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A plea for structural monism*

Esa Itkonen[1]

Abstract

This article defends the thesis of structural monism, according to which all sciences share the same fundamental bipartite structure, analogous to that of human belief. Every belief—and, by extension, every science—comprises two components: a conceptual, non-empirical, and normative component (A), and an empirical, causal, and descriptive component (B). The former defines the categories, norms, or possibilities that render the latter intelligible, while the latter necessarily presupposes the former. On the basis of this distinction, the article examines a wide range of disciplines—linguistics, psychology, physics, chemistry, biology, sociology, evolutionary theory, logic, and philosophy—in order to show that each of them manifests, in different ways, the same structural opposition between conceptual frameworks and empirical phenomena. The author highlights a central asymmetry: it is possible to study component A independently of B, but not vice versa. Particular attention is paid to linguistics, where the langue/parole distinction clearly exemplifies structural monism, as well as to physics and the philosophy of science, especially through the notions of the a priori, theoretical frameworks, and norms of justification.

Keywords : structural monism, philosophy of science, conceptual framework empirical phenomena, interdisciplinarity

Résumé

Cet article défend la thèse du monisme structurel, selon laquelle toutes les sciences partagent une même structure bipartite fondamentale, analogue à celle de la croyance humaine. Toute croyance — et, par extension, toute science — comporte deux composantes : une composante conceptuelle, non empirique et normative (A), et une composante empirique, causale et descriptive (B). La première définit les catégories, normes ou possibilités qui rendent la seconde intelligible, tandis que la seconde présuppose nécessairement la première. À partir de cette distinction, nous examinons un large éventail de disciplines — linguistique, psychologie, physique, chimie, biologie, sociologie, théorie de l'évolution, logique et philosophie — afin de montrer que chacune d'elles manifeste, sous des formes diverses, la même opposition structurelle entre cadre conceptuel et phénomènes empiriques. L'auteur met en évidence une asymétrie centrale : il est possible d'étudier la composante A indépendamment de B, mais non l'inverse. L'article accorde une attention particulière à la linguistique, où la distinction langue/parole illustre clairement le monisme structurel, ainsi qu'à la physique et à la philosophie des sciences, notamment à travers les notions d'a priori, de cadres théoriques et de normes de justification.

Mots-clés : monisme structurel, philosophie des sciences, cadre conceptuel, phénomènes empiriques, interdisciplinarité

[1] University of Turku (Finland). E-mail : esamattiitkonen@gmail.com.

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1. Introduction

'Methodological monism' (a. k. a. positivism) is a familiar notion. It is the idea that natural sciences, epitomized by Newtonian physics, provide the only legitimate model for scientific data-collection and explanation. This line of thinking may have lost adherents in recent years and decades, but it is still alive, in spite of such shortcomings as have often been pointed out (recently e.g. in Itkonen 2019a: Sect. 2; 2020: Sect. 2).

Here I shall argue for a different kind of monism, namely structural monism. Its point of departure is quite simply the notion of belief (or 'thought'). Every belief has two parts, which can roughly be characterized as 'concept' (= A) and 'exemplification' (= B). A is impersonal while B is personal; A is timeless while B occurs in time; A participates in logical/conceptual relations while B participates in associative/causal relations; and so on. Let us illustrate this idea by means of three representative quotations:

> In a sense, these thoughts are no doubt themselves events happening in time; but since the only way in which the historian can discern them is by re-thinking them for himself, there is another sense, and one very important for the historian, in which they are not in time at all (Collingwood 1946: 217).
>
> Every belief must have both a history and a logic; for they are concerned with different elements of the belief. 'Believe' is a psychological verb and the history of a belief is therefore a psychological story; what is believed, a proposition, is a logical entity, having only logical properties and relations, which are non-temporal (Edgley 1978/1965: 24; emphasis added).
>
> Primarily, truth and falsity belongs [*sic*] to the content of beliefs, judgements, and statements, i.e. that which is believed, judged, or stated … [as opposed to] the phenomena of belief, judgement, and statement which are tied to persons or subjects. … It is for speaking about these 'that which' -things that philosophers may find it useful to employ the term 'proposition' (von Wright 1984: 14-15; original emphasis).

