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IN DEFENSE OF TRADITIONAL SEMANTICS (AND AGAINST ALL-OUT PSYCHOLOGISM)

A CRITICAL INQUIRY INTO THE PHILOSOPHICAL AND METHODOLOGICAL FOUNDATIONS OF 'COGNITIVE SEMANTICS'

[Note: While overlapping with Itkonen (2016a), this text deserves to be considered in its own right. Its agenda is more comprehensive. First, it defends traditional semantics against **any** version of (all-out) psychologism, old or new. Second, it explores many new ramifications of the basic argument. Third, some of the criticisms are now expressed more openly than before.**]**

Contents

1) Setting the Stage

There seems to be an increasing tendency to embrace the following way of thinking: all problems of philosophy, logic, and linguistics can, and must, be solved by empirical psychology (and/or neurology); as a consequence, philosophy, logic, and linguistics cease to exist as autonomous disciplines and are to be replaced by a unified science of psychology and/or neurology: "Naturalism does not repudiate epistemology but assimilates it to empirical psychology" (Quine). "It is in conformity with the PATH schema that the force of logic moves us from one propositional location to another – forcing us to conclusions" (Johnson). "The standpoint of generative grammar is that of individual psychology" (Chomsky). "Meaning is a matter of conceptualization; meanings are conceptual entities, so the conceptualization of a sound can also be considered a meaning; a conceptualization is the occurrence of a cognitive event, defined as a neurological occurrence; only as a special case, and to a very limited extent, can we monitor our own conceptualizing activity" (Langacker). – These quotations illustrate the position of (all-out) **psychologism**.

2) The Basis of Semantic Analysis: Analyticity

In this paper I shall contest the psychologistic position, by exposing several of its shortcomings. We shall take semantics as our starting point. But first, let us fix our terminology in conformity with Pap (1958: 423):

analytic = necessarily true
contradictory = necessarily false
explicitly analytic sentences = either formal-logical truths or 'substitution instances' of such truths expressed in some natural language
broadly analytic sentences = (a priori) sentences true by virtue of the meanings of (descriptive) constituent terms
entailment = necessarily true implication

Let us note in passing the interdependence of necessity and possibility: '*p* is necessarily true' = 'it is not possible that *p* is false', and '*p* is possibly true' = 'it is not necessary that *p* is false'.

A) Pre-existent

The core of semantic analysis is the same in philosophy and in linguistics: "The concept of entailment (and the related concepts of logical contradiction and logical incompatibility) is the primary tool by means of which analytical philosophers undertake to analyse concepts" (Pap 1958: 92). "Semantic analysis of natural language involves **intuitive** knowledge of necessary propositions" (op. cit., p. 396; original emphasis). "In learning the meaning of words we in effect learn certain simple analytical truths; for these truths are simple, in that knowing them to be [necessarily] true is a necessary condition of understanding their meaning" (Edgley 1970: 25). "In any case, whatever one's general philosophy of science, most of us I guess could also agree that semantics is, as a matter of fact, as much a part of philosophy as it is a part of linguistics …" (Sinha 1993: 54).

It is **primarily** by means of entailments and contradictions that we perform each and every semantic analysis, whether or not we realize it (and even contrary to explicit denials). This is how we, to start with, elicit all **lexical** meanings: 'A is B's father' entails both 'A is male' and 'A is

B's parent' (and is contradicted by 'A is B's child'); 'A is running' entails 'A is moving' (and is compatible with 'A is smiling', and is incompatible with, or contradicted by, 'A is motionless'); and so on. All **grammatical** meanings, e.g. 'present' and 'singular', are elicited in the same way: 'A is running' entails 'this happens now' (and is contradicted by 'this happened yesterday'); 'A met a friend' entails 'A met one person' (and is contradicted both by 'A met nobody' and by 'A met several persons'); and so on. Because these truths are self-evident to the point of being trivial, we tend to ignore them. Or worse, we may be misled into thinking that they have somehow been superseded by the most recent wave of psychologism.

Let us have, in more detail, a look at (some of) those entailments which justify the definition 'knowledge = true justified belief', which goes back to Plato's *Meno* (97b-98a) and *Theaitetos* (201a-210d) (cf. Pap 1958: 295; Lehrer 1974: 14-18; Itkonen 1978: 302-304):

(1) If A knows that p, then *p* is true.
(2) If A correctly guessed that p, then A had a true belief concerning *p* but A did not know that p.
(3) If A believed that p when *p* was highly probable and yet false, then A had a justified belief concerning *p*, but A did not know that p.

(2) and (3), taken together, show that neither 'knowledge = true belief' nor 'knowledge = justified belief' is enough. What is required, is 'knowledge = true justified belief'. Notice, however, that there is no reason to formulate this definition as an **equivalence** (or biconditional) *if, and only if, p then q*, as is often done. It is enough to formulate it as a (necessary) **implication**, or entailment: 'If A knows that p, then A has a true justified belief concerning *p*'. The point is that while an implication *if p then q* states a sufficient condition for *q*, it states only a **necessary** condition for *p* (here: 'knowledge'), and not a necessary **and sufficient** condition. It is always a good policy to keep one's definitions **open**, thus steering clear of closed Aristotelian 'real definitions' (even if these do constitute the **core** of all definitions).

Let us illustrate. The sentences *if A is B's father, then A is male* and *if A is B's father, then A is B's parent* state necessary conditions for being a father. It is not imperative to claim, however, that, taken together, they also constitute a sufficient condition for being a father. To be sure, this can be done in one context, but in some other context it may be reasonable to assume 'father' to contain e.g. cultural or metaphorical attributes as well. What is important is to realize that there is **no** context where the (primary) attributes 'male' and 'parent' can be (entirely) ignored.

The definition of 'father' will be further discussed in Section 18. Necessary vs. sufficient conditions will be examined in more detail in Appendices 5-6.

As noted by Edgley (1970: 25), understanding the meaning of (e.g.) 'father' is inseparable from, or even the **same thing** as, understanding entailments (= analytical truths) like *if A is B's father, then A is B's parent*. Interestingly, Peirce makes use of the same idea to explain the meaning of universal propositions: "Part of what is involved in accepting a universal proposition simply is having a habit of using it as a rule in deriving conclusions by Barbara [= Transitivity of Implication]" (Hookway 1985: 196). More generally, "accepting a proposition involves adopting a certain habit of inference" (p. 206). For instance, it is part and parcel of the meaning of (4) that it can be used in the following Barbara-type inference:

(4) Every soldier is a maniac
(5) Every maniac is a patriot

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(6) Every soldier is a patriot

Logically enough, Peirce thinks that "the analytic-synthetic distinction is important" (Hookway 1985: 193). What is more, he claims that "all reasoning is in an excessively general sense of the form of *Barbara*", as quoted by Hookway (1985: 196). A notion like 'semantic/analytic network' (with its own internal hierarchy) inevitably suggests itself here, confirmed e.g. by the similar notion represented by Davidson (1975), as explained in Sect. 12. (For a discussion of Aristotelian syllogisms, more generally, cf. Itkonen 2013b: 750-753).

The prototype of semantic analysis, as illustrated by (1)-(6), makes no reference at all to psychology. *Ergo*, semantics, in its primary sense, is a non-psychological undertaking. (This simple argument, while of course inconclusive, should give pause to any representative of all-out psychologism.) To think otherwise is a misunderstanding which underlies, and vitiates, today's 'cognitive linguistics' in its entirety. It goes without saying that, in a **secondary** sense, semantics is a psychological undertaking. But, as indicated in the title of my paper, what I am contesting is **all-out** psychologism. This should be clearly understood. If I 'defend' traditional semantics, I do so only insofar as I claim for it the role of being the **core** of any kind of meaning-analysis.

It is perfectly possible for someone to deny the (necessary) truth of *If A is B's father, then A is B's parent* and the (necessary) falsity of *if A is B's father, then A is B's child*, but s/he would be **wrong** to do so. (Denials can be either explicit or implicit.) This reveals in a preliminary fashion the all-importance of **normativity** in semantics, in particular, and in language and linguistics, in general (cf. Itkonen 2008b).

It is also important to understand that such necessary relations obtain not just between the meanings of linguistic expressions but also between the (meanings of) actions described by these expressions. For instance, it is not only the meanings of *buying* and *selling* which are interdependent with each other just as well as with the meanings of *property, money*, etc.; so are also (the meanings of) the corresponding actions and things: it is logically impossible that A could buy B from C without B being a property that C sells to A: "If social relations between men exist only in and through their ideas [of 'buying', 'selling', 'property', 'money'], then, since relations between ideas are internal [= necessary] relations, social relations must be a species of internal relation too" (Winch 1958: 123).

Ultimately, and the appearances notwithstanding, social = semantic. Do we need additional confirmation? If so, here it comes: "Actions as much as utterances belong to the realm of statements, concepts and beliefs; and the relation of belief to action is not external or contingent, but internal and conceptual" (MacIntyre 1964: 52).

B) Emergent

Semantic analysis, both philosophical and linguistic, starts with pre-existent meanings or, more precisely, with pre-existent relations of entailment (and contradiction). This was well illustrated by the analysis of 'father'. But the analysis of 'knowledge' already exhibits a couple of steps in the theoretical direction, making it clear that sooner or later we have to move beyond pre-existent meanings or meaning-relations. How should this process be conceptualized, more precisely?

