is a theoretical relation, in the sense that it is determined by internal structural traits which require scientific research *to discover*' (p. 52, our italics). For Kuhn, however, these similarity relations (as he calls them) are not out there to be discovered; rather their status is between invention and discovery, which is characteristic of Kuhn's ontological position.[8] Simply put, as reference is a relationship between word and object, Sankey and Kuhn cannot share such a theory of reference because they begin with different conceptions of 'object' to which a word refers. One other minor mistake concerns 'the metaphor of centrality' that Sankey attributes to Kuhn, which suggests that for Kuhn reference change is confined to 'a central complex of higher order terms' (pp. 173–4). This metaphor that Sankey so vigorously attacks is his own creature and should not be attributed to Kuhn.

Chapter 6 discusses the widespread impression that Feyerabend and Kuhn are idealists in the sense that reality is completely determined by theory. We note in passing that this is certainly not the only form of idealism in the history of philosophy that has received attention, but in the twentieth century, this form of subjective idealism certainly makes an *ideal* straw man. This interpretation of both authors is refuted by showing that they 'are committed to an independent world which is invariant between theories' (p. 183). Although we can more or less agree with this ascription, the real question is not whether they are committed to an independent world,[9] but what role this world (if it deserves this name at all) has to play in a theory

[7]For Kuhn's own critical treatment of the causal theory of reference see and T. S. Kuhn, 'Possible Worlds in History of Science', in S. Allen (ed.), *Possible Worlds in Humanities, Arts, and Sciences* (Berlin: de Gruyter, 1989), pp. 9–32, and 'Dubbing and Redubbing: the Vulnerability of Rigid Designation', in C. W. Savage (ed.), *Scientific Theories. Minnesota Studies in Philosophy of Science 14* (Minneapolis: University of Minnesota Press, 1990), pp. 298–318; once again Sankey's failure to consider Kuhn's recent work becomes apparent.

[8]For details and references, see P. Hoyningen-Huene, 'Idealist Elements in Thomas Kuhn's Philosophy of Science', *History of Philosophy Quarterly* **6** (1989), 393–401, and *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993), Section 3.2.

[9]Kuhn has changed his opinion on this several times, see P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993), Chapter 2.

of scientific development, including the incommensurability debate. Further, in Section 6.3, Sankey seems unaware that Kuhn has withdrawn the gestalt switch metaphor of revolutions, as it has been misleading.[10] Yet the main weakness with Sankey's treatment of Kuhn in this chapter is that he tries *to establish* Kuhn's commitment to a theory independent world *by showing* that his talk of 'world changes' is not meant literally (p. 187). Of course, for a realist there is only one, mind-independent world. But for the position that both Feyerabend and Kuhn advance it may be necessary to have two different concepts of 'world', where one 'world' changes with theory and the other is independent of theory. However these two concepts are worked out in detail, their difference certainly cannot be characterized such that the first is metaphorical and the second literal. If one of those worlds could be characterized as 'metaphorical' at all, *it would be the other way around.* This may sound bizarre, but we will return to this point shortly. In all fairness, one should note that Sankey presents evidence that Kuhn is indeed committed to some sort of theory-independent world (pp. 189–90).[11]

In Chapter 7, Sankey critically discusses a variety of constructivist doctrines which are united by two characteristic theses: (1) 'that there is a reality whose existence and character are independent of mental activity', and (2) 'that the world dealt with by a scientific theory is [not] such a mind-independent reality itself' (p. 197). Thus, constructivism differs from idealism by 'the minimal realist concession' (p. 183). But as this additional real world does no work in Sankey's account of constructivism, the difference cannot become operative. Consequently, the difference between constructivism and idealism effectively collapses. The basic aim of Chapter 7 is 'to defend the view that incommensurability is a problem of language rather than metaphysics' (p. 197). Incommensurability must involve considerations of both language and metaphysics because it is about the relationship between word and *object.* As Sankey has attempted to meet the incommensurability thesis within the framework of a theory of reference, and reference involves the relationship between word and object, Sankey can only defend his claim that incommensurability is a problem with language if he has already presupposed what the object is, i.e., if he has brought his unquestioned realist metaphysical commitments to the debate.

As should now be clear, a common theme characterizes our disappointment with Sankey's analysis of the incommensurability thesis; namely, its relation to realism. First, we saw that Sankey failed to confront essential aspects of incommensurability because he presupposed that the larger issue of theory comparison could be reduced to mere point-by-point comparison. Second, we noted that Sankey's added criterion

[10]T. S. Kuhn 'Response to Commentators', in S. Allen (ed.), *Possible Worlds in Humanities, Arts, and Sciences* (Berlin: de Gruyter, 1989), pp. 49–51, see pp. 50–1.