Let us consider the belief that Paris is the capital of France. A Frenchman and a Finn are likely to experience this belief somewhat differently, and some sort of difference is also likely to exist between those Finns who have visited Paris and those who have not. Still, what all these people believe, each in his/her own way, is *ex hypothesi* one and the same thing, expressed by the sentence *Paris is the capital of France*. This is the concept/proposition of the belief at issue.

It is the thesis of structural monism that every science exemplifies the same bipartite structure, which is ultimately that of a belief (or thought). This amounts to a vast **generalization**. To put it in different but still equivalent terms (cf. Itkonen 2005: 1.4), what we have here is an (interdisciplinary) **analogy** that originates in pre-scientific mental life and then goes on so as to encompass the entire spectrum of sciences. This analogy has been formulated by Givón (2020: 3) as follows: "The gradual acquisition of knowledge by an organized community of scientists mirrors the acquisition of knowledge by the cognizing organism." The emphasis may vary, but the general idea is the same.

As a consequence, and more elaborately, every science has two components such that A is the conceptual precondition for B in the sense of investigating the (non-empirical) **categorization** or **classification** which applies to (empirical) phenomena investigated by B. The A vs. B distinction is established in the 'context of justification', which follows the 'context of discovery', where the distinction is learned, to begin with.

The thesis of structural monism may not be surprising in itself, considering that all sciences quite uncontroversially qualify as belief-systems. But in this respect, there are also interesting **differences**

between individual sciences. In some sciences, their bipartite nature has been fully acknowledged or sanctioned in the form of (approximately) corresponding distinctions both between university departments and between professional journals. In other sciences, by contrast, their bipartite nature may either remain implicit or be acknowledged only by a minority. It is an intriguing task to explore the **causes** of these differences: Are they due to intrinsic differences among the data of the respective sciences? Or are they just due to historical accidents?

2. Linguistics

Linguistics provides the best *prima facie* justification for structural monism. It is reasonably well understood that here A and B address distinct questions, in such a way that asking the B-question **presupposes** at least a preliminary answer to the A-question. For instance: A = **What** is the relative clause in a language L? vs. B = **How** is it produced and understood, and **how** has it changed? Accordingly, A = 'autonomous' (non-causal) linguistics vs. B = 'non-autonomous' (causal) linguistics, exemplified by psycholinguistics, sociolinguistics, and diachronic linguistics. The notions of A vs. B linguistics, as well as their mutual relationship, have been documented at some length in Itkonen (1978) and (1983).

As long as the child is learning L, s/he primarily endorses the B-attitude (= s/he accumulates observations and makes generalizations about what s/he has observed), but as soon as s/he masters L, s/he is bound to primarily endorse the A-attitude (= s/he is competent to evaluate results of observations as either correct or incorrect): L, having first been *a posteriori*, becomes *a priori*, in the same sense in which a norm – once it has been internalized – comes to be presupposed by its exemplifications (cf. Mäkilähde et al. 2019). Of course, endorsing the A-attitude does not entail giving up the B-attitude: one can always learn new details about one's own language.

Learning L and mastering L correspond to the contexts of discovery and of justification. At the level of data, the A vs. B distinction coincides with the *langue* vs. *parole* distinction: "La langue est un principe de classification" (de Saussure 1962/1916: 25). In recent years and decades, the *langue* vs. *parole* distinction has been widely criticized, but for wrong reasons. Those who deny this distinction *eo ipso* deny the existence of phonemes, syllables, morphemes, words, etc. Why? Because only such entities qualify as phonemes, syllables, morphemes, words, etc. which have been **classified** as such. But if there is no *langue*, there is no (principle of) classsification, which entails that there are no phonemes, syllables, morphemes, words, etc.

There is the following **asymmetry** between A and B: It is possible to investigate e.g. relative clauses [= A] without any knowledge of how they are produced or understood [= B], but it is impossible to investigate the production or understanding of relative clauses [= B] without any knowledge of what relative clauses are [= A]. Hence, B presupposes A, but not vice versa. Notice that this asymmetry obtains at the level of description, and **not** of data: taken as two wholes, A-data (= *langue*) and B-data (= *parole*) certainly presuppose each other.