As far as I know, one of the best answers to this question has been provided in publications by the Finnish philosopher Georg Henrik von Wright. What follows is a synopsis of his position, illustrated by translations of selected statements given in his 1983 Swedish-lnguage article (pp. 57-60):

> "Those concepts that captivate the philosopher usually have counterparts in words of everyday language, but he finds their use either unclear or in need of systematization. Neither the actual use of language nor what is taken to be its correct

> use can guarantee that the philosophical endeavour will be successful. This is why I will say that what the philosopher is doing is not reconstructing either the surface or the deep structure of language but explicating certain **conceptual intuitions**. [In my own thinking] there has been a shift from description and discovery to creation and invention: what first looked like reconstructive discoveries turned out to be constructive inventions. However, everyday language does offer a **negative** test: what the philosopher says must not be in violation of what the linguistic community considers to be correct use."

The intuitions at issue are about "conceptual connections" (*begreppsliga sammanhang*), entailment being the prime example of such connections. According to the foregoing account, some entailments 'are there' already before semantic analysis begins while others emerge from it. It goes without saying that there is no clear demarcation between the two types of entailment (roughly: pretheoretical vs. theoretical), as exemplified by the different components of our analysis of 'knowledge'. The same example also illustrates another fuzzy distinction, namely that between philosophy and linguistics: there is no reason why this paradigmatic instance of **philosophical** analysis could not be either identical with or at least part of a **linguistic** analysis as well, namely of the (lexical) meaning of the word *knowledge*.

Another example of the philosophical method will be given in Section 21. It is certainly part of our everyday language and thinking that we 'understand actions'. But when the philosophical method is applied to this pretheoretical concept, it produces a new, theoretical concept, namely 'rational explanation', with new (= more explicit) relations of entailment between its component concepts 'goal', 'belief', and 'action'.

It may be thought that there has to be a fundamental difference between (prescriptive) philosophy and (descriptive) linguistics. Philosophy is about how we think while linguistics is about how we speak. Philosophy is supposed to make us change our way of thinking, by teaching us how to think **better** than we did before. Linguistics, by contrast, is **not** supposed to make us change our way of speaking. But, of course, there is nothing wrong with the idea that linguistics too should change (= improve) our way of thinking, namely the way we think about how to describe language. – This discussion will continue in Section 24.

C) Intuition-cum-Recollection Combined with ('Immanent') Reflection

The **data** that intuition applies to is constituted by concepts (or norms governing their use), 'concept' being understood in the sense of 'concept-3' (cf. Sections 12-17). What kind of 'data-gathering' are we talking about here? Von Wright (1983) does not directly answer this question. A more informative answer is contained in the following quotation from Itkonen (1978: 212-213):

> "Any attempted systematization [as part of philosophical or grammatical analysis] is a **creative** act, i.e., it brings into existence something **new** viz. something which is of the **theoretical** order. It seems perfectly proper to say, then, that the analysis brings about new 'facts', which may in turn become the object of analysis. But these new facts are of a different kind than the initial, intuitively known or atheoretical [= pre-theoretical] facts. In this sense it remains true that the analysis does not require looking for new, as yet unknown facts (that is, facts of the same kind as the known facts), but making the available knowledge explicit. The actual description may be carried out with varying degrees of formalization, of course (cf. 11.0. below).
>
> … To this end, as Wittgenstein himself notes, one has to **remind oneself** of the way that expressions are used and of the different constructions in which they

> occur or may occur. The same idea, that one has not to search for new facts, but to remind oneself of those that one already knows, is emphasized for instance in Hare …, Cavell …, Henson …, Searle …, and Vendler … Notice in particular that here one is not asked to remember how he or someone else has as a matter of fact used a certain word for instance, something which would be a more or less empirical question, but, rather, how this word **is to be used**, which is an entirely different, i.e. conceptual and normative, question …
>
> This process of sharpening one's intuitive knowledge has been pertinently characterized by Specht (1969: 132-33), who in this context coins the term 'immanent reflection': …
>
> Hare (1971: 239) has pointed out that that the role of recollection in linguistic analysis, e.g., in the analysis of the meaning of *right*, offers a certain justification for Plato's concept of *anamnesis*: '… [Plato] spotted the very close logical analogies between philosophical discoveries and remembering. He was wrong in supposing that we are remembering something that we learnt in a former life … What we are actually remembering is what we learnt on our mother's knees, and cannot remember learning.'"

In general, I characterize the conceptual analysis as 'intuition-*cum*-reflection', but this shorthand expression should always be understood as containing the 'recollection component' as well. – Again, the discussion will continue in later sections, especially 24-C-D.

3) Analytic-Synthetic: 'Gradualism' à la Pap (1958)

In the subsections 2-A-B I argued for the all-importance of analyticity in semantics. But has Quine (1953) not demonstrated that there is no tenable analytic-synthetic distinction? Far from it! This is just a trivial misunderstanding. What Quine has managed to demonstrate is that there is a **gradual** distinction between analytic and synthetic; in other words, there is an incontestable **continuum** between these two extremes. In outline:

analytic	(7) No unmarried man is married
-	(8) No bachelor is married
-	(9) No lemon is sweet
synthetic	(10) No bachelor is happy

All of (7)-(10) are implicit implications: (7), for instance, is equivalent to '(for all A's) if A is an unmarried man, then A is not married'. (7), called "logically true" by Quine (1953: 22), is analytic even by his own rigorous standards. It is called "explicitly analytic" by Pap (1958) (cf. Sect. 2). Most people, including Pap (1958: 96), think that (8) too is analytic; more precisely, he calls (8) "broadly analytic" (again, cf. Sect. 2). But let us agree with Quine (p. 23) that (8) is **less analytic** than (7). Next, (9), discussed by Pap (1958: 345-346), is in turn **less analytic** than (8). More precisely, (9) exemplifies those sentences which are **neither** (clearly) analytic **nor** (clearly) synthetic. Finally, it is undisputable that (10), being empirically false, is clearly synthetic, and therefore **more synthetic**, and **less analytic**, than (9). Thus, we end up with the continuum (7)-(10). Additional intermediate stages can be added to it, e.g. between (7) and (8), as will be quite concretely shown in Appendix 9-A.

On reflection, this has always been self-evident: "The distinction between necessary truth and empirical truth appears somewhat less than clear-cut" (Pap 1958: 391). "Es ist selbstverständlich, dass der Begriff der Analytizität in natürlichen Sprachen nur relativ sein kann

(vgl. Quine, *a.a.O.* [= 1953]). … Die Relativität darf aber nicht mit der Nicht-Existenz verwechselt werden" (Itkonen 1970a: 8). "Some scientific principles have the character of analytic truths while others are clearly empirical generalizations. … the border between the two categories has often fluctuated in the course of the historical development of a science" (von Wright 1971: 20). To deny this self-evident truth amounts to succumbing to the **fallacy F1**: 'If there is no **absolute** distinction between A and B, there is **no** distinction between A and B.'

Clearly, (1)-(3) are not 'explicitly analytic' (or '100% analytic'), because they are not 'true by virtue of logical form'. But they are certainly 'true independently of matters of fact', which means that they are 'broadly analytic' (or – let us say – '99% analytic'). They represent the first step down the analytic-synthetic continuum. For the purposes of semantic description, this is more than enough.

(7)-(10) exemplify 'gradualism', as defined by Pap (1958). It will be further discussed in Appendix 5, together with Quine's version of 'gradualism'

What precedes agrees, interestingly enough, with Chomsky's (1976) notion of semantics: "Thus lexical items might be related by principles that form a kind of central core for a system of common-sense beliefs, with no sharp distinction between analytic and synthetic propositions" (p. 42). "The sentence *Nixon is an animate object* is, let us say, a necessary truth (given that in fact Nixon is human)" (p. 47). "Even if the semantic content of a lexical item is not fully specified by the grammar, there might still be some analytic connections" (p. 233). More interestingly still, postulating necessary connections in this way is bound to **contradict** Chomsky's 'official' psychologism (cf. Sect. 9).

'Gradualism in linguistics' is a topic important enough to deserve additional documentation and clarification:

> "All distinctions which either involve social life (e.g., 'physical – mental') or obtain in it (e.g., 'correct – incorrect') are relative. This is a trivial truth which need not be repeated once it has been stated. However, the important thing is that even if each of the distinctions concerned forms a continuum, the end points of such a continuum are **absolutely different** (in the relevant respect) and, moreover, they both represent extremely large numbers of important cases. For instance, there is an infinite number of physical entities and mental entities as well as correct entities and incorrect entities.
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> In this context two opposite mistakes are often made. Let us take as an example the 'correct – incorrect' distinction. On the one hand, from the fact that **some** cases are unclear, it is inferred that **all** cases are unclear; this is the standpoint of the current empiricist trend in socio- and psycholinguistics (cf. 5.4 and 7.4 below). On the other hand, presumably because their untidiness, the factually existing unclear cases are taken to be purely apparent, so that clear cases are what exists 'in reality'; this is the 'classical' standpoint of T[ransformational] G[rammar]: '[a quote from Katz & Bever (1974)]'
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> The fallaciousness of both of these lines of thought should be evident. Take the distinction between young and old. It would be equally absurd to claim that since **some** people are neither young nor old, **all** people ['ultimately'] are neither young nor old, and that in reality there are only young people and old people. I hope to avoid both of these fallacies. All distinctions concerned are relative, but at the same time they have huge numbers of absolutely clear cases in their favour" (Itkonen 1978: 108-109).

