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Pietro Gori

- 1 In his late period of philosophical activity, Thomas Kuhn attempted to develop the problematic issue of incommensurability in a renewed way, based on a conception of incommensurable theories as collective structured lexicons and sets of kind terms that are not mutually translatable (cf., e.g., Kuhn 2022: 15). According to Kuhn, the views or world-descriptions defended by two linguistically separate scientific communities are incommensurable because the members of one community cannot fully translate into their own language the concepts used by the members of the other community. Each structured lexicon in fact provides us with a specific viewpoint – indeed, it provides us with a specific *ontology* – that determines what the members of our community can consistently say about the world. For Kuhn, it is this shared ground, which allows for perfectly accurate translation, that the members of different linguistic communities lack. Hence, it is impossible for them to fully *understand* the categories conveyed by a foreign (or out-of-date) language, which is therefore destined to remain incommensurable with their own.¹
- 2 These observations are of interest insofar as they represent the starting point of Kuhn's late attempt to develop a new theory of *meaning*. In his reply to nine papers inspired by or about his work and discussed at a two-day conference held at MIT in May 1990, Kuhn claimed that

a lexicon or lexical structure is the long-term product of tribal experience in the natural and social worlds, but its logical status, like that of word meanings in general, is that of convention. Each lexicon makes possible a corresponding form of life within which the truth or falsity of propositions may be both claimed and rationally justified, but the justification of lexicons or of lexical change can only be pragmatic. (Kuhn 2000 [RSS]: 244)
- 3 This excerpt gives us a hint as to how the issue of the logical status of lexicons and of word meanings might be approached and unpacked. On the one hand, the connection

between the notion of a “lexicon” and that of a “form of life” leads us to a purely Wittgensteinian framework. This is even clearer insofar as Kuhn’s definition of *form of life* is consistent with what Wittgenstein famously argues, e.g., in the *Philosophical Investigations* (e.g. Wittgenstein 1958 [PI]: §241) and *On Certainty* (e.g. Wittgenstein 1969 [OC]: §94 and 162), namely that a form of life is the frame of reference “within which the truth or falsity of propositions may be both claimed and rationally justified.” On the other hand, the justification of lexicons and of lexical change is a matter of pragmatic assessment, for Kuhn. On his view, it would seem to be impossible to provide a purely theoretical justification; in order to appraise the lexicon’s value, one must consider the practical plane of actual deployment. Thus, both the Wittgensteinian and the pragmatist elements seem to be relevant to appreciating Kuhn’s view on the issue of lexicon change – and thus his conception of incommensurability. That is to say, an investigation that explores Kuhn’s late incommensurability thesis in the light of Wittgenstein’s conception of language games, on the one hand, and that stresses the pragmatist feature(s) of Kuhn’s attempted theory of meaning, on the other, might provide an important contribution to Kuhn studies. Yet we should also note that the two abovementioned elements can in fact be merged, given that Wittgenstein’s view of forms of life, language games and world-pictures can be conceived of in a pragmatist fashion based on the idea that, for him, the meaning of a word is a matter of an instrumental assessment of its actual use (cf. e.g. Wittgenstein 1958 [BB]: 56, and 67; PI: §43). Along with this view, I would like to argue that a profitable approach to Kuhn’s mature philosophy consists in reading it through the lens of what I will call a “Wittgensteinian pragmatism.”

- 4 In the following, I will elaborate on these tentative ideas and develop them separately. First, I will explore the issue of incommensurability and/as untranslatability in the late Kuhn (sec. 1). I will therefore say something about Kuhn’s interest in and engagement with Wittgenstein, on the one hand, and pragmatism, on the other, based on the relevant literature available (sec. 2). I will then provide a definition and general outline of what I call “Wittgensteinian pragmatism” (sec. 3). Finally, I will try to show that Kuhn’s late incommensurability thesis is consistent with a pragmatist approach of this sort (sec. 4).

1. Incommensurability and Untranslatability

- 5 Kuhn’s late incommensurability thesis is expounded in a series of papers written in the mid-1980s, where Kuhn presents the core ideas that he intended to include in his unfinished book *The Plurality of Worlds*. In these texts, Kuhn leaves to the side (almost completely) the pivotal notion of *The Structure of Scientific Revolutions* – that is, the concept of a “paradigm” – while further working on the view that was originally linked to this notion, trying to approach it from a different angle. The idea of a “paradigm shift” is in fact re-oriented towards the view that different scientific communities – which may be communities arising from different cultural backgrounds, but also communities that pertain to different historical phases within a culture – work with structured lexicons that may be quite distinct from each other. Accordingly, Kuhn tries to reflect on the phenomena of “change in descriptive language” and the “alteration [...] of the lexicon which one uses” to describe the world, both of which are implied by the development of science (Kuhn 2022: 15). It is at this level that we encounter what

Kuhn previously labelled “*manifestations of incommensurability*.” As Kuhn explains, “because the use of certain words has changed, some of the statements that recur in the texts of an older science cannot be translated in[to] the language of a subsequent science, at least not with the precision required to understand why they were made” (*ibid.*). Although we can grasp what the members of a past community or of a community other than our own are conveying with their statements, it is impossible for us to acquire a complete understanding of them. In order to properly understand what they are saying, we need to share their cultural background and the ontology implied by it. When we translate these statements into our own lexicon, we inevitably change them, even if we use the same words as those found in the original sentence. By transferring these words into another frame of reference, we interpret them differently than their original speakers did. In other words, their meaning changes depending on the cultural framework in which the sentence is uttered.