3. Psychology

In psychology, the A vs. B distinction is not generally acknowledged, with important exceptions, such as Franz Brentano (1838-1917) and Edmund Husserl (1859-1938).

For Brentano, A = 'descriptive or phenomenological psychology' vs. B = 'explanatory or genetic psychology': "Brentano was primarily concerned with **classifying** and **categorizing** modes of experience and types of consciousness" (Roche 1973: 2; emphasis added).

For Husserl, A = 'phenomenological psychology' vs. B = 'empirical psychology':

> Hence Husserl argued that only a full-fledged phenomenology that had investigated the essential structures of the phenomena in their variety could make sense of the experimental findings. Empirical psychology, then, **presupposes** phenomenological psychology, a psychology that works out the fundamental distinctions of the psychological phenomena … (Spiegelberg 1967: 225-226; emphasis added).

Examples of A-type psychology:

(i) A conscious experience is always an experience **of** something (= This summarizes the idea of intentionality or 'directedness' of any kind of experience, the very the cornerstone of phenomenology).

(ii) Whatever is perceived is perceived as mediated by the 'figure vs. ground' contrast.

(iii) Whatever is seen, is always seen as having some kind of extension in two or three dimensions.

(iv) "An act of will is a want which we have arrived at by coming to a descision and which we think we are able to carry out" (Brentano quoted by Chisholm 1967: 4).

(v) Although von Wright's (1963: Ch. III) taxonomy of actions appertains to philosophical logic, it is clearly related to item (i): 'the doing of *p'*, 'the destroying of *p'*, 'the preserving of *p'*, 'the suppression of *p'*, as well as the corresponding forbearances.

(vi) Other possible examples from the domain of philosophical logic include possible-worlds semantics of knowledge, belief, perception, memory, etc.

4. Physics

In classical physics, the A vs. B distinction has been fully acknowledged in Germany, but not so much elsewhere. A = 'protophysics' (invented by Paul Lorenzen in the late 1950's) vs. B = Newtonian mechanics. A is a general theory of measurement, divided into the increasingly complex subdomains of measuring space, time, and mass (= geometry, chronometry, and 'hylometry') (cf. Böhme, ed. 1976). Instead of investigating actual physical events, protophysics investigates the concept 'possible physical event', as defined by the threefold **norms** of measurement: "Die idealen Forderungen, durch die die vollkommenen Messungen bestimmt werden, sind Sätze die als Axiomen für die protophysicalische Theorien dienen können" (Lorenzen 1969: 150).

There is a perfect analogy between linguistics and classical physics, as here defined: A = **possible** (sentence or physical event) vs. B = **actual** (sentence or physical event).

Relativity Theory may have superseded Newtonian mechanics, which nevertheless remains able to account for its own realm of phenomena. Therefore protophysics, *qua* its aprioristic component, also retains its intrinsic value (cf. Janich 1976: 302-314).

But, in addition, the A vs. B distinction seems to apply to Relativity Theory just as well as it applies to Newtonian mechanics. At least, as much is suggested by Hilary Putnam's (2013) spoken remarks

on the book *Relativity Theory and A Priori*, published in 1921 by his former teacher Hans Reichenbach:

> Reichenbach made a distinction between framework principles in science [= A] and ordinary empirical statements [= B], which I had to rediscover myself many years later… Every observation report [= B] in the age of Newtonian physics was couched in the vocabulary [= A] of Newtonian physics. … But Reichenbach said, yes, Relativity Theory and Newtonian physics have different framework principles, but they agree on certain things, for instance, they agree on what the telescope does. … The idea is that not all physical statements follow on a par, some of them constitute the very lenses [= A] through which you see the physical phenomena [= B]. This is a Kantian idea ...