The view that, 'in reality', all people are neither young nor old exemplifies the **fallacy F1**: gradual distinctions are no (genuine) distinctions. The view that, 'in reality', there are only

young people and old people, deserves in turn to be called the **fallacy F2**: only absolute distinctions exist (because, to repeat, gradual distinctions are no genuine distinctions). F1 and F2 look synonymous (i.e. both result from the rejection of gradualness) but, as shown by these (over-simplified) examples with 'old vs. new', they turn out to have directly opposite consequences.

4) Dictionary vs. Encyclopedia

Because the entailments used in semantic analysis are true 'independently of matters of fact', they must be true 'by virtue of meaning alone', which means that the core of semantics is, to the corresponding extent, **language-internal**. But has Langacker (1987: 154-156) not demonstrated that semantics must be encyclopedic in nature? Not at all! This is another trivial misunderstanding. What Langacker has done is to start from the observation that "the distinction between dictionaries and encyclopedias is fundamentally misconceived", in order to arrive at the conclusion that "the only viable conception of linguistic semantics is encyclopedic in nature." But this is a non-sequitur. More precisely, it exemplifies the **fallacy F3**: "If there is no absolute distinction between A and B, then (B being more frequent than A) there is nothing but B." The three fallacies F1, F2, and F3 illustrate some (but certainly not all!) of those different ways that the notion of **continuum** can be misunderstood. F1, F2, an F3 were first defined in Itkonen (2006). Their incidence in today's cognitive linguistics has been documented in some detail in Itkonen (2016a).

Adherents of F3 expect others to behave in the same way as they do: if the option 'nothing but encyclopedia' (= 'there is nothing but B') is rejected, the only remaining option seems to be 'nothing but dictionary' (= 'there is nothing but A'). But this is patently false. Both Pap's, (1958: 370) "gradualistic theory" and Quine's (1970: 100) "doctrine of gradualism" offer the obvious solution: there is a **continuum** leading from A to B: "To say of the given distinction that it is vague is quite compatible with saying that there are cases to which one and only one side of the distinction clearly applies" (Pap 1958: 401). Thus, the end points A and B are **clear cases**: for instance, A = dictionary definition of 'knowledge' given in (1)-(3) vs. B = encyclopedic/botanical definition of 'banana', the example that Langacker (1987: 154) seems to regard as prototypical. Those semantic descriptions that fail to clearly exemplify either A or B are located somewhere **between** A and B. Is this really too difficult to understand?

Too difficult or not, this is what Pap (1958) explicitly claims for (9) as a partial definition of 'lemon'; but he then adds the following important remark: "Notice that the intensional vagueness of 'lemon' and 'fruit' notwithstanding, the **nuclear intensions**, so to speak, of these terms are definite enough to permit the statement that 'x is a lemon' **entails** 'x is a fruit'" (p. 347; emphasis added).

Hence 'all lemons are fruits' is an **analytic** sentence, which goes to show that even with a word like *lemon*, its core meaning (or "nuclear intension") exemplifies analyticity. The same must be true of *banana*. In sum, there are **no** entirely encyclopedic meanings.

Furthermore, what is true of a sentence like 'lemons are sour' is also true of such a classical definition as 'men are rational animals': it is neither analytic nor synthetic. This sentence constitutes the **only** basis for White's (1952) attempt, favourably viewed by Quine (1953: 46), to show the 'untenability' of the analytic-synthetic distinction. Still, White's (1952) argument, although much too simple and simple-minded, is not entirely without merit. Its rightful target is e.g. Carnap's (1956: 23-25) view that the identity-statement 'human = rational animal' is "L-true", i.e. analytic, whereas 'human = featherless biped' is just (contingently) true.

How did this mistake originate? Langacker (1987: 155) establishes a contrast between "a dictionary entry of limited scope" and "an open-ended, **essentially** encyclopedic description" (emphasis added), and opts for the latter. But what does the word *essentially* mean in this context? It means quantity, not quality. If the semantic description is allowed to be open-ended (which is a

reasonable policy), then it goes without saying that the encyclopedic part will always be **larger** than the part identifiable as the traditional dictionary entry. But the encyclopedic part will also be the **less important** one (and at the 'fringes', wholly trivial), because the dictionary definition always constitutes the **nucleus** of semantic description (cf. also Sect. 17). If the word *essence* is taken literally, then the semantic description has **essentially** the properties of a dictionary entry. Hence, semantic description is essentially non-encyclopedic (cf. also Sect. 12). And let us not forget Quine's (1953) clever definition of 'essence': "Meaning is what essence becomes when it is divorced from the object and wedded to the word" (p. 22).

In practice, of course, we need **both** dictionaries **and** encyclopedias. And, please, do **not** start looking for the exact cut-off point where dictionary ends and encyclopedia begins! There is none, because A shades off into B: this is, precisely, the beauty of **gradual** distinctions (exemplified, once again, by 'lemon'; cf. Appendix 5). Black and white are absolutely different, and yet one is not abruptly replaced by the other. Rather, they are connected by an indefinite number of (either darkening or lightening) shades of grey. The reader should be able to grasp at least this analogy, whatever else s/he may fail to understand.

It should be obvious that, on the most natural interpretation, these two (gradual) distinctions coincide:

analytic	vs.	synthetic
(language-internal) dictionary	vs.	(language-external) encyclopedia

Moreover, the encyclopedic part of meaning turns out to be roughly divided into two subsections, relating either to psychology or to world knowledge, as exemplified, respectively, by (i)'triangle' and (ii) 'glass'.

Re (i). According to Langacker (1987: Ch. 3), the description of 'triangle' requires taking into account no less than **eight** psychological processes: comparison, scanning, selection, abstraction, construal, imagery, transformation, rotation. On the one hand, this is too difficult: no (cognitive) linguist naturally masters this entire topic. On the other hand, this is too easy: all one needs to do is to open up any handbook of experimental psychology and choose a set of relevant quotations. And yet, by Langacker's own account (p. 293, 462), there is an **analytical core** which remains untouched by any discoveries of experimental psychology: it is the identity-statement 'triangle = three-sided polygon', or more precisely, the entailment 'if A is a triangle, then A is a three-sided polygon'.

Re (ii). According to Langacker (2007: 434-435), the description of 'glass' contains an indefinite number of 'domains' such as shape, orientation, material, function, size, cost, storage, method of manufacture, and so on. And yet it is easy to see that, just as 'lemon' and 'banana', 'glass' contains an analytical core, i.e. either 'if A is a glass, then A is a drinking vessel' or 'if A is glass, then A is a type of material'.

To sum up: There is a **tenable** distinction between black/analytic/dictionary (= A) and white/synthetic/encyclopedia (= B), which falsifies F1. There is not only black and white, but black (= A), grey (= C), and white (= B), which falsifies F2. There is both black (= A) and white (= B), instead of only black or only white, which falsifies F3.

5) More on Analyticity

A) Componential analysis

Lexical meanings are not unanalyzable wholes; the parts into which they are analyzed may conveniently be called 'semantic features' (or 'components'); and these are primarily elicited by means of entailments. To avoid wide-spread misunderstandings, let us add that it is **not** claimed here that meanings can be **exhaustively** defined in terms of semantic components; nor is it claimed that there must be some pre-established (and restricted) set of components. Such assumptions are automatically ruled out by (the analysis of) those meanings that are located close to the lower end of the 'dictionary > encyclopedia' continuum.

Quine (1953) argues that analyticity (= X) can only be defined in a circular fashion; and Katz (1967) counters by claiming that non-circular definitions can be given by means of semantic components (= Y). Itkonen (1970a) notes that X and Y are necessarily inter-definable: "Wenn ich nach dem Obengesagten auch geneigt sein könnte, der Intuition über die Analytizität eine sozusagen genetische Primarität der Intuition über die Komponenten gegenüber zuzusprechen, gebe ich jedenfalls zu, dass die Komponenten für die Definition der Analytizität genauso notwendig sind wie die Analytizität für die Definition der Komponenten. Demnach dürfte die Quinesche These über die Zirkularität der Analytizitätsdefinitionen gültig bleiben, was jedoch – angesichts der intuitive sehr ausgeprägten konträren Evidenz – nicht besagt, dass auch die Quinesche These über die Fiktivität der Unterscheidung zwischen analytisch und synthetisch akzeptiert werden müsste" (p. 9). Let us remember: "Die Relativität darf aber nicht mit der Nicht-Existenz verwechselt werden" (p. 8).

Just to make sure, let us have the same thing in English: "Just as the undeniable relativity of the analytic-synthetic distinction in natural languages is no reason for rejecting the distinction itself, the circularity of the definitions of analyticity is no reason for rejecting the notion of analyticity" (Itkonen 1970b: 98-99).