- 6 What Kuhn tries to argue in his late writings can be summed up by the claim that *incommensurability means untranslatability*. In the second of the three Shearman Memorial Lectures collectively titled *The Presence of Past Science* (1987), Kuhn in fact argues that incommensurability can fruitfully be compared to the experience of a historian who is struggling to understand a conceptually alien past: “Applied to the relation between successive scientific theories, *incommensurability* meant no common lexicon, no set of terms with which all components of both theories could be fully and precisely stated” (Kuhn 2022: 51-2). Borrowing a term used by Quine in his *Word and Object*, Kuhn also says that the word *untranslatable* might better capture what he has in mind than *incommensurable* (*ibid.*: 52). In fact, “incommensurable” stands for the difficulty one encounters “when translating from one language to another but also when translating between earlier and later versions of the same language” (*ibid.*); in both cases, it is impossible to convey all of the information contained in a sentence, for something will always be left out in the process. As Kuhn argues in his unfinished book *The Plurality of Worlds*, a statement made in a new lexicon will always be a different statement than one made in the old lexicon. It doesn’t matter whether we are using the same vocabulary; the only way for us to *understand* the old statement is to learn the incommensurable parts resting at the core of that linguistic expression (cf. *ibid.*: 114). As noted above, it is the *meaning* of the words that changes in different historical or cultural contexts. Thus, for example, the sentence “The sun is a planet” would sound quite different to an ancient Greek than to a modern scientist, because they endorse two distinct cosmologies. Their lexicon is different; therefore, they speak of and conceive of the universe differently. Although modern people may *comprehend* what the Greek scientist is saying, they will never truly *understand* how the other looks at the world (cf. *ibid.*: 62).
- 7 One of the first ideas presented in *The Plurality of Worlds* is “the claim that members of communities must share [...] a *structured kind set* [...] the structure [of which] encodes the ontology of a community: the sort of objects, behaviours, and situations which are exhibited in its world. Incommensurability then becomes a relation between the structures of kind sets, and it greatly constrains the extent to which the kind set of one community can be enriched by borrowing concepts or their names from the incommensurable kind set of another” (*ibid.*: 113-4).² It is at the level of kind sets that incommensurability can be appreciated, for they express how a culture cuts up its world and structures known (we might even say *knowable*) objects.³ Kuhn maintains

that there is a “deep and indissoluble entanglement between the kind terms of a language and the world that users of that language inhabit” (*ibid.*: 180). This world is in fact the product of a process whereby experiences are clustered into a structured lexicon that is both fruitful for practical purposes and perspectival insofar as it depends on and reflects the features of a community. For Kuhn, the language that we use to describe this world is only a tool rooted in a pre-epistemic level which actually gives significance and meaning to our sentences. According to this view, communication involving proper understanding is difficult because “the kind set of a culture, unlike the featural vocabulary which supports it, cannot be expanded to make room for the kinds employed by the other culture” (*ibid.*: 246). While vocabularies can overlap, this is not the case for the kind terms that express the ontology of a culture – that is, how that culture depicts the world. Two separate cultures are therefore incommensurable to the extent that there is an unfillable gap between how they cluster objects into different kinds (cf. *ibid.*: 245).

- 8 Within the picture of incommensurability that Kuhn outlines in his late philosophical remarks, we can stress certain features that connect his view with both Wittgenstein and the pragmatist tradition, namely (a) the idea that each structured lexicon conveys an ontology and evades an epistemic view, and (b) an instrumentalist or conventionalist conception of meaning. Allow me to briefly elaborate on this.
- 9 At the beginning of this paper, I noted that Kuhn claims that “each lexicon makes possible a corresponding form of life within which the truth or falsity of propositions may be both claimed and rationally justified” (RSS: 244). I would like to say that this Wittgensteinian language is used quite aptly in this passage and that it is helpful for appreciating what Kuhn has in mind. In fact, similarly to what we find in famous passages from Wittgenstein’s *Philosophical Investigations* and *On Certainty*, in his late writings Kuhn maintains that each lexicon provides us with a set of kind terms that determines the meaning of the vocabulary we can use to describe the world. In other words, each lexicon defines the boundaries of our world-description and represents the frame of reference of any meaningful discourse about it that we can perform within our community. This view is expressed quite clearly in the Sherman Memorial Lectures, where Kuhn argues, for example, that the terms in which the beliefs of a scientific community are stated “carry the community’s ontology, supplying names for things which its world can and cannot contain” (Kuhn 2022: 47). Thus, the language sets the stage of what can or cannot be meaningfully stated; it determines *what pertains to* our world-description and what remains outside of it. The acquisition of a lexicon is therefore a process that determines how knowledge claims are assessed; better, it is a process that determines what can be counted as “knowledge” (cf. *ibid.*: 48, and 59). The classic issues of normal science and scientific revolutions are reinterpreted accordingly in the late Kuhn: scientists normally commit to a lexicon that provides them a “set of possible worlds, worlds which share natural kinds and therefore share an ontology” (*ibid.*: 70). That lexicon brings with it restrictions on what phenomena can and cannot be (that is, of what is “right” or “wrong,” “true” or “false”); “if nature were later found to violate those restrictions [...] the lexicon itself would be threatened. Elimination of the threat required not simply the substitution of new beliefs for old but alteration in the lexicon with which the prior beliefs were stated” (*ibid.*: 49). Thus, a revolution in science is a substitution in the adopted lexicons. But this amounts to a substitution of a form of life, or, in Wittgensteinian terms, of a world-picture (I will say more on this in

section 3). This is precisely the case, for Kuhn: with the lexicon, the entire possible (i.e. communicable) world is substituted.