[11]On the whole issue, see P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993), Chapter 2 and the Epilogue. That Feyerabend subscribes to views 'almost identical' with those of Kuhn, as it is summarized in the Epilogue of Hoyningen-Huene (1993), is explicitly stated in P. Feyerabend, 'Realism and the Historicity of Knowledge', *Journal of Philosophy* **56** (1989), 393–406, on p. 405, fn. 26.

of translatability apparently *presupposes* that the criteria used for reference determination can be fixed, while for Kuhn it is essential that those criteria vary, so that potentially disconsensus can arise. Third, Sankey *assumed* he could judge reference on realist scales without realizing that it is a feature, not a drawback, of Kuhn's theory that the question of extra-linguistic reference cannot sensibly be posed. Fourth, we saw that Sankey's proposed causal-descriptivist theory of reference remains at odds with Kuhn's theory because Sankey *presupposed* that the kind-relations, to which scientific terms refer, exist mind-independently waiting to be discovered, whereas for Kuhn their status is between invention and discovery. Finally, we saw that Sankey's attempt to treat incommensurability as a problem of language failed to recognize that reference, as a relation between word and object, must address metaphysical questions concerning the status of objects. Sankey simply *presupposed* that those objects exist mind-independently. Given these repeated misunderstandings, our question becomes: why do they continually occur?

The answer we would like to propose is tentative and, in a somewhat uncontrollable way, simplified. First, understood as a challenge to realism, as Feyerabend and Kuhn originally intended, the incommensurability thesis raises a debate between realism and those who wish to moderately distance themselves from realism. For brevity of expression and because we lack a better term, we shall call this second party 'non-realist'. Of what exactly the non-realist position consists is quite difficult to make out, as it is still evolving. But it is sufficiently developed to say where it differs from realism, and yet is by no means as radical as the positions Sankey discusses under the labels of 'idealist' or 'constructivist'. Second, the debate between the realist and the non-realist remains undecided, as nobody has been able to produce arguments that could yield even the crudest unification of opinion. A popular response to this aspect of philosophical life is to call the debate between realists and non-realists a pseudo-problem. It is, perhaps, hasty to conclude that the dispute is undecideable; rather, it may be a philosophical dispute which involves incommensurability of a sort such that effective means of rational *meta-theory* choice are not yet at hand. That is, because every instance of scientific change can be interpreted from both the realist and the non-realist perspective, a rational choice between the position of the realist and the non-realist cannot be forced through a discussion of particular cases of theory change (as is stressed by Feyerabend and Kuhn on the level of scientific theories). In other words, there can be no point-by-point comparison of realist and non-realist positions. Furthermore, because the differences between the two parties touch on metaphysical assumptions that are notoriously difficult to justify, and because these differences feature significantly in the debate between realists and non-realists, we propose a rather risky thesis; namely, that the debate about incommensurability is permeated by a *meta-incommensurability* between the realist and the non-realist which promotes local communication difficulties between the two parties.

Our first indication of meta-incommensurability can be derived even from Sankey's referential approach to incommensurability. That is, there are several terms

that change meaning when one crosses the line from realism to non-realism; namely, 'reality', 'world', 'theory comparison', 'fact', and even 'reference' itself. These terms have different meanings for the realist and the non-realist: they purportedly refer to different things, based on the different metaphysical assumptions each party brings to the debate. For the realist, 'world' refers to something like absolute reality or the world-in-itself. But for the non-realist, 'world' may refer to something else. Thus Kuhn wrote 'though the world does not change with a change of paradigm, the scientist afterward works in a *different world*' (p. 121, our italics).[12] Hoyningen-Huene has introduced the terminology 'object-sided' and 'subject-sided' in an attempt to characterize the problem.[13] With these terms, we can say that 'world' refers to something purely object-sided for the realist, while for the non-realist it refers to something co-constituted by object-sided and subject-sided moments ('moments' because these elements cannot be removed or subtracted: they are inseparably bound). Non-realists urge us to change our conception of reality, or the 'world', away from the purely object-sided realist conception. Reality, or the 'world', they contend, always also contains genetically subject-sided moments, despite all impressions to the contrary. This, of course, may seem strange to realists because, to them, reality simply is the purely object-sided: the non-realist's suggestion is a contradiction in terms. Nevertheless, this is the position that both Feyerabend and Kuhn were driven to through their analyses of historical episodes. Consequently, to the realist the non-realist position seems self-contradictory but criticism of it often amounts to the stomping of one's feet, while to the non-realist, realists appear utterly naive because they refuse to realize that reality also contains genetically subject-sided moments.