Componential analysis (or 'feature analysis') is alive and well, e.g. in Jackendoff's (2010) conceptual semantics and Nikanne's (2017) micromodular approach to (conceptual) semantics.

B) A note on 'family resemblance'

The preceding account raises the following question. Has Wittgenstein not shown that definitions (or descriptions) in terms of sufficient and/or necessary conditions ought to be replaced by those in terms of 'family resemblances'?

First, I have already **shown** that this is not true. Prototypical semantic descriptions such as (1)-(6) are based on entailments and, hence, on (sufficient and) necessary conditions.

Second, this question may be answered even more directly: "Just before his of family resemblance and broad borderlines in the *Investigations*, Wittgenstein remarks that one might say that the essential thing about a lamp is that serves to give light; that it is not essential that it is an ornament, for example. But, he adds, there is not always a sharp distinction between essential and inessential (*PI*, § 62). … The discussion of broad borderlines thus attacks the idea that the sense of a word is to be explained in terms of necessary and sufficient conditions of application. … Nevertheless, some cases of entailment must be permitted, since they clearly exist in ordinary language: some concepts **can** be defined by giving necessary and sufficient conditions of application" (Richardson 1975: 93-94).

In sum, the claim that family resemblances provide the **only** legitimate type of description seems to amount to a licence of sloppy thinking. In other words, the question 'What is X?' would elicit the following (trivial) type of answer: 'X has almost always the property A, often the property B, and sometimes the property C; occasionally, X may also have many other properties which are just too numerous to be listed here.'

6) Taking the Extra-Linguistic Reality into Account

In lexical semantics, the existence of encyclopedias guarantees the contact with what is located outside of language. In supra-lexical semantics, this is guaranteed by relating sentences to **ontology**, defined as the general structure of that extralinguistic reality which sentences speak about. Inspired by Wittgenstein's (1969/1921) 'picture theory' and Strawson's (1959) 'descriptive metaphysics', Itkonen (1970b), for instance, postulates an ontology divided into states of affairs composed of things, properties, and relations. The ontology in turn constitutes the 'substratum' for different conceptualizations:

> "It is a constitutive feature of our thinking that things are conceived as given objectively and publicly. But it is also true that, depending on the person in question, one and the same thing may be perceived and conceived differently, and may therefore be referred to by different words. [In footnote: Cf. Brown (1958: 225): "Everything in the world is susceptible of multiple categorizations."] Consequently, different ways of perceiving and conceiving must be accepted at the same time as objectively given. There is, however, no clear-cut distinction between which ways of perceiving and conceiving are objectively given and which ways are not. … Now what is true of things is also true of facts" (Itkonen 1970b: 102).

This passage contains the idea, more fully developed in Itkonen (2016a), that word and sentence meanings represent results of **second**-level conceptualizations (cf. Sect. 14).

Finally: "It may be worth reminding ourselves of the truism that when we speak of the world we are speaking of what we in fact mean by the expression 'the world' …" (Winch 1958: 15).

7) The Fallacies F1, F2, and F3 Revisited

The conceptual confusions created by the fallacies F1~F2~F3 have been cleared up in Sections 3-4. But the urge to add more examples of their pernicious influence still remains irresistible. The intrinsically gradual nature of the grammar-lexicon distinction has given rise to what might be called the 'grammatical = lexical fallacy': "There is no meaningful distinction between grammar and lexicon" (Langacker 1987: 3). "I do not believe that either the distinction between grammar and the lexicon or that between semantics and pragmatics can ultimately be maintained" (p. 449). Nonsense! If this were true, the diachronic 'lexical > grammatical' development known as (the principal, but not the only type of) **grammaticalization** would become incomprehensible: it would be a process with no beginning and no end (and the elaborate analogy between grammaticalization and hypothetico-deductive thinking, constructed in Itkonen 2002, would evaporate). Similarly, the all-important typological distinction between **suffixing** and **prefixing** languages would vanish, because 'suffix' and 'prefix' are grammatical (as opposed to lexical) morphemes, but now the grammatical vs. lexical distinction has supposedly ceased to exist. Within the grammatical realm, moreover, the **derivation** vs. **inflection** distinction remains absolutely vital, in spite (or because) of the fact that these two end points are connected by an indefinite number of intermediate stages. Hundreds of pages can (and will?) be filled with additional arguments to the same effect, as suggested by Itkonen (2016a). As Roman Jakobson once noted, "A *conditio sine qua non* of such inquiry [concerning high-level generalizations] is the consistent distinction between grammatical and lexical meanings …, which … still bewilders and confuses some students of language" (1966: 271).

Let us try to reconstruct the reasoning that must have given rise to the 'grammatical = lexical fallacy': "Lexicon, morphology, and lexicon form a continuum" (Langacker 1987:3), i.e. a continuum "whose segregation into distinct blocks is necessarily artifactual" (p. 18); it is precisely because this continuum "can be divided into separate components only arbitrarily" (p. 3) that "the distinction between grammar and lexicon can[not] ultimately be maintained" (p. 449). It follows that "[t]here is no meaningful distinction between grammar and lexicon" (p. 3).

As for Langacker's (1987) statement about the supposedly spurious nature of the semantics vs. pragmatics distinction, it is contradicted by his Figure 2.5 (p. 77), where a vertical line sharply separates 'linguistic convention' and 'usage event' (also p. 186). This distinction exactly coincides with *langue vs. parole*; and within the 'semantic space' (as opposed to the 'phonological space') it further coincides with the semantics vs. pragmatics distinction, exactly.

Some commentators have found it preposterous to claim (as I have done, and am still doing) that seemingly intelligent people might succumb to fallacies as blatant as F1, F2, and F2. In response, I would like to point out that I am not the only one to have observed this deplorable practice. No lesser thinker than Wittgenstein has made the same observation: "When white turns black some people say 'Essentially it is still the same [= F1 & F3]; and others, when the colour turns a shade darker: 'It is **completely** different'" (1956/1967: 125, §38). Do I need to add that Wittgenstein is being **critical** of these views? Notice also the deceptive use of such synonymous expressions as *essentially, ultimately, in reality*. (Marxists used to rely on *objectively*.)

8) Logic Cannot Be Reduced to Psychology

Let us consider Johnson's (1987) attempt to psychologize logic, with the aid of the following *Modus Tollens* inference:

(11) If John is home, the lights are on
(12) The lights are not on.

---

(13) John is not home

It is the essence of any valid (deductive) inference that it **must** be the case that if the premises are true, then the conclusion is true. Johnson tries to reformulate this fact in psychological terms by claiming that "the force of logic moves us from one propositional location to another – forcing us to conclusions" (p. 64); but he fails, for (at least) two reasons.

First: all temporal processes, including the psychological ones, can be **interrupted**. The person who starts from the premises (11) & (12) may never reach the conclusion (13), simply because s/he is distracted in one way or another. (In the extreme case, s/he may just drop dead before reaching the conclusion: so s/he was **not** forced to the conclusion; for a moment it may have looked that s/he would, but s/he did not, after all!) Hence there is **no necessity** (guaranteed by some "force of logic") that s/he will actually perform this inference.

Second: According to Johnson, we are supposed to be moved by the "force of logic", but most often we are just too stupid to be moved in the **right** way. Again, there is no necessity involved. Human beings are fallible, and nowhere is this more evident than in logical behaviour, as is evident from the huge amount of **statistical variation** exhibited by people's actual logical behavior (cf. Itkonen 2003a: Ch. XV; 2005a: Sect. 3.5).

To put it differently, logic is a normative undertaking; it is about what **ought** to be done. Psychology is limited to describing what **is** done; and psychologism is limited to endorsing what can be achieved by psychology. Therefore both are inherently unable to account for logic. This fact has been noted by several commentators, including Abaelard and Frege (cf. Itkonen 1991:

225-226, 283-284). Whatever the "force of logic" may be, it varies from one person (and inference) to the next. And notice that variation exists here only as measured against what is **in**variant, namely the **norm** set by formal logic: first, there is the *modus tollens*; and second, there is what people make of it (cf. Sect. 24).

Experimental psychology must rely on behavioural correlates for whatever it is that it wishes to define. On reflection, it is truly amazing that anyone would think, even for a moment, that such correlates could match standard logical notions (i.e. that the latter could be 'reduced' to the former). This has been duly noticed by Chomsky (1955):

> "Every attempt to give behavioural definitions to such concepts as logical truth, analyticity, and synonymy is likely to produce paradoxical results. It is not difficult to imagine what would happen if 'ordinary people' were asked about … the status of a tautology too complicated to be immediately understood" (p. 37).

Let us conclude with a bird's-eye view:

"Our minds are not so constituted that when we grasp what a sentence or a group of sentences [= premises] says we also know what they imply [= conclusion]). To know that, we must reason deductively. … Take Euclidian geometry, with which we are all familiar. Its axioms are few and simple, we all know them after a fashion. Its theorems are many, some very complicated. Yet all theorems, those already 'discovered' as well as those nobody has as yet thought of, are deductive consequences of the axioms" (Bergman 1957: 30-31). Thus, axiomatics cannot **result** from our natural psychological inclinations because, in order to master the former, we must **overcome** the latter. Once this is clearly understood, the case for psychologism collapses.