- 10 One of the difficulties that Kuhn faces in defending his late view of change in descriptive language has to do with the value ascribed to scientific knowledge. On this, Kuhn explicitly – albeit mildly – endorses a pragmatist view. The broad idea that we find stated, for example, in the paper *Scientific Knowledge as Historical Product* is that a lexicon is “a highly developed tool suitable [...] for description of the world” (*ibid.*: 14). With it, we acquire a taxonomy that we can use in our discourses about the world. But this taxonomy does not refer to a neutral descriptive vocabulary; it is only an instrument that we conventionally adopt for practical purposes and that determines the activities and practical behaviours we are allowed to perform. In fact, Kuhn talks of a “linguistic convention” and a “conventional taxonomy” that cannot be assessed as “right or wrong” but can only be “more effective than another, a better means to a given end” (*ibid.*: 17). The pragmatist contours of this instrumental view are clear. Kuhn’s conventionalism is no sceptical relativism; on the contrary, he is quite clear that value *may* be ascribed to our beliefs, that meaning *may* be attributed to our knowledge claims, but that these evaluations can only be of a pragmatic kind.⁴ This is clearer in the Shearman Memorial Lecture, where Kuhn declares that the pragmatists are right in saying that lexicons are instruments that should be assessed in light of their fruitfulness as means “for achieving specifiable social goals, and the choice between lexicons [...] necessarily depends on such goals” (*ibid.*: 78). Furthermore, he says that “with respect to lexicons [...] the pragmatists were generally right. Lexicons are instruments to be judged by their comparative effectiveness in promoting the ends for which they are put to use. The ‘choice’ between them is interest-relative” (*ibid.*). Each scientific world-description is therefore a set of sentences that serve practical purposes and whose truth-value depends on the frame of reference determined by the structured lexicon in place. In Kuhn’s words (*ibid.*: 71): “Terms like *true* and *false* need function only in the evaluation of the day-to-day choices made within a community that has an ontology of kinds and a corresponding lexicon in place.”
- 11 Lexicons are a prerequisite for the assessment of truth and falsehood; without them, without a background against which to distinguish between true and false, these two terms have no meaning. Accordingly, lexicons cannot be judged as true or false. Insofar as they are the context within which and with reference to which we perform our evaluations, there is no rational basis for assessing their value. Thus, as Kuhn remarks in 1993: “The justification of lexicons or of lexical change can only be pragmatic” (RSS: 244).
- 12 From what has been said thus far, connecting Kuhn’s late views with Wittgenstein’s, on the one hand, and with the pragmatist tradition, on the other, seems like a viable approach. Kuhn’s late incommensurability thesis apparently endorses features from both traditions. In order to say something conclusively on this, however, we must take a step back and investigate the extent to which such a comparison can be made and whether it can actually shed light on Kuhn’s mature philosophy. What I will try to argue in the next sections is not only that this is the case, but that it is through the lens of a view that merges the Wittgensteinian conception of forms of life and world-pictures with the broad pragmatist feature endorsed by Kuhn that Kuhn’s late thought can be profitably interpreted.

2. Kuhn, Wittgenstein, and Pragmatism

- 13 The relationship between Kuhn and the work of the late Wittgenstein, on the one hand, and his relationship with American pragmatism, on the other, has been explored by the literature, albeit scarcely. Very briefly, we can say that there is general agreement that Kuhn was influenced by both traditions and that approaching his thought in their light may be especially beneficial for interpreting his mature philosophy. On this, I would like to endorse the following remark by Vasso Kindi (2017: 597):

Wittgenstein's influence on Kuhn has been very little discussed in the literature. There have been some sporadic references and very few more extensive treatments of the issue (Kindi 1995, also Sharrock & Read 2002). If, however, the Wittgensteinian elements in Kuhn's work were brought to bear on the debates that followed *Structure*, then issues that have been proven highly controversial (and "incriminating" for Kuhn), such as the issue of conceptual incommensurability, would have been dealt with rather differently.

- 14 In her illuminating studies on Kuhn and Wittgenstein, Kindi convincingly shows that Wittgenstein is an important reference – perhaps the most important *philosophical* reference – in *The Structure of Scientific Revolutions*. Apparently, Kuhn's command of Wittgenstein's work was limited: before 1959, he had only read a typescript of the *Blue and Brown Books*, and it is only after having already formulated the basics of *Structure* that he came upon Wittgenstein's *Philosophical Investigations* (cf. Cederbaum 1983: 188; and Kindi 1995: 80). In all likelihood, however, Kuhn would have had the opportunity to discuss important issues of Wittgenstein's late philosophy with Stanley Cavell, a friend of Kuhn's and his colleague at Berkeley, who in the late 1950s was writing a dissertation on Wittgenstein (cf. Cederbaum 1983: 188). Despite Kuhn's lack of direct acquaintance with Wittgenstein's philosophical ideas, Wittgenstein is one of the few names mentioned in *Structure*, and indirect references to core ideas of his late writings are frequent in that text and in other works published by Kuhn in the 1980s (e.g. Kuhn 2012 [SSR]: 45, and 126; Kuhn 2022: 190).⁵
- 15 The main affinity between Wittgenstein and Kuhn that, e.g., Cederbaum and Kindi stress concerns the notions of a paradigm, on the one hand, and language games, on the other. For Cederbaum (1983: 187-9), who was the first to explore this issue, the very concept of "paradigm" is used consistently by both Wittgenstein (e.g. PI: §50) and Kuhn to name concrete examples that permit the solution of certain problems by means of an analogical process. Kindi expanded on Cederbaum's work and provided a more thorough analysis of the relationship between Kuhn and Wittgenstein, defending "the thesis that the theory of meaning on which Kuhn's theory is based is supplied by Wittgenstein's later philosophy" (Kindi 1995: 80). She agrees with Cederbaum that Wittgenstein's and Kuhn's notions of a paradigm "are quite close" based on the idea that "they both function as models and prototypes and they both induce and establish consensus by being followed" (Kindi 2017: 596). But the agreement between the two conceptions is actually more substantial, involving the view of *meaning* that both authors defended. As Kindi argues, interpreting Kuhnian paradigms through the lens of the notion of "language games" helps us to appreciate relevant aspects of the former, namely the fact that paradigms, in Kuhn, operate at the level of practice and that the significance of the concepts adopted in a scientific description of the world are (almost) exclusively determined by the rules that are set by the paradigms themselves. For both Kuhn and Wittgenstein, "paradigms set the stage, open up a space in which things are