Because Putnam regards the A vs. B distinction as a "Kantian idea", he also interprets the A-components as one kind of *a priori* vis-à-vis the rest of physics (Newtonian or Einsteinian). The same general dichotomy is suggested by the title of Kambartel (1976). For us, however, it is enough to regard the following expressions as synonymous: 'X is a precondition for Y' and 'X is *a priori* vis-à-vis Y', without having to take the latter expression in its exact Kantian sense.

Actually, Putnam makes two distinct claims here: First, there is (the equivalent of) the A vs. B distinction. Second, and contrary to Kuhn's (1962) position on scientific revolutions, it is not the case that all exemplifications of observation- language are irretrievably 'theory-laden'.

The analogy between psychology and (Newtonian) physics was clearly grasped by Husserl, which entails that he in fact anticipated protophysics:

> That the knowledge of the possibilities always precedes that of the actual course of events is one motivating force in Husserl's thinking. … Like in physics, the **a priori** statements of psychology are logically prior to any factual propositions, although one may proceed to their comprehension in the opposite direction, … (Vuorinen 1971: 76-77; emphasis added).

5. Chemistry

The A vs. B distinction applies also to chemistry. The analogy between A- vs. B-type linguistics and A- vs. B-type chemistry was formulated by Chomsky (1957: 48), as follows:

> "Perhaps the issue can be clarified by an analogy to a part of chemical theory concerned with the structurally possible compounds."

More elaborately, there is first the analogy between A-type chemistry and A-type linguistics: "This [chemical] theory might be said to generate all structurally possible compounds just as a grammar generates all grammatically 'possible' utterances."

Second, there is in both cases the B-type study which applies this *a priori* A-framework to empirical data:

> This theory would serve as a theoretical basis [= A] for techniques of qualitative analysis and synthesis of specific compounds [= B], just as one might rely on a grammar [= A] in the investigation of such specific problems as analysis and synthesis of particular utterances [= B].

6. Biology

In biology, A = the double helix, i.e. the physical structure of DNA vs. B = DNA, i.e. what the double helix is the physical structure **of**. Moreover, there is a wide-ranging analogy between the "grammar of biology" and the "grammar of natural languages", based on the following common features (cf.

Raible 2001: 106-107): (i) double articulation (= meaningful or functional units consist of meaningless or non-functional ones); (ii) different classes of 'signs'; (iii) hierarchy; (iv) combinatorial rules on the different hierarchical levels; (v) links between principles of hierarchy and combinatorial rules.

7. Sociology

In sociology, the situation is much the same as in psychology, insofar as the A vs. B distinction has remained largely implicit, with such notable exceptions as Mead (1934), Winch (1958), and Schutz (1962). B vs. A = empirical sociology vs. 'symbolic interactionism' (Mead) / 'aprioristic sociology' (Winch) / 'phenomenological sociology' (Schutz). The A-type sociology is also known as 'sociology of knowledge' (cf. Itkonen 1978: Sect. 2.4).

8. Evolutionary Theory

Evolutionary theory is unlike the previous examples insofar as here A and B belong to different (= successive) historical periods:

> Some authors [like Carl von Linné] look at the Natural System merely as a scheme for arranging together those living objects which are most alike and for separating those which are most unlike; or as an artificial means for enunciating, as briefly as possible, general propositions. … But I believe that something more is included and that the propinquity of descent — the only known **cause** of the similarity of organic beings — is the bond, hidden as it is by various degrees of modification, which is partially revealed to us by our **classification**. (Darwin 1998/1859: 312-313; emphasis added).

Far from **falsifying** von Linné's taxonomy, Darwin **explained** it, namely by providing it with a **causal** interpretation. Once again, A = non-causal vs. B = causal.

The Darwin-quotation can be further supported by the following cross-scientific-*cum*-cross-historical analogy, where Aristotle is to Newton what von Linné is to Darwin:

$$\frac{\text{A: Aristotle}}{\text{B: Newton}} = \frac{\text{von Linné}}{\text{Darwin}}$$

In this analogy, the A vs. B opposition results from generalizing the opposition between absence vs. presence of causal exlanations from physics to evolutionary theory: "Die seit Galileo und Newton entstandene klassische Physik ist keine phänomenologische [nicht-kausale] Physik, wie die antike [aristotelische] Physik weitgehend war, …" (Lorenzen 1969: 144).