9) Katz & Postal and Trubetzkoy against Psychologism

In agreement with the results of Sections 2)-3) and 8), Katz & Postal (1991) base their trenchant criticism of Chomsky-type "conceptualism" (= psychologism) on the fact that it allows "no place for necessary connections in grammatical structure" (p. 521). This inevitably involves Chomsky in a **contradiction**. To be sure, he first acknowledges the need for encyclopedic meaning: "In studying semantics one must keep in mind the **non-**linguistic systems of belief: we have our expectations about three-dimensional space, about texture and sensation, about human behaviour, inanimate objects, and so on" (1979: 143; emphasis added). But then, crucially, he also makes claims like the following ones:

"Thus I agree with Katz that certain **analytic** connections exist between linguistic expressions, certain truths hold solely by virtue of linguistic facts: for instance, the relation between *I persuaded him to leave* and *He intended to leave*, …" (p. 145; emphasis added; the same example is given in Chomsky 1976: 233).

"If I persuade you to go, then you intend to go; if I persuade you that today is Tuesday, then you believe that today is Tuesday. These are facts of language and not the external world. Furthermore, it seems reasonable to suppose that the fundamental properties of quantifiers (of words like *all, any, some,* etc.) and anaphora … can be expressed in part on the level of semantic representation, separate from extralinguistic considerations" (p. 142).

"There are principles that are completely linguistic. For instance, in *John sees him*, *John* and *him* cannot be taken to refer to the same person, … That is a linguistic rule" (p. 146).

Having pointed out this fundamental contradiction, Katz & Postal (1991) correctly conclude that "[no] other form of conceptualism [can] escape the defects of Chomsky's version" (p.

550). These defects are indeed inherent to the very notion of (all-out) psychologism. – My own overall assessments of generativism range from Itkonen (1975) to (1996).

Scientific argumentation is permeated by necessary connections. Chomsky and Langacker simultaneously reject and accept the notion of analyticity, which means that their position entails a contradiction, which in turn amounts to a *reductio ad absurdum* of their position. Now, if you look carefully at the preceding sentence, you realize that it contains three necessity-based notions: entailment, contradiction, and *reductio ad absurdum.* This is typical of scientific argumentation. It is self-defeating, at every step, both to deny necessary connections and (to try) to carry on scientific argumentation. You cannot even take the first step. You are paralyzed even before you begin (or more exactly, before you fail to begin).

This article criticizes psychologism primarily from the standpoint of **semantics**. But it is important to understand that an equally cogent criticism can be, and has been, mounted from the standpoint of **phonology** as well. An elaborate argument to this effect has been constructed by Trubetzkoy (1958/1939). This is his general conclusion: "Reference to psychology must be avoided in defining the phoneme: the latter is a linguistic and not a psychological concept" (p. 37-38). And these are some of the steps which lead up to this conclusion: Phonemes belong to "the system of language [which, unlike acts of speech] is neither produced nor perceived … nor studied with the aid of the sense of the hearing or touch" (pp. 12-13). "The system of language consists of rules and **norms**" (p. 3; emphasis added). "The system of language as a social institution constitutes a [non-empirical] world of relations, functions, and values, the act of speech, on the other hand, a world of empirical phenomena. There is no parallel for this distinction in the natural sciences, …" (p. 12). "The … **norm** … cannot be determined by measurements and computations … the system of language is beyond 'measurement and number'" (p. 8; emphasis added). All these quotations, and more, are to be found, with discussion, in Itkonen (2003b: 149-151). The general background is given in Itkonen (2001).

Let us add that behaviourism in the strict sense is a version of **physicalism**. What is wrong with psychologism (as here defined) is *a fortiori* wrong with behaviourism/physicalism.

10) A Note on Epistemology and Ontology

"Ontology, the very heart of metaphysics, is descriptive in that it attempts to list the categorical features of the world. … The ontological question of what there is cannot be divorced from the epistemological question of how we know what there is. … [A]nd to ask how we know what there is leads, quite naturally, to a consideration of the structure and the powers of the mind" (Grossman 1965: 60-61).

Re epistemology: How do we **know** necessary connections (= entailments and contradictions)? By means of intuition, pure and simple (cf. Pap 1958: 396, 422; Cohen 1986: 77-79).

Re ontology: How, or where, do necessary connections **exist**? Here it is convenient to adopt Popper's (1972b) ontology of 'three worlds': w-1 = the realm of physical (and biological) entities, w-2 = the realm of psychological entities, w-3 = the realm of social-normative entities. The short answer is that necessary connections exist in w-3.

The long answer requires a more detailed definition of w-3, based on Lewis (1969): w-3 entities exist as objects of **common knowledge**; and X is an object of common knowledge when it is true of any two members A and B of a community that A knows-1 X, and A knows-2 that B knows-1 X, and A knows-3 that B knows-2 that A knows-1 X (cf. Itkonen 1978: 122-131, 2008b: 288-291). This also answers the question what it means for X to be a **social** entity.

In practice, the notion of common knowledge is the same as Clark's (1996: 93-96) 'common ground' and Zlatev's (2008: 215-221) 'third-order mentality'.

11) Norms vs. Non-Normative Experiences: Intuition vs. Introspection

W-1 entities are either captured by **sense-perception** or hypothesized about; w-2 entities are either (subjective) contents of consciousness or subconscious cognitive occurrences: the former are captured by **introspection** while the latter are hypothesized about; w-3 entities are first captured by **intuition** and then further analyzed by means of (theoretical) **reflection**. Quine (1953: 21), for instance, correctly distinguishes between (w-1) "observation" and (w-3) "reflection on meanings". This is confirmed by Pap (1958): "The proposition, e.g., that all kinship relations that happen to be the meanings of predicates of the English language are definable just in terms of the concepts 'male', 'female', and 'parent' is knowable *a priori*, by **reflecting on** concepts" (p. 274; emphasis added). Thus, the primary semantic method is summed up as intuition-*cum*-reflection, already illustrated by (1)-(6).

Factual (as opposed to imaginary) linguistic actions partake of all three worlds. Let us illustrate the intuition vs. introspection distinction with a pair of examples:

(14) This mountain range goes from Mexico to Canada.
(15) *This mountain range goes from Mexico in Canada

(14) is a correct sentence of English whereas (15) is incorrect. Whoever utters (15) commits a **mistake**. Why? Because there is a **norm** which determines the (correct) use of pairs of source vs. goal expressions, and this norm has been broken by (15).

It is generally assumed that uttering (14) is accompanied by a **mental scanning** in the south-to-north (or upward) direction. But let us suppose that the one who utters (14) either performs no scanning or performs a different one. Has s/he made a mistake? No. Why not? Because a mistake can be recognized for what it is only on the basis of **public** (or intersubjective) criteria, but there are no such criteria for the occurrence of mental scanning or of mental imagery in general (cf. Itkonen 2008a: 24-25).

We **know** both the correctness of (14) and the incorrectness of (15). More precisely, we say that each of us knows the (in)correctness of (14)/(15) on the basis of **intuition**. Insofar as anyone of us is aware of performing the corresponding mental scanning, his/her awareness is based on **introspection**; and this introspection is in turn the basis for the **hypothesis** that others too perform the same type of scanning. Speaking collectively, we do not know but merely **assume** that anyone who utters (14) performs a mental scanning as here described. Intuition and introspection-*cum*-hypothesis are two different things.

Let us repeat: If, upon hearing the word W, two persons A and B have different types of mental images, e.g. X and Y, it does not make sense to say that one of them has made a mistake (or that both have) if they otherwise behave normally. But this does not mean that they could not be mistaken in a different sense. For example, A may have described his/her mental image as 'X' although, on reflection, 'Z' would have been more appropriate.

Let us finally ask: Would the situation be any different if there **were** intersubjective criteria for the occurrence of mental images? (After all, the relevant technology may be available sooner or later.) This is far from clear. At least today, we **reject** the notion that people **ought** to have certain types of mental images, rather than other types or no types at all.

As argued by Wittgenstein, meaning is (correct) use as determined by 'public' (= socially valid) norms/rules. As a w-3 entity, the meaning of (14) **must** be different from those individual mental scannings which, as w-2 entities, may or may not accompany uttering or hearing (14). Of course, endorsing w-3 does not entail rejecting w-2. (To think otherwise is a surprisingly common mistake.) On the contrary, the subjective w-2 experiences of mental scannings may well

(causally) **explain** how and why the w-3 norm governing fictive-motion expressions like (14) has come into being.

This happens in accordance with the notion of rational explanation (cf. Sect. 21): I want to find a linguistic expression for my experiences of mental scanning, and I think that creating (14)-type expressions is an adequate means to achieve this goal; therefore I begin to utter (14)-type expressions (see also Appendix 5). This is what Coseriu (1974/1958) calls *Ausdruckserfordernis* (or *Ausdrucksbedürfnis*), which is the basis of his 'finalistic' explanations (cf. Itkonen 2011c: 196-197). In the same vein, Itkonen (2013a: 42-44) utilizes the notion of 'expressive need', anticipated by Whitney (1979/1875): "The end aimed at is the supply of a need of expression" (p. 147).