supposed to be done in the way exemplified by the paradigm” (Kindi 2012: 103); therefore, it is because of them that we know how to use the words in our propositions meaningfully. The meaning of each word depends on the rule that is at play at any stage of normal science – that is, it depends on the specific paradigm endorsed at the time, and this will change when that extra- or pre-linguistic framework of reference is substituted by another one.

- 16 In fact, paradigms may be interpreted as exhibiting “a mesh of linguistic and non-linguistic processes, that is, processes which, together with language, comprise modes of acting and behaving” (Kindi 1995: 83). Paradigms are therefore partly composed of what is inexpressible, according to Kuhn; “not a unifying point of view but what is implicitly embedded with training” (*ibid.*). A paradigm is a matter of practice – not (just) of theory. It is something we acquire through training and education, through both linguistic and non-linguistic activities (e.g. ostensive definitions, laws, models for application, and so on; cf. SSR: 46-7). In Wittgensteinian terms, it is a “form of life” that binds scientists together, something on which they agree as a pre-requisite for research that can be shared, communicated, and ascribed legitimacy and significance. Kindi (1995: 84ff.) aptly refers to what Wittgenstein says in *On Certainty* (OC: §225, and 411) about the “nest of propositions” that forms the basis of actions. It is against the background provided by these propositions that questions are raised and problems are posed and solved – quite similarly to what can be said of Kuhnian paradigms. As much as they are forms of life and language games, they are “ungrounded ways of acting” (OC: 110; cf. SSR: 36ff.), representing the frame of reference of the very distinction between true and false (cf. OC: 94). Also – and consequently – Kuhnian paradigms provide the context within which each word acquires meaning. For the late Wittgenstein, it is famously the *use* of a word that is significant, that is, its employment or application in linguistic activities (cf. PI: §21, 23, and 421). Language games are indeed processes of using words that allow for communication among practitioners (PI: §7), and paradigms, in Kuhn, provide us with the rules for working consistently with specific concepts (SSR: 11). Within this picture, a proper understanding is only possible between those who are playing the same language game, and translation from one practiced language to another that belongs to a different form of life is at least problematic – if not impossible (cf. Kindi 1995: 86). Thus, incommensurability may be equated to unintelligibility or – as suggested above – untranslatability.⁶
- 17 Based on what has been explored in the previous section, it is evident that Kindi’s assessment of the similarities between Kuhn’s epistemology in SSR and Wittgenstein’s late philosophy can be extended to Kuhn’s late incommensurability thesis. I will return to this in a moment. Before dealing with it, I would like to say something on the other issue that I believe is relevant to addressing Kuhn’s mature philosophy, namely pragmatism.
- 18 The relationship between Kuhn and pragmatism has scarcely been studied in the relevant literature. Based on what Kuhn writes in the third Shearman Lecture (Kuhn 2022: 78), we can argue that there may be a link connecting his views to the American pragmatist tradition, but it is not an easy task to connect his ideas directly to any pragmatist in particular, given that Kuhn never explicitly recognized this tradition as having a formative influence on him.⁷ An interesting approach to this issue is provided by Bojana Mladenović in her 2017 book *Kuhn’s Legacy*, which seems to be the only study expressly devoted to that topic – at least thus far. There (2017: 168), Mladenović argues

that “when tracing philosophical lineages, we should situate Kuhn on a branch of American pragmatism.” Although “he never even mentioned the philosophical works of Peirce, James, or Dewey,” Mladenović maintains that “Kuhn’s epistemology not only shows striking similarities to some distinctive and crucial aspects of their work but is also *structurally* a pragmatic epistemology” (*ibid.*). To defend this idea, she draws a series of parallels between Kuhn’s view and the conceptions of classic pragmatists, reconstructing the intellectual lineage from Peirce to Kuhn.