As for theory comparison, there is a corresponding change. For the realist, competing theories differ in their claims about objectively existing things, and theory comparison consists in weighing the particular successes and failures of both theories. But for the non-realist, the situation is much more complicated. Incommensurability involves a local change in the genetically subject-sided moments that are co-constitutive of reality, so that there is a local feedback loop between each theory and reality. This does not mean to suggest that impartial theory comparison is impossible, but it does become much more complicated and may involve a somewhat holistic character. Competing concrete predictions may still play a role, in principle even a decisive one; but there is more to it. The referent of 'fact' has a similar fate. For realists, facts are discovered. For non-realists, they lie somewhere between invention and discovery. Even the term 'reference' has a different meaning and is used to refer to a different relationship. For the non-realist, the referential relationship is

[12]T. S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962/1970); similarly see pp. 6, 61, 106, 111, 117, 118, 120–122, 135, 141, 147–48, 150.

[13]Hoyningen-Huene has introduced the terms 'object-sided' and 'subject-sided' because the terms 'objective' and 'subjective' function properly only within a realist framework. The new terms are intended to be neutral with respect to realism and non-realism. P. Hoyningen-Huene, *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science* (Chicago: Chicago University Press, 1993), see pp. 33 ff, also pp. 62–66, 122, 125, 267–271.

between words and objects which are co-constituted by subject-sided and object-sided moments.

There is a second indication that makes our meta-incommensurability thesis plausible. It is partly a consequence of the first: not only do the terms the two parties use have different meanings, but meta-incommensurability helps explain why there often seem to be local communication difficulties between the realist and the non-realist. If this is the case, then there may be some profound consequences for philosophical dispute.[14] To begin with, defense of either position is in danger of circularity if articulated from one's own point of view. The circularity consists, for example, in the presupposition of a particular conception of reality or theory comparison, which may make arguments for realism ineffective to the non-realist and vice versa. In order to make understanding of the opposing position possible, it is necessary to change one's point of view, at least temporarily. Yet this is not possible if one has not realized which critical concepts are being used differently and what those differences consist in. The only way out of the deadlock is to become bilingual: to understand both points of view on their own terms. It seems, then, that many of the features of scientific practice that Kuhn tried to describe through the introduction of the incommensurability thesis also arise at the meta-level between realists and non-realists; hence, meta-incommensurability.[15]

Of course, it may be dangerous to use meta-incommensurability as a critique of Sankey's treatment of the incommensurability thesis without an independent, comprehensive examination and justification of the meta-incommensurability thesis; for we do not want to make the same mistake Sankey made: to criticize one camp entirely from one's own point of view. Nevertheless, we can use Sankey's analyses as an indication of the existence of meta-incommensurability; and consequently, suggest that in order to significantly and convincingly confront the incommensurability thesis, one should be aware that a local communication problem exists at the meta-level. This is not meant to suggest that realism is not a respectable position, nor that it does not make sense to confront the incommensurability thesis *with* realism, nor that it does not make sense to see how much of the incommensurability thesis can be kept within a realist framework. We do propose that if realists want to confront incommensurability, they should be aware of the different assumptions about significant concepts that each party brings to the debate; and consequently, they should address the incommensurability thesis in the appropriate places.

To sum up, as Sankey confronts incommensurability within the framework of the theory of reference, it is opportune to point out that the central terms of the debate on incommensurability purportedly refer to different things for the realist and the

[14]A paper on the consequences of meta-incommensurability is under preparation.

[15]To see how and why the meta-incommensurability thesis applies to the continuing struggle surrounding the realism/non-realism issue, see the inadvertent testimony of A. Kukla, 'Scientific Realism, Scientific Practice, and the Natural Ontological Attitude', *British Journal of Philosophy of Science* **45** (1994), 955–975.

non-realist. And as the source of incommensurability between scientists is often mutually exclusive ontological commitments, so the source of meta-incommensurability is the different metaphysical commitments realists and non-realists bring to the debate on the incommensurability thesis. Any critique of incommensurability that does not confront these assumptions will carry little weight and lead only to further misunderstandings of the issues.