All the sciences we have dealt with up to now are governed by the **descriptive** research interest, both in their A-component and in their B-component. Our last two examples, i.e. logic and philosophy, are different insofar as the (non-empirical) A-component is governed by the **prescriptive** research interest, while the (empirical) B-component remains governed by the descriptive research interest.

9. Logic

It is uncontroversial to conceive of a comprehensive science of logic, where A = formal logic vs. B = psychology of logic. The division of labor is such that A-logicians try to invent new and better norms for inference while B-logicians (being experimental psychologists) describe and explain people's actual inference-related behavior; cf. Wason & Johnson-Laird (1972), Johnson-Laird (1983), Johnson-Laird & Byrne 1991; for a summary, cf. Itkonen (2003: Ch. XV = 'Psychology of Logic').

Once again, it is possible to practice A without paying any attention to B, but not vice versa. The inference-related behavior of ordinary people is characterized by a huge number of **mistakes** [B] which they commit from the point of view of formal logic [A], and which can be recognized as such only therefrom.

10. Philosophy

If the A vs. B distinction is uncontroversial for logic, the same is no longer true of philosophy. This is, schematically, how the opposition between philosophy and (empirical) science has traditionally been conceptualized, e.g. in Kant's (1956/1787) *Kritik der reinen Vernunft*, pp. 760-761 (= B 876):

philosophy/*Metaphysik* = conceptual, *a priori*

vs.

science/*Naturlehre* = empirical, *a posteriori*

We now gain additional support for the thesis of structural monism. It is not only the case that the structure of every science repeats the (bipartite) structure of a belief. It is also the case that all sciences repeat the basic 'philosophy vs. science' opposition insofar as their A vs. B components exemplify the 'conceptual (= *a priori*) vs. empirical (= *a posteriori*)' opposition.

This is how the task of philosophy has generally been understood: "The problem for epistemology is not 'why **do** I believe this or that?' but 'why **should** I believe this or that?' …" (Russell 1967/1940: 14). In other words, philosophers do not describe existing ways of thinking but, just like professional logicians, they try to invent new and better ways of thinking. There seems to be no room for any B-type philosophy because, being just a description of how people think in fact, it would be indistinguishable from psychology. Indeed, this is exactly how Kant conceives of empirical psychology, namely as "applied philosophy":

> Wo bleibt denn die **empirische Psychologie**...? Ich antworte: Sie kommt… auf die Seite der **angewandten** Philosophie, zu welcher die reine Philosophie die Prinzipien a priori enthält, die also mit jener zwar verbunden, aber nicht vermischt werden muss"; pp. 760-761; original emphasis).

For completeness, it is good to add that there have been recent attempts to establish something amounting to empirical (= B-type) philosophy; cf. Knobe & Nichols (2008). Apparently, this would be something like 'folk philosophy', on the analogy of 'folk psychology'. Such an endeavor is unobjectionable, as long as traditional A-type philosophy is only meant to be complemented, rather than replaced, by this 'new' B-type philosophy. In fact, the same kind of attempt was made by Naess (1952), who pleaded in philosophical analysis for "hypothetico-deductive methods as they are used in physics and chemistry" (p. 249). Other similar attempts include Quine's (1969) "epistemology naturalized" and Lakoff & Johnson's (2002) "embodied realism". The misguided idea of traditional

philosophy being **abandoned** in favor of some empirical counterpart has been criticized e.g. in Itkonen (2023: Subsections 24.A-B).

By now, it should have become clear that this article is, among other things, meant to be a vindication of **analogy** as a general investigative tool. In fact, the title of Itkonen (2005) might be clarified as *Analogy as structure [A] and process [B]*.

11. Qualifications

In what precedes, the important thing was to pursue the argument, moving from one science to the next and pointing out interdisciplinary analogies as they kept coming into view. Now it is time to mention a few **qualifications**. They will not be presented in any particular order.