- 19 Among the more interesting things she stresses – or at least the most interesting for the purposes of this paper – is the idea that “Kuhn situates his epistemological project within the bounds of scientific inquiry, the existence and nature of which he never problematizes from an external, sceptical point of view. [Like Peirce’s,] his epistemology starts in the middle of inquiry and does not seek to understand its ultimate foundation” (*ibid.*: 177. Cf. also: 118).⁸ An interest in scientific research as it is actually practiced and the view that justification and meaning can only be assessed within the boundaries of that practice are important pragmatist features of Kuhn’s epistemology.⁹ His focus is in fact primarily on how science is structured in practices that allow us to manipulate and change the world, with no interest in the sort of knowledge that aims at increasingly accurate theoretical representations of the world. In *Structure*, Kuhn conceives of the scientific enterprise as a communication process that groups people with the same sets of beliefs – or better, of certainties (i.e. paradigms or lexicons).¹⁰ The justification of these sets is neither rational nor irrational; we might say that it is rather *a*-rational, provided that the criteria for determining what is “rational” also depends on the belief system endorsed by the group of people. As we have seen, as late as 1993 Kuhn argued that “the justification of lexicons or of lexical change can only be pragmatic” (RSS: 244), based on how effectively the adopted lexicon “promot[es] the end for which [it is] put to use” and allows us to achieve specific “social goals” (Kuhn 2022: 78).
- 20 Thus, at the core of Kuhn’s theory of meaning we do find a pragmatic instrumentalism and relativism. Insofar as a lexicon is a frame of reference for what we consistently say in our statements, one that arises not from a theoretical choice but from a practical one, for Kuhn it is impossible to justify the significance of our words on an essentialist basis. The words in our sentences have meaning because they have a *function*; they have meaning because they are *used in fruitful communication*, for example, and not because they mirror nature more adequately than other words. This, I think, is the broad pragmatist feature that we can ascribe to Kuhn’s mature epistemology. As a matter of fact, this is also the broad pragmatist feature that can be ascribed to the late Wittgenstein, as I will attempt to show in the next section.

3. Wittgensteinian Pragmatism

- 21 In this paper, I use the term “Wittgensteinian pragmatism” to describe the broad approach to the issue of meaning as a matter of *practice* rather than mere theory that can be found in Wittgenstein’s late work (PI, BB and OC) and that I think we may consistently ascribe to Kuhn’s mature philosophy. In his observations on language-games, forms of life, and world-pictures, Wittgenstein famously maintains that the meaning of our words lacks an essentialist foundation and can only be justified instrumentally, based on their *actual use* in communication processes (cf. e.g. BB: 67; PI:

§569). For him, meaning is something that we attribute to words; it does not depend on the adequacy of each word to convey the object it denotes (BB: 27, 28, and 69. Cf. also OC: §191). Therefore, we should conceive of the meaning of a word only as “a kind of employment of it” (OC: §61) rather than a feature that can be appreciated in purely theoretical or metaphysical terms.

- 22 Quite relevant to assessing Wittgenstein’s late pragmatist attitude towards language – but also to comparing his view with Kuhn’s – is the notion of a “world-picture” (*Weltbild*), which can be found, e.g., in *On Certainty*: as is well known, Wittgenstein uses this term to refer to the “substratum of all my enquiring and asserting” (OC: §162) – that is, the background of our evaluations and actions, of our epistemic and practical behaviour.¹¹ A world-picture is the “matter-of course foundation” of how we look at the world and practically engage it (OC: §167), “the conceptual environment within which we live” and which “provides the criteria of correctness” for our judgements (Boncompagni 2016: 116-7; cf. also Kober 2017: 450, 453-4). It is a neutral – i.e. neither true nor false – framework of reference for our knowledge claims, the realm of *certainty*, which Wittgenstein contrasts with *knowledge* (cf. OC: §205). At the same time, however, each world-picture has its own origin; that is, the “inherited background against which I distinguish between true and false” (OC: §94) must be the product of a natural, historical, or cultural development.
- 23 In a 2017 paper, Michael Kober argued that for Wittgenstein “the notion of world picture describes a familiar cultural or anthropological phenomenon: the intuitive, practical (cf. OC: §103, 167; PI: §129) rather than discursive sharing of views exhibited in customs or institutions somehow overlapping, supporting, or supplementing each other (OC: §102, 275, 281, 298)” (Kober 2017: 450-1). Kober further observes that “a world-picture serves as a basis, a foundation (*Grundlage*, OC: §167) or a ‘point of departure’ (OC: §105) of a community’s looking at the world, though it contains both certainties and knowledge claims resting on them” (Kober 2017: 450). Kober helps us to better appreciate the notion of a “form of life,” which is related to Wittgenstein’s reflection on language insofar as the latter argues that “the *speaking* of language is part of an activity, or of a form of life” (PI: §23. Cf. also PI: §19). As Kober remarks (2017: 449-50), for Wittgenstein, “forms of life consist of a plurality of language-games. They are not related to individual performers, but require a community sharing practices, customs, uses, institutions. [...] The notion of a form of life describes, or labels, the setting in which language-games are practiced, i.e., the concept of a practice or a language-game has to be linked with the concept of a community.” Finally, Kober (2017: 449) deals with Wittgenstein’s conception of certainty by focusing on its groundedness in shared practices and thus its relation to “a community or a form of life whose members are engaged in these practices.” For Kober (*ibid.*: 443), in the notes in *On Certainty* Wittgenstein aims to explore “the epistemic foundations of our practices” and to *contextualize* “our knowledge and our certainty within our practices.” Therefore, certainty should be seen not as a strict indubitability but rather as “what is [...] not doubted within ongoing acting” (*ibid.*). “Certainties,” Kober continues, “induce you to follow them, if you want to participate in certain practices of one community or another – that is, they determine your acting if you want to communicate with others” (*ibid.*: 458-9).¹² In the next section, I will use these definitions of the mutually related notions of a world-picture, language-games, forms of life, and certainty¹³ as a reference for my concluding remarks on Kuhn’s view of lexicons. However, the alignment of

Wittgenstein's conception of a form of life as the basis of a communitarian understanding and acting and Kuhn's view of a structured lexicon as the background of shared meanings and, most importantly, of normal scientific activity should already be evident. Before returning to this view, allow me to add just a few considerations that will be relevant to further appreciating this alignment and to outlining the pragmatist feature that may be ascribed to both Wittgenstein's late approach to language and Kuhn's mature philosophy.