Notice, however, that once the norm begins to exist, it gradually becomes detached from its origin, i.e. those thoughts and actions that brought it into being, in the first place. Once the norm begins to exist, it can no longer be reduced to the experiences that initially gave rise to it. As for the norm governing (14), for instance, it is irrelevant whether or not it is (still) accompanied by individual mental scannings.

In what precedes, we incidentally disposed of the following argument (or 'argument') for psychologism: "… meaning is, in the last analysis, a matter of conceptualization (**what else could it possibly be**?) …" (Langacker 1987: 156; emphasis added). Well, meaning is use, of course.

The dichotomy 'norm vs. non-normative experience' does not yet exhaust the ontological domain which we are dealing with. What about normative experiences? They must be identical with **acts** (as opposed to objects) of intuition. Such acts typically become conscious only in connection with **in**correctness or **ir**rationality.

12) World-3 vs. World-2 vs. World-1

The intertwinement of w-2 and w-3 entities is nicely summarized by Edgley (1978/1965): "Every belief must have both a history and a logic; for they are concerned each with a different element 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" (p. 24; emphasis added). As a 'logical' (= w-3) entity, one and the same **belief** may be shared by an indefinite number of persons. The same distinction is exemplified by the act vs. object of **intuition** (cf. above); and it will be further exemplified by the act vs. result of **imagination** (cf. Subsection 26-B).

The notion of belief is central to Davidson's (e.g. 1975) philosophy: "If someone is glad that, or notices that, or remembers that, the gun is loaded, then he must **believe** [= w-2] that the gun is loaded. Even to wonder whether the gun is loaded … requires [= entails] the **belief** [= w-3], for example, that a gun is a weapon, that it is a more or less enduring physical object, and so on. There are good reasons for not insisting on any particular list of beliefs that are needed if a creature is to wonder whether the gun is loaded. Nevertheless, it is necessary that that there be endless **interlocking** beliefs" (pp. 8-9; emphasis added; cf. 16B). – Notice the tension inherent to 'belief': when we concentrate on what a certain person has in mind at a given moment, belief-2 prevails; but when we speak about ("interlocking") relations of entailment and contradiction, it is between beliefs-3 that they must obtain.

Clearly, each of the three information-gathering acts mentioned in Section 11 (= sense-perception, introspection, intuition) emanates from w-2 but is directed at its own respective world. Notice in particular the self-reflective nature of introspection: starting from w-2, it goes back to w-2 (cf. Itkonen 1978: 324, 1981: 131-132, 1983a: 8-9; Katz 1981: 194-196).

The same trichotomy was already postulated by Frege (1967/1918), where 'idea' = 'content of consciousness','apprehension' = 'intuition', 'thought' = 'proposition': "One sees a

thing [= w-1], one has an idea [= w-2], one apprehends or thinks a thought [= w-3]" (p. 29). "We do not have a thought as we have, say, a sense-impression, and we also do not see a thought as we see, say, a star. So it is advisable to choose a special expression, and the word 'apprehend' offers itself for the purpose" (pp. 34-35; cf. Sect. 16 and Appendix 7).

Just as psychologism is an attempt to reduce language to w-2, so physicalism (e.g. in the guise of behaviourism) is an attempt to reduce language to w-1. Quine's naturalism is an attempt to reduce thinking to a combination of w-2 and w-1: "Naturalism does not repudiate epistemology, but assimilates it to empirical psychology… Our scientific epistemologist pursues this inquiry … Evolution and natural selection will doubtless figure in this account, and he will feel free to apply physics if he sees a way" (1981: 72). Chomsky is one of those who indeed think that they "see a way": "If [the strong minimalist thesis] were true, language would be like a snowflake, taking the form it does by virtue of natural law, in which case UG would be very limited" (2011: 26); cf. Subsection 24-B.

There are many possible ways to conceptualize the relation of language to w-1, w-2, and w-3. For instance, it is not at all unusual to 'divide' language so as to make sounds belong to w-1 and meanings to w-2: "Linguistics has always been hampered … by a basic asymmetry: … Sounds are publicly observable, … But thoughts are private; …" (Chafe 2002: 396). This is one way to justify the 'meaning = thought' equation and hence psychologism in semantics (cf. Appendix 1). But this justification proves to be spurious if we take the 'meaning = use' equation seriously. There is nothing private about what counts as the correct use of a hammer (as opposed to that of, e.g., a spade). By the parity of reasoning, it is a public fact that the words *hammer* and *spade* (or, for that matter, *hammer* and *if*) have different meanings.

In other words, precisely because "thoughts are private", they cannot be meanings: "The mentalist definition [of meaning] is of no use to anybody who wants to know whether he correctly understands some linguistic form, if only for the reason that there is no way of knowing whether the images [or concepts] he has in his mind when he produces or encounters the form are shared by his interlocutors" (Fillmore 1971: 273). Thus, as the focus of attention, mental entities must be replaced by "the rules of usage that we must assume the speaker to 'know' in order to account for his ability to use linguistic forms appropriately" (p. 275).

It is customarily said that w-2 and w-3 are **emergent** vis-à-vis w-1 and w-2, respectively. 'Emergence' is notoriously a multifaceted notion. Some of its facets have been explored in Itkonen (2016b).

13) The Basic Confusion: Construals-3~2 by Conceptualizer-3~2

As noted in Section 6, Brown (1958) and Itkonen (1970b), among others, have pointed out the obvious fact that one and the same ('objective') thing or situation may be categorized or conceptualized in many different ways. Today this phenomenon, generally referred to as **construal**, has become the centerpiece of Cognitive Grammar. Consider these sentences:

(16) The lamp is above the table
(17) The table is under the lamp

(16) and (17) have the same truth condition and yet they have different meanings. Their difference may be expressed by saying that in (16) the lamp and the table are (construed as) the Figure and the Ground, respectively, whereas in (17) the opposite is the case. Deixis provides another example of difference in construals, as shown by these sentences:

(18) John went from New York to London

(19) John came from New York to London

Construals are assumed to be (results of) "cognitive operations to which we have no direct or intuitive access" (Langacker 1991: 60). This claim contains two parts both of which can be questioned (cf. Itkonen 1997: 69-70). First, it is at least misleading to say that the (semantic) difference between (16) and (17), or between (18) and (19), is a **cognitive** fact. But it is quite uncontroversial to call it a **social** fact, i.e. a fact of the English language (= a language **shared** by all speakers of English). Second, it is patently false to say that we have no intuitive access to this (social) fact: every speaker of English understands it perfectly well (once it has been pointed out to him/her). What we have here is the near-ubiquitous confusion between w-3 and w-2 entities. All social w-3 facts obviously have their own psychological w-2 'foundation', but this is a different matter (cf. also Sections 14-15). Moreover, it is important to realize that construals connected with (16)-(19) are **different** from (possible) mental scannings connected with (14). Why? Because the latter, qua non-normative phenomena, are **not** part of the English language (cf. Sect. 11).

Alternative classifications of construals are given by Croft & Wood (2000: 56-57). Interestingly, the authors have no qualms about subsuming scannings too under 'construal'. This is understandable, perhaps, given the rather nebulous status of the very notion of 'construal'. Implemented by different "conventional images" (p. 55), construals are claimed – in the space of less than half a page – to be of "described situation", of "experience", and of "conceptual structure" (p. 52). Verhagen (2007: 53-58) enumerates as many as five different classifications of construals, in order to reach the conclusion that "a general classification scheme for construal operations is not feasible" (p. 58).

Let us have a closer look. The speaker (or hearer) is assumed to establish a construal relationship between him-/herself and a conceived situation: "The construal relationship therefore holds between the **conceptualizer** [= speaker/hearer] of a linguistic predication and the conceptualization that constitutes the predication" (Langacker 1987: 128; emphasis added). This can be illustrated with a pair of simple sentences:

(20) He fell
(21) He took a fall

(20) "involves sequential scanning of the process of falling", whereas in (21) "the same event is **construed** with summary scanning" (Langacker 1987: 146; emphasis added). Thus, we have here a 'minimal pair': one and the same ("objective") event construed with sequential vs. summary scanning. Of course, this is just one way to express the difference between a finite verb (= *fell*) and the corresponding nominalization (*[a/the] fall*). Let it be added that sentences like our (14) are described as resulting from "sequential scanning with respect to a situation conceived as being stable through time" (p. 145).

It was stated above that a construal is always performed by a conceptualizer, who is, in principle, identical with the speaker (or hearer). It is clear, however, that in connection with such basic examples as (20)-(21), 'conceptualizer' plays at most an ornamental role: it is just a (redundant) part of describing the semantic difference between finite verbs and nominalizations. The peculiar status of 'conceptualizer' is well described by Möttönen (2016: 44), as follows: "As a relational element dependent on the meaning of an expression, conceptualizer needs to be understood as an expression-dependent, non-ontological concept that has to be separated from the actual flesh-and-blood speaker/hearer, or from any analytical abstraction thereof. … How could a conceptualizer, as a mere semantic attribute dependent on other semantic attributes, be able to 'process' anything?"