11.1. In all sciences, researchers make the A vs. B distinction at the level of description, but in human/social sciences it is made **also** by research objects at the level of data. Hence, this distinction serves to divide the sciences into two principal groups, i.e. natural vs. human/social, as explained by Trubetzkoy (1969/1939):

> The basis for this distinction is that the system of language [= *langue*] as a social institution constitutes a world of relations, functions, and values, the act of speech [= *parole*], on the other hand, a world of empirical phenomena. There is **no parallel for this in the natural sciences** such as botany and zoology. Therefore, these cannot be considered for comparison. But the **same** type of relation is found in **all** the social sciences insofar as they deal with the social evaluation of material things. In all such cases the social institution per se must be strictly distinguished from the concrete acts in which it finds expression, so to speak, and which would not be possible without it (p. 12; emphasis added).

This means that our notion of **structural monism** is abstract or general enough to subsume important qualitative differences such as the traditional difference between natural vs. human sciences.

11.2. The *langue* vs. *parole* distiction was exactly anticipated by Hegel's dictum "die Rede und ihr System, die Sprache" (= 'speech and its system, language'); quoted from Coseriu (1974/1958: 17, n. 32).

11.3. The data of A-type sciences is not 'timeless' in any absolute sense, but in the sense in which any structure can be regarded as such (cf. Itkonen 2021).

11.4. As we have seen, Putnam (2013) endorses a position which *de facto* equates (equivalents of) Kuhnian **paradigms** with exemplifications of our A vs. B distinction. This is one way to show that this distinction indeed transcends the boundaries of any particular science.

11.5. One or another variant of the A vs. B distinction is almost universally accepted. Taken together, the different versions of A constitute what Kambartel & Mittelstrass (eds.) (1973) collectively characterize as *das normative Fundament der Wissenschaft*. Still, there are a few dissenting voices, like Davidson and Quine, or so it seems. The latter approvingly quotes (1981: 38-39) the former, who writes: "This dualism of scheme … [or] of organizing system and something waiting to be organized, cannot be made intelligible and defensible."

As far as I can see, this remark is unjustified. More precisely, it makes sense only if it is meant to express the self-evident truth that we have no direct access to the Kantian **pre**-conceptualized *das Ding an sich*. But importantly, we do have access to something **almost** analogous. When an adult

person P learns to master a foreign language from scratch, the situation is **exactly** the one described by Davidson: P starts with "something waiting to be organized" and ends with an "organizing system". Of course, the starting point is not **fully** analogous with *das Ding an sich*, because it has been conceptualized (and verbalized) as "something waiting to be organized". Surprisingly, Quine accepts this semi-analogy: "Where I have spoken of a conceptual scheme I could have spoken of a language" (p. 41). And he tells us that Davidson too is happy to accept 'scheme' being replaced by 'language'. In sum, the whole disagreement disappears. Or does it? And if it does, what was it about, in the first place?

11.6. This sounds like a rhetorical question, but we are actually able to supply it with a perfectly adequate answer. What Davidson is – rightly – complaining about is the **strong** interpretation of Kuhnian paradigms according to which even ordinary things are **perceived** differently after scientific 'revolutions'. This was always an implausible idea, and easily refuted:

> Whorf, wanting to demonstrate that Hopi incorporates a metaphyssics so alien to ours that Hopi and English cannot, as he puts it, "be calibrated", uses English to convey the contents of sample Hopi sentences. Kuhn is brilliant at saying what things were like before the revolution using what else? our postrevolutionary idiom" (Davidson 1975: 130).

We have already seen that on this issue Putnam (2013) agrees with Davidson: telescopes, for instance, are exactly the same both before and after revolutions. This should surprise no one, because ordinary language always remains the last metalanguage. Itkonen (1996), for instance, advocates the same idea: there can be no 'strong' (e.g. 'computational') **paradigm** within linguistics because sentences like *ababab* remain exactly the same, regardless of how they are conceptualized, i.e. whether they are generated by context-free grammars, predicate logic, PROLOG, or Turing machines.

Davidson is right to criticize the strong interpretation of Kuhnian paradigms, but he is wrong to claim (or even to insinuate) that this criticism somehow invalidates the general distinction between system/scheme vs. data/exemplification.