- 24 Based on Kober's paper, it can be argued that Wittgenstein defended a form of anti-essentialism about knowledge, according to which it is nonsense to search for the meaning of the words adopted in our world-description beyond the boundaries of our practical experience – i.e. beyond the boundaries of our form of life (on this cf. Haak 1982: 170). It is precisely this “emphasis on the primacy of practice” that, for Putnam (1995: 52), “Wittgenstein [...] shares with pragmatism [...] even if [he] was not in the strict sense a ‘pragmatist’.”¹⁴ Commenting on this, David Bakhurst and Cheryl Misak observe that there is indeed a sense in which we may agree with Putnam, given that Wittgenstein invites us to see meaning in its “relation to human activity” and points out that a consistent explanation of meaning “finds its terminus in an appeal to practice – to custom, traditions, and forms of life” (Bakhurst & Misak 2017: 733). Quite interestingly given our purposes here, they also argue that “Wittgenstein and the pragmatists are united” in defending the view that “we should think of ideas, concepts, beliefs, and theories, not on the model of pictorial representations of reality, but as tools or instruments we deploy in our engagement with the world” (*ibid.*).
- 25 The pragmatist feature that may be ascribed to Wittgenstein was also stressed by Sami Pihlström in a 2012 paper. For Pihlström (2012a: §22), pragmatism should be seen first and foremost as an attempt to focus on the humanly contextualized world-representation, which is the only one we can develop. We look at the world from our human standpoint and pronounce our judgements accordingly; therefore, each judgement is value-laden, for it depends on the individual (not necessarily subjective, but also social, cultural, etc.) perspective that represents its frame of reference. Therefore, things have no meaning in themselves, independently of our judgement activity; there is no hidden essence which we might grasp, and the only value we can attribute to states of affairs is a human value that can be assessed only within the boundaries of our inherited background. With this definition of pragmatism in mind, Pihlström (*ibid.*: §7) finds it “easy to suggest at a general level that Wittgenstein provides us with a ‘pragmatist’ picture of human language-use and meaning,” for his “later philosophy generally can be read as an attempt to show that it is only against the background of our human form(s) of life, our habits of doing various things together in common environments, that meanings are possible.” This pragmatist point, Pihlström continues, “is highlighted by the fact that [...] the notion of language [that appears in Wittgenstein] must be construed [...] as a genuine human practice within the natural world” and that “the possibility of language and meaning is grounded in [...] habits of action whose radical contingency and continuous historical development are among their key features” (*ibid.*: §9 and 39). Finally, Pihlström (*ibid.*: §39) stresses that Wittgenstein leaves no room for a “higher standpoint for us to adopt than the humanly accessible perspectives internal to our language-games,” an observation which allows us to further compare Wittgenstein's view with Kuhn's and to ascribe to both authors the pragmatist commitment outlined thus far.

4. Lexicons as Forms of Life

- 26 With this broad pragmatist approach in place, and assuming that the influence of the late Wittgenstein on Kuhn is no longer in question, I can finally return to the view of incommensurability as untranslatability explored in section 1. As I will argue, almost all of the features that pertain to Wittgenstein's notion of a form of life mentioned in the previous section – including, of course, the pragmatist one – may be consistently ascribed to Kuhnian lexicons. Insofar as Kuhn relates incommensurability to lexicons that determine the ontology of a scientific community (that is, of the world that each scientific community is allowed to meaningfully describe and work on), it is possible to argue that his late view of the issue can be fruitfully interpreted in the light of what I have called a Wittgensteinian pragmatism.
- 27 All the relevant elements that allow us to defend this idea are clearly stated in the passage quoted in my introductory remarks (cf. RSS: 244): lexicons are genuinely conceived of by Kuhn as forms of life, insofar as they are the background against which we distinguish between true and false, and their justification can only be pragmatic, based on their efficiency as tools for achieving practical goals. We find interesting thoughts on this in a 1986 paper where Kuhn deals with the issue of incommensurability as untranslatability and where he claims that “to possess a lexicon, a structured vocabulary, is to have access to the varied set of worlds which that lexicon can be used to describe. Different lexicons – those of different cultures or of different historical periods, for example – give access to different sets of possible worlds, largely but never entirely overlapping” (RSS: 61). As noted above, it is this incomplete overlapping of lexicons, i.e. worlds, that thwarts understanding between different scientific communities. Furthermore, Kuhn observes that his remarks “provide entrée to a theory of meaning” according to which “knowing what a word means is knowing how to use it for communication with other members of the language community within which it is current” (RSS: 62). Consistently with Wittgensteinian pragmatism, Kuhn maintains that the meaning of a world-picture arising from a lexicon is determined by the use of that lexicon in an actual communication. Also relevant for comparison with Wittgenstein's view is the fact that in the 1986 paper, Kuhn stresses the cultural and historical relativism that should be ascribed to any lexicon that is in place and that is destined to change, thus determining the alteration of the world within which a scientist works.¹⁵
- 28 We can expand on this with reference to other Kuhnian texts from the late 1980s. In *Scientific Knowledge as Historical Product*, for example, Kuhn uses the notion of a “form of life” to refer to the set of “knowledge claims of [a] community [that] a scientist *must* accept, for they are constitutive of the community's practice [...] of an enduring tribe” (Kuhn 2022: 10). This (pragmatist) emphasis on the primacy of practice is not new for Kuhn, of course, but it is interesting to see that he explicitly ascribes it to the Wittgensteinian concept in this passage.¹⁶ A few pages below, Kuhn also defends a mildly conventionalist view of language, stressing that “no linguistic convention can be right or wrong [...] but, for a specified purpose, one convention can be more effective than another, a better means for a given end” (Kuhn 2022: 17; on this, see also *ibid.*: 264). The idea that the language game played within a community has a *neutral* value – i.e. is neither true (or right) nor false (or wrong) – is an important aspect of