In Section 11, we saw that (mental) scannings are (mental) operations performed, either introspectively or hypothetically, by individual speakers/hearers. But a look at (20) and (21)

is enough to show that, **in reality**, the distinction between sequential vs. summary scanning (or 'scanning') is just a way to describe the meaning-3 difference between finite and non-finite verbs. This confusion goes straight to the foundations of Cognitive Grammar.

At this point, an historical analogy comes to mind. Originally, generativism was based on the **axiomatic** tradition: "A grammar is a device for generating sentences. As an initial step, we take a grammar to be a sequence … of statements of the form (5) *Xi* → *Yi (i = 1 ...N)* interpreted as the instruction 'rewrite *Xi* as *Yi*', where *Xi* and *Yi* are strings. Suppose that we have such a sequence, and suppose *X1* is the element *Sentence*. Call each statement of the form (5) a **conversion**. … [W]e can construct a **derivation** of any sentence by running through the list of conversions, … until the result is a string of phones. A derivation is roughly analogous to a **proof**, with *Sentence* playing the role of the single **axiom**, and the conversions corresponding roughly to **rules of inference**" (Chomsky 1975/1955: 67; only the first emphasis in the original).

To summarize: "[T]he idea of a generative grammar emerged from an analogy with categorial systems of logic. The idea was to treat grammaticality like theoremhood in logistic [= axiomatic] systems and to treat grammatical structure like proof structure in derivations" (Katz 1981: 36; quoted ad discussed in Itkonen 2005a: 19).

In the axiomatic tradition, the highest value is **simplicity**, as measured by the number of axioms, definitions, and rules of inference. Obviously, the same was true of generativism: "We must analyze and define the notion of **simplicity** that we intend to use in choosing among grammars" (Chomsky 1957: 54; emphasis added). "[W]e may define the phonemes and morphemes of a language as the tentative phonemes and morphemes which, among other things, jointly lead to the **simplest** grammar" (*op. cit.* p. 57; emphasis added). "A grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence" (Chomsky 1965: 4). "[The child] must possess … a strategy for selecting a grammar of the appropriate form …" (p. 25). "The [language acquisition] device would then select one of those potential grammars by the evaluation measure [= simplicity measure]" (p. 32).

Generativists thought they were engaged in psychological research, namely in investigating the competence of an ideal speaker. But they succumbed to the following fallacy: "The 'ideal speaker' possesses no properties over and above those belonging to an axiomatic system; in fact, **the two are identical**" (Itkonen 1976: 214). "It is obvious that transformational grammar, with its unrealistic notion of competence, is not a psychologically real theory: the competence of the 'ideal speaker' is a 'mental grammar', but this grammar is an imitation of axiomatic systems which have been constructed for the description of **artificial** languages" (p. 215). A bird's-eye-view of this topic is given in Itkonen (2011b).

The upshot: Chomsky's 'ideal speaker' and Langacker's 'conceptualizer' are analogous descriptive pseudo-psychological artefacts: while referring to w-3, they (in the name of all-out psychologism) are wrongly taken to refer to w-2.

The expression 'conventional imagery' may have been abandoned (cf. Sect. 17), but it should have been kept because it exactly captures the confusion at issue: w-3 convention merged with w-2 imagery.

14) More on Construals

Let us imagine that A and B are replaced, respectively, by the picture of a lamp and the picture of a table. Then the semantic difference between (16) and (17) can be represented by means of the pictures P-1 and P-2, with the understanding that in each case the letter in bold-face stands for the Figure:

A A A

B **B** B

P-1: The lamp is above the table (= 16) P-2: The table is under the lamp (= 17) P-3: ?

P-1 and P-2 represent two different verbalizations (and hence construals) of the same objective situation, represented by P-3. As suggested in Section 6, the referent of P-3 exemplifies a **first**-level verbalization-*cum*-conceptualization: this must be the case because we just saw it being verbalized as the "same objective situation", to use Langacker's (1987: 110) formulation. In other words, the referent of P-3 is what the referents of P-1 and P-2, qua **second**-level conceptualizations, are construals **of**. Notice that (at least in English) there is no 'direct' sentence-like verbalization corresponding to P-3. This seems to be due to the linear character of (spoken) language, which cannot help establishing an asymmetry between what precedes (here: Figure) and what follows (here: Ground). (A neutral means of representation could be provided by a numerical coordinate system). Because objective situations, qua 'substrata' of construals, cannot be (directly) represented by sentences, it is suggested in Itkonen (2016a: Sect. 2) that they ought to be represented by **pictures** (e.g. photographs). P-3 illustrates this option.

15) Situations vs. Mental Images (or Construals) of Situations

"Our ultimate objective must be to characterize the types of cognitive events whose occurrence constitutes a given **mental experience**" (Langacker 1991: 2; emphasis added). Mental experiences are construed in terms of different types of (mental) **"imagery"** (pp. 5-12; also Croft & Wood 2000: 55). The different mental images are in turn represented by means of different types of **diagrams**. For instance, the diagrams which Langacker (1991: 25-27) uses to describe the meaning of (16) include the equivalent of our P-1.

Next, let us ask the seemingly simple question: What is P-1 (meant to be) a picture of? In accordance with what precedes, the answer must be that it is (meant to be) the picture of a mental image of the situation S described by (16), i.e. *The lamp is above the table*. But it must also be possible to have a picture of 'S itself', not just of a mental image of S; and when we ask for it, we get the **same** picture, i.e. P-1. (Notice that here 'S itself', being S verbalized by (16), must be P-1, and not P-3, which is the picture of the **pre**-verbalized "objective situation" common to (16) and (17).) This is a dilemma: we seem to be unable to distinguish between situations (= extralinguistic reality) and mental images (or construals) of situations (cf. Itkonen 1997: 68-69).

And yet these **must** be two different things: to describe a situation S **cannot** be the same thing as to describe somebody's mental image of S. Why not? For one thing, because the existence of situations (like the lamp being above the table) cannot be doubted whereas there are schools of cognitive (meta)psychology which flatly deny the existence of mental images (cf. Tye 1991: Ch. 4). More concretely, it has been known for some 100 years that there are people incapable of mental imagery (cf. the Brown-quotation in Appendix 1-B; also Chafe 2011: 111). Replacing 'mental image' by 'construal' does not help: situations are indubitable (as was just noted) whereas construals (of situations) are hypothetical and even controversial.

What we have here is (one version of) the age-old fallacy that has plagued the linguistic theorizing in the West since its beginning: Aristotle said that words signify ideas while ideas signify things; and taken literally, this entails that language has no direct contact with reality: I cannot **say** that I was bitten by a **dog**, but only by an **idea** of a dog; and it is only this 'idea' which secondarily establishes the contact with a real dog. It is surprising how tenacious this Aristotelian tradition has turned out to be, in spite of occasional denials: "Unfortunately, many Cognitive Linguists seem to believe that words do not refer to the world but to the conceptualizations" (Sinha 2017: 43; for more discussion, cf. Itkonen 1991: 175-176, 223-224, 245, 262, 274).

The solution is, to put it simply, to realize that in our normal use of language we are not speaking about conceptualizations (or construals) of things, but about things-**as-conceptualized**. The same insight is expressed by Popper (1972a/1963): "We do not choose reports about our own observational experiences, but rather reports about physical bodies which we have observed" (p. 267). It is for the same reason that we do not say that logicians describe their own intuitions of validity, but validity insofar as it is grasped by means of their intuitions. It is again for the same reason that we say – although this may be more difficult to understand – that the grammarian describes English *tout court*, and not his/her 'knowledge of English'.

In the preceding sections we have reviewed attempts to reduce philosophy, logic, and linguistics to psychology. Now we have learned (from the Popper-quotation) that all-out psychologism, if consistently applied, would also reduce **physics** to psychology. Perhaps the best-known of the analogous attempts has been the one to reduce **sociology** to psychology, in the name of 'methodological individualism'. At least two objections can be raised against this position. First, a social institution (or 'network') cannot be reduced to an agglomerate of thoughts and actions by individual persons, for the same reason that a (fishing) net is more than just a heap of lines (cf. Itkonen 1978: 127-131). Second, "neither the principle of methodological individualism, nor that of the zero method of constructing rational models [for actions], implies in my opinion the adoption of a psychological method" (Popper 1957: 142; quoted and discussed in Itkonen 2003b: 131-135). Rational models (also called 'synthetic models') are both exemplified and analyzed in Itkonen (1983a: 283-313).

The analysis of the notion of 'image/picture', exemplified by P-1, P-2, P-3, is still crucially incomplete. It will be completed in Appendix 1D.

16) Semantics Has, Primarily, Nothing to Do with "Mental Experience"

A) The Philosophical Argument

We have already seen in Section 11 that introspections cannot be about (w-3) meanings, which entails that (subjective) mental experience is not the proper (or primary) subject matter of semantics. The same thesis is formulated in more philosophical terms as follows:

> "It would be unreasonable to require **direct** conformity to [linguistic] usage in the sense that the [semantic] analysis should be confirmable by **introspections of meanings**. In other words, the requirement would be unreasonable if it meant that a negative answer to the question 'Is this what I (you) **have in mind** when I (you) use term T' would disconfirm a proposed analysis of the meaning of T. Who would maintain that whenever he identifies a figure as a circle he thinks of the concept of equality of length? Yet, this concept enters into the customary analysis of the concept 'circle', and if it be held that for this very reason the analysis does not give the **meaning** of the term 'circle', then it is obscure in what sense of 'meaning' a somewhat complicated analysis could ever express the meaning of a term" (Pap 1958: 398; original emphasis).