11.7. It was stated above that logic and philosophy are 'prescriptive' in a sense in which e.g linguistics and physics are not. But of course, every science contains a prescriptive element in the sense of trying to improve our theoretical understanding:

> Philosophy teaches us how to think better whereas linguistics does **not** teach us how to speak better. But the difference is, in reality, less clear-cut than it seems. Surely theoretical linguistics at its best teaches us how to **think** better than we did before about the way we speak (Itkonen 2019b: 37; original emphasis).

11.8. Applying the A vs. B distinction to philosophy is exceptionally difficult, as shown by the many unsuccessful attempts to establish one of another kind of 'descriptive philosophy' (cf. the previous references to Naess, Quine, and Lakoff & Johnson). The school of 'ordinary language philosophy' has also to be mentioned in this context (cf. Itkonen 2019b: 36-37). In conformity with the Wittgensteinian slogan 'meaning is use', such representatives of this school as Ryle and Austin proposed in the 1950's to practice philosophical meaning-analysis by observing how words are actually used.

Two things need to be corrected here. First, the agenda was formulated in a misleading way: what was 'observed' was not the actual spatiotemporal behavior of a group of speakers, but those (existing) norms they were following (and occasionally violating). Second, the agenda itself was misconceived: clinging to it would have – incongruously – replaced philosophy by (autonomous) linguistics.

Searle (1969) explains Ryle's and Austin's *prima facie* quandary: "As a tool of analysis, the use theory of meaning can provide us only with certain data, i.e., raw material for philosophical analysis …" (pp. 148-149). In the same vein, this is how von Wright (1983: 54) describes his own attitude vis-à-vis ordinary language philosophy: "What I often missed was a philosophical motivation for the practice of linguistic analysis. **Why** is the logic of language interesting, or a worthy object of the philosopher's preoccupations?"

Careful analysis of Ryle's and Austin's texts provides the answer. Contrary to their self-avowed agenda (and to von Wright's instinctive response), they are **not** just observing how people use language. On the contrary, they are constantly pointing out (what they consider as) mistakes and inconsistencies (cf. Itkonen 2023b: Subsection 24.C). Therefore, and regardless of what they think they are doing, they are as a matter of fact following the best tradition of prescriptive A-type philosophy.

On the other hand, and to repeat, B-type philosophy is a viable notion, understood as sociological survey-type analysis of ordinary people's opinions on issues that are generally thought to be of philosophical importance.

11.9. In what precedes, we have seen many examples of **good** analogies. But there are also **bad** (or indifferent) analogies, as shown e.g. in Itkonen (2005: 4.2 [= 'Analogy in mythology/cosmology']). Both aspects have been illustrated by Leonardo da Vinci.

On the one hand, he was **the** master analogist, discovering — among many other things — the common ramifying structure of river deltas, tree branches, and blood vessels. More than anybody else, he deserves the following characterization by William James:

> "What does the scientific man do who searches for the reason or law embedded in a phenomenon? He deliberately accumulates all the instances he can find which have any analogy to that phenomenon; and, by simultanously filling his mind with them all, he frequently succeeds in detaching from the collection the peculiarity which he was unable to formulate in one alone; … Geniuses are, by common consent, considered to differ from ordinary minds by an unusual development of association by similarity" (1948/1892: 367).

On the other hand, his famous picture of the 'Vitruvian Man', enclosed both within a square (= X) and within a circle (= Y), contains two crucial mistakes. First, and contrary to the Renaissance view, there is no real-life analogy between 'terrestrial man' (= X) and 'cosmic man' (= Y), i.e. there is no cosmic counterpart to men walking on the Earth. Second, and again contrary to the Renaissance view, there is no fundamental difference between 'sublunary' motion (= square), i.e. motion on the Earth, and 'superlunary' motion (= circle), i.e. motion in the Heavens (as Galileo and Newton were soon to prove).

Still, Leonardo manages to create a brilliant synthesis of two influential (but wrong) ideas: he was able to condense *la misère et la grandeur de l'analogie* in one single picture.