Wittgenstein's late epistemology, as shown above (cf. e.g. PI: §241, and 569). For Wittgenstein, a form of life or world-picture represents the frame of reference of our valuational claims, the background against which it is possible to distinguish between right and wrong. As a matter of fact, Kuhn ascribes the same function to his lexicons, placing them at the basis of any meaningful scientific communication. What *can* or *cannot* be consistently communicated in a scientific discourse is in fact determined by the lexicon that has been adopted, that is, by the linguistic conventions upon which a scientific community agrees.

- 29 This view and its connection to a pragmatic account of meaning is also defended in the 1987 Shearman Memorial Lecture, where Kuhn argues that “a lexicon cannot properly be labelled true or false,” given that “its structure [...] is a matter of social or linguistic fact. [...] Instead, one lexicon is a better or worse instrument than another for achieving specifiable social goals, and the choice between lexicons [...] necessarily depends on those goals” (Kuhn 2022: 78). In the first section of this paper, I have already mentioned that Kuhn ascribes this instrumentalist view to the Pragmatist tradition; in fact, he argues that “with respect to lexicons [...] the pragmatists are generally right. Lexicons are instruments to be judged by their comparative effectiveness in promoting the ends for which they are put to use” (*ibid.*). In addition to this, the view that the world and the community *interact through lexicons* has significant ontological consequences. For the late Kuhn, in fact, “essential parts of a community’s knowledge of nature are embodied in the structure of the lexicon which members of the community share”; hence “to acquire a lexicon [...] is to learn things about the world” (*ibid.*: 48; cf. also *ibid.*: 180). As noted above, what a scientific community can or cannot consistently say of the world, what kinds of phenomena it can or cannot encounter in that world, is determined by the set of linguistic tools acquired within that community’s cultural and historical context. Thus, the structured lexicon actually *determines* what the world *that can be worked on and meaningfully communicated* is, for that community, and any change in the lexicon implies changes in both the world and the community (cf. *ibid.*: 80).
- 30 As a final remark, based on an interpretation of lexicons as forms of life or world-pictures, I would like to stress the continuity that is evident between Kuhn’s late incommensurability thesis and Wittgensteinian pragmatism. As we have seen, for Kuhn a structured lexicon is the background of our evaluations and actions, of our epistemic and practical behaviour – just like a Wittgensteinian world-picture. Much like it, a structured lexicon is the foundation of how scientists look at the world and practically engage it; it is the conceptual environment acquired through education and training within which they work, and which provides the criteria of correctness and – quite importantly – of *meaningfulness* for their judgements (cf. OC: §167). This allows us to see that both Kuhn and Wittgenstein approached the issue of language with a primary interest in the practical plane of its actual use. As Pihlström remarks (2012a: §39), for Wittgenstein “the possibility of language and meaning is grounded in [...] habits of action whose radical contingency and continuous historical development are among their key features.” The very same view can be applied to Kuhn, as I have tried to show: in fact, the structured lexicons that he describes in his late works are contexts of consistent (scientific) activity that are both culturally and historically determined. Furthermore, Kuhn conceives of structured lexicons as an important tool that scientists deploy in their engagement with the world, a view that he stressed repeatedly, thus

reiterating the broad pragmatist attitude that characterizes his mature philosophy and whose roots, in my opinion, are firmly Wittgensteinian.

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NOTES

1. However, Kuhn also allows for communication within different communities, as well as a basic understanding of new lexical structures. In fact, it is perfectly possible for us to be proficient in more than one language, that is to say, to master a lexical structure which is different from the one that we have acquired while learning our first language, but we are likely to sometimes experience difficulties of translation. On this, cf. Bojana Mladenović's considerations in her introduction to Kuhn (2022: xxxii).
2. Part II of Kuhn's *The Plurality of Worlds* was supposed to deal thoroughly with the origin of kind terms and the ontology implied by them.
3. Interestingly, on this point Kuhn links his late approach to his previous work by remarking that "the notion of paradigm" could be interpreted as "a fundamental tool presupposed by the members of a group in their dealings with each other and with their world, [which] limits what those dealings can accomplish. Here [in *The Plurality of Worlds*], that tool is the arrangement of kind terms that I am calling a *structured kind set*" (Kuhn 2022: 181).
4. Allow me to further elaborate what I would like to defend, here. Of course, I am not arguing that conventionalism amounts to pragmatism, in Kuhn. On the other hand, based on Kuhn's focus on the practical, i.e., operational fruitfulness of the linguistic conventions, it is possible to say that a pragmatist feature can be ascribed to his conventionalism, insofar as it allows us to avoid the sceptical relativism that follows from the view that no objective value can be assigned to our beliefs on a purely theoretical basis.
5. As Read (2012: 32) argues, it is also important to recall that Wittgenstein's epistemology belonged to the general intellectual *Zeitgeist* of Kuhn's time. Thus, it is likely that Kuhn learned something on the issue from the discussions he participated in and the texts he studied.