11.10. Lucien Lévy-Bruhl (1857-1939) was a French philosopher-*cum*-anthropologist who famously entertained not just the possibility but also the *de facto* existence of 'alien logics', at least during the early phase of his career (cf. Cazeneuve 1963, Itkonen 1983: 212-214). It is in the spirit of Lévy-Bruhl that Needham (1972) constructs an elaborate argument to deny the cross-cultural validity of the very notion of **belief**. If Needham is right, the basis of structural monism evaporates. But he seems to be wrong, for (at least) two reasons.

First: In the (prescriptive-)**philosophical** context, it is enough to say that even if the notion of belief happens to be non-existent in a certain culture (like — presumably — among the Nuer of the Sudan), it **should** be existent.

Second: In the (descriptive-)**scientific** context, this response is not enough. Instead, one should question Needham's (idiosyncratic) notion of 'belief'. In his opinion, "something can be believed even when it is recognized to be impossible" (p. 64). In this respect, as he sees it, *to believe* is unique among the psychological verbs. For instance, verbs like *to think, to wish, to fear, to hope* cannot presumably be used in the same way (p. 65). But this is the exact opposite of the truth. We can**not** believe what we know not to be the case whereas we **can** wish what we know to be impossible.

12. Conclusion

Even after the qualifications 11.1.-10. have been taken into account, the thesis of structural monism holds good, as far as I can see. For completeness, and in conclusion, I mention the objections that were made by two SALC-2022 participants after my talk; let us call them Professors X and Y.

Professor X: "The thesis of structural monism is false because the several A vs. B distinctions are just too different to make coherent sense." — My reply: "Wrong! They just **look** different, but on careful inspection they turn out to be closely similar, if not downright identical."

Professor Y: "The thesis of structural monism may be true, but for a linguist it is of no interest." — My reply: "Wrong again! As noted by William James among many others, it is the very essence of science not to record disparate phenomena, but to discover "the reason or law embedded in a phenomenon"; and making generalizations is the only way to do so. The thesis of structural monism constitutes the (meta)scientific generalization *par excellence*. Linguistics is an integral part of this generalization.

Postscript

Because structural monism (= SM) is a scientific hypothesis (in a very general sense of 'scientific'), it must admit of being tested, i.e. being either confirmed or disconfirmed. This is indeed what I have done in what precedes: I have found nine confirmatory instances and no disconfirmatory instances. Of course, I could continue this process of testing indefinitely, but this is not a very interesting idea. So, how else could SM be improved?

McCormack (2005) offers a tentative answer. He distinguishes between disciplinary thinking and interdisciplinary thinking. For years, he has been engaged in the latter undertaking. It consists, first of all, in finding large-scale similarities between distinct conceptual domains, for instance: 'terrorism is like a disease' or 'an atom is like a solar system'. In each case, a point-by-point correspondence has to be postulated between two or more systems. This is **analogical reasoning**, as defined e.g. by Gentner (1983); cf. Itkonen (2005: 35-36). Moving from one system to the next equals **translation**: "interdisciplinary thinkers claim authority as translators".

But gradually, McCormack has become dissatified with this 'similarity-in-analogy' approach. In inter-cultural communication, for instance, rapid similarity-based translation is likely to produce superficial results. Instead, he now recommends the 'difference-in-analogy' approach, which emphasizes the *sui generis* nature of each system taken separately.

McCormack has the right to remind us that the use of analogies and metaphors may involve pitfalls. Still, I do not think that SM needs right now to be complemented with the 'difference-in-analogy' perspective. This becomes clear as we compare the practice of SM with translating poetry (often mentioned by McCormack). The diversity of the world's languages is underlain by a more fundamental unity (cf. Itkonen 2023a), which guarantees, broadly speaking, the adequacy of the similarity-based approach. For the benefit of poetic analysis, thereforeHence, it is feasible to evaluate more and more refined inter-**language** nuances. But this is a luxury that SM cannot afford, given that even its basic premise of inter-**science** similarity remains contested (as claimed by 'Professor X').

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