6. Commenting on this issue, Rupert Read (2012: 63) observes that the “kind of change in grammar [defended by Wittgenstein in OC: §94-8] is absolutely central to what Kuhn means by ‘incommensurability.’” Read also maintains that it is helpful to point out, from a Wittgensteinian perspective, “the considerable extent to which what Kuhn is really talking about is, roughly, ways in which changes in paradigms engage in and can even be said to constitute the reconfiguration of grammar. Language is not something that floats free, but something which is thoroughly – utterly – interwoven with activities. ‘Conceptual change’ is integral to change in ways of organising activities: What words can mean depends on their connection to, and part in, our activities” (Reed 2012: 62; on this cf. also Sharrock & Read 2002: 161-3).

7. On a general level, Sami Pihlström (2012b: 82) observes that “no obvious historical lines of influence can be traced from the classical pragmatists to Kuhn. However, Kuhn can [...] be interpreted [...] as joining, either explicitly or implicitly [...] at least the quasi-pragmatist ideas made famous by thinkers like Ludwig Wittgenstein and C. I. Lewis [...] concerning the *historically relative ‘a priori’*. Kuhnian paradigms (or lexicons) play this reconceptualised a priori role as *enabling* (making possible) scientific representation, and thereby also enabling scientific objects and truths to emerge from scientific practices and theorizing.”

8. Incidentally, it is possible to appreciate the consistency between Peirce and Wittgenstein on the idea of a “given” experience’s constituting the background of our acting, the origin of which it is not important – or even possible – to investigate further. In *On Certainty* (OC: §559), Wittgenstein famously observes that “the language-game [...] is not based on grounds. [...] It is there – like our life.” On this, see Boncompagni (2016: 183ff.).

9. For Mladenović, Kuhn’s pragmatist turn can especially be appreciated in his mature work. She conclusively remarks that Kuhn’s “mature epistemology bears the marks of Peirce’s communitarian, fallibilist, and open-ended understanding of inquiry; of James’s epistemic justification of momentous, forced choice between two live hypotheses; and of Dewey’s emphasis on the complexity of our reasoning owing to the heterogeneity of the values and standards that we perceive as relevant in particular problem situations” (Mladenović 2017: 192).

10. Joseph Rouse (2003: 108) aptly remarks that “scientists *use* paradigms rather than believing them,” thus leaving aside anything involving evaluation. In believing something *to be true*, for example, we already have a frame of reference in mind, but that frame of reference itself *is* actually our paradigm or lexicon. “Certainty” is famously the name that Wittgenstein gives to this background of our “knowledge.” On this, see also Mladenović (2017: 118 and 180-1); and Kuhn (RSS: 298-300).

11. On Wittgenstein’s “world-picture,” cf. especially Hamilton 2014.

12. Following Cavell 1989, Daniel Whiting argues that Wittgenstein seems to view language-games as depending on “a whole culture” (Wittgenstein 1966 [LC]: 8), insofar as they are an expression of viewpoints which “reflect their participants’ sense for what is or is not important” (Whiting 2017: 424) and, most significantly, can change depending on the framework in which they are based.

13. As is well known, Wittgenstein conceives of certainties “as a form of life” (OC: 358) and as “something that lies beyond being justified or unjustified,” like a world-picture (OC: 359).

14. The question of the relation between Wittgenstein and pragmatism is an interesting but delicate one, as shown by the scholarship. In this section, I will try to explore this relation by dealing with a feature which may be ascribed to pragmatism, without directly comparing Wittgenstein to classic pragmatist thinkers such as Charles S. Peirce, William James, and John Dewey. On this, I have little to add to the existing literature, including, e.g., Haack 1982; Goodman 1998, and 2002; Backhurst & Misak 2017; and Boncompagni 2016, and 2019. The *European Journal of Pragmatism and American Philosophy* (2012, volume IV, issue 2) hosted a symposium on *Wittgenstein and Pragmatism*.

15. In the 1986 paper, Kuhn focuses on how words are connected with each other, claiming that it is not so relevant if they actually allow us to “know something that attaches to the world by itself” (RSS: 62). On this, he further argues that “words do not [...] have meaning individually, but only through their associations with other words within a semantic field. If the use of an individual term changes, then the use of the terms associated with it normally changes as well” (RSS: 63). This view is paralleled in a series of remarks by Wittgenstein on language and meaning. In *On Certainty*, for example, Wittgenstein writes that “when language-games change, then there is a change of concepts, and with the concepts the meanings of the words change” (OC: §65; cf. also BB: 56, 67, and 69). Elsewhere, he also argues that “an education quite different from ours might be the foundation of quite different concepts” (Wittgenstein 1967 [Z]: 387) and that “an entirely different game is played in different ages” (LC: 8) – the very type of statement that can be ascribed to Kuhn.

16. A few pages below, Kuhn writes of “a community’s way of life” (RSS: 11; my emphasis). This may be of some interest, for Wittgenstein’s preferred translation of “*Lebensform*” was, apparently, “way of life” instead of “form of life.” On this, cf. Boncompagni (2016: 182).

ABSTRACTS

This paper explores Thomas Kuhn’s mature conception of incommensurable theories as collective structured lexicons that are not mutually translatable. As will be argued, his view on this issue can profitably be approached in the light of the broad pragmatist attitude that one finds at the core of Wittgenstein’s late philosophy of language, which can also consistently be ascribed to Kuhn.

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