This is exactly right. On reflection, it is clear that there must be many people who do not understand the definition of 'knowledge' given in (4)-(6). Does this disconfirm the definition? No! There may even be people who fail to understand the necessary truth of 'If A is running, then A is moving'. That is, either they think that its truth depends on perception, or – more radically – they do not know whether it is true or false. (Perhaps they just have a vague feeling that it might be true.)

No matter! It remains a necessary truth irrespective of what these less-than-qualified people think of it. How can this be? Because what we are investigating in this very special context is a **norm**, not a piece of psychology or behaviour. This principle is easier to understand in the context of logic (cf. Sect. 8), but now we see that it applies across the board. – Wittgenstein lends additional support:

> "The meaning of a word is not the experience one has in hearing or saying it, and the sense of a sentence is not a complex of such experiences. … Suppose we found a man who, speaking of how words felt to him, told us that *if* and *but* felt the **same**. Should we have the right to disbelieve him? We might think it strange. … If he **used** the words *if* and *but* as we do, shouldn't we think that he understood them as we do?" (1958/1953: 181-182).

Pap (1958) and Wittgenstein (1958) had of course been anticipated by Frege (1967/1918): "An interrogative sentence and an indicative [= declarative] one contain the same thought; but the indicative contains something else as well, namely the assertion. The interrogative sentence contains something more too, namely a request" (p. 21). "One has [ideas like] sensations, feelings, moods, inclinations, wishes. An idea which someone has belongs to the content of his consciousness" (p. 26-27). "… thoughts are neither things of the outer world nor ideas" (p. 29). These quotations already reveal that 'thought' equals 'proposition', not 'meaning': a statement and a request may share a common proposition, but have different meanings by definition; cf. Appendix 8.

Let us single out one aspect of Pap (1958: 398). As noted by the contributions to Zlatev et al. (2008), cognitive linguistics has up to now lacked a solid **intersubjective** foundation. Among other attempts to repair this situation, there have been those seeking inspiration in Husserl's **phenomenology** (cf. Blomberg & Zlatev 2014, Zlatev & Blomberg 2016, Möttönen 2016a, 2016b). Now the following question arises: Is it reasonable to assume that an average person has actually internalized in his/her mind all (or any) of those dizzyingly intricate Husserl-type analyses? If we take our cue from Pap (1958: 398), this is **not** reasonable. It is an understatement to say that Husserl's phenomenology qualifies as "a somewhat complicated analysis" (to use Pap's own words); and it is quite unlikely, indeed impossible, that this represents what actually goes on in people's minds when they either hear or utter words and sentences. But if this is the case, what is then the alternative? This question has already been answered, namely in Section 13. Husserl-type analysis is a descriptive artefact just like an axiomatic system, analogous to conceptualizer-3. It is **not** analogous to the psychologically real conceptualizer-2. (To be sure, phenomenological analysis can be redefined and **extended** in the psychological direction, so as to unearth those "cognitive-semiotic capacities that are more basic than language, and hence necessary prerequisites for its emergence"; Zlatev & Blomberg 2016: 193).

The 'raw' mental experience stands in opposition to two things: either to its theoretical (e.g. phenomenological) analysis or to normativity. The former contrast was discussed in the previous paragraph. The following paragraph provides the transition to the latter contrast.

Because psychologism has become the order of the day, it takes an extra effort to see how implausible the 'meaning = mental experience' equation really is. **Whose** mental experience are we talking about? – Obviously, that of the linguist (or phenomenologist) him/herself. – But is s/he sure that everybody shares his/her mental experience? – Of course not! – But if people have different mental experiences, shouldn't this variation be described statistically? – Yes, it should. – So why is it not? – Because the linguist's mental experience is taken to be **representative**. – Does this mean that s/he assumes the role of an 'ideal experiencer' analogous to that of an **ideal speaker**? – Yes, it does.

In Section 9 we already saw Trubetzkoy's (1958/1939) convincing plea for the primacy of normativity. This is what he has to say, in addition, concerning the contrast between

experience and norm: “Die Zahl der verschiedenen konkreten Vorstellungen und Gedanken, die in den verschiedenen Sprechakten bezeichnet werden können, ist unendlich. Die Zahl der Wortbedeutungen aber, die im Sprachgebilde [= *langue*] bestehen, ist beschränkt, … Das Bezeichnete [= *signifié*] des Sprachgebildes besteht also im Gegensatz zum Bezeichneten des Sprechaktes [= *parole*] aus einer endlichen (zählbaren), beschränkten Anzahl von Einheiten. Dasselbe Verhältnis zwischen Sprachgebilde und Sprechakt besteht aber auch auf dem Gebiete des Bezeichnenden [= *signifiant*]. Die artikulatorischen Bewegungen und die ihnen entsprechenden Lautungen … sind unendlich, aber die Laut**normen** … sind endlich (zählbar) …“ (p. 6; emphasis added). The experiences (related to meanings and sounds) are infinite in number whereas the number of the corresponding norms is limited. Therefore it is the latter, and not the former, which constitute the proper subject matter of linguistics.

So why the near-ubiquitous confusion between norm and experience? – Although these two phenomena are quite dissimilar, there is a small subset of cases where their descriptions coincide (or seem to do so), e.g. when we describe the norm governing the use of the word *dog* and when we describe the experience which we have (or rather, which we think we **should** have) on hearing the word *dog*.

From the beginning, we have been dealing with **necessary truth**, but what, exactly, is its defining characteristic? This may be the proper place to answer this question, because doing so will further demonstrate the irrelevance of mental experience; and Arthur Pap is uniquely qualified to provide the answer:

> “[There is] a confusion of **necessity** as a **logical** property of propositions, and **certainty** as a **psychological** state. It is tacitly assumed that ‘*p* is necessary’ is equivalent to, or at least entails, ‘*p* can be known with absolute certainty’. Yet, it is easy to see that on this assumption the proposition of arithmetic ’63 x 45 = 2835’ would be no more necessary [in fact, it would be less necessary] than the empirical proposition that day always follows and is followed by night. … The more complex a deduction, the greater the probability of a deductive error, and hence the greater the probability that a future repetition of the deduction should lead to a different result. Yet we know that the proposition which we judge in terms of deductive evidence is either necessarily true or necessarily false.
>
> What marks a proposition as a priori [= necessary] is not that it is capable of being known, either as true or as false, with **absolute certainty**. It is rather that the only kind of cognitive activity which we admit as appropriate to its validation is conceptual analysis and deduction … ‘Conceptual analysis’ is here used broadly so as to cover also intuitive apprehension of relations between concepts, e.g. that ‘x is later than y’ is incompatible with ‘y is later than x’…” (Pap 1958: 125-126; original emphasis).

B) The Linguistic Corollary

The argument given in the preceding subsection justifies the following conclusion formulated by Davidson (1975): “What has been lost to view is what may be called **the autonomy of meaning**. Once a sentence is understood, an utterance of it may be used to serve almost any extra-linguistic purpose. … I agree that autonomy of meaning is essential to language; indeed it is largely this that explains why linguistic meaning cannot be defined or analysed on the basis of extra-linguistic intentions and beliefs” (p. 17).

What Davidson is defining here is the semantics of *langue*. Whatever remains outside of it, is subsumed by the semantics of *parole* (which in turn contains a conglomeration of more or

less linguistic and/or extralinguistic elements). Thus, 'extra-linguistic' means here something like 'dependent on the extra-linguistic context'.

Palmer (1996) offers an eloquent confirmation: "[I]f all meaning were to emerge only through discourse [= *parole*], then all meaning would be inchoate or momentaneous. In practice, words would have no dependable utility and dictionaries would be irrelevant and entirely useless. The stable, consensual meanings and patterns evident in cultures, traditions, and natural languages [= *langue*] would never come into play" (p. 39).

17) Concepts-3 vs. Concepts-2

The ambiguity of *concept* is an inexhaustible source of confusions, because this term refers to the central inhabitant both of w-3 and of w-3. It is advisable to clearly distinguish between concepts-3 and concepts-2. Semantics primarily qualifies as conceptual-3 analysis, but the same is true of intuition-based linguistics in general, or of what is often called 'autonomous linguistics': this is the 'core' of linguistics, concerned with dealing with the Saussurean *langue* (cf. Itkonen 1978). The 'core' is surrounded by such observation- and/or experimentation-based subdisciplines as psycholinguistics, sociolinguistics, and diachronic linguistics, concerned with dealing with the various aspects of the Saussurean *parole* (cf. Itkonen 1983a). This topic will be further elucidated in Appendix 6.

According to Langacker (2016), Cognitive Grammar espouses "the conceptual nature of linguistic meaning" (p. 467). But, here as elsewhere, the exact meaning of 'conceptual' remains to be determined. Statements like the following one do not help at all: "It is pointless to argue whether language is a mental or a social phenomenon, because obviously it is both …" (p. 468). On reflection, this is not just uninformative, this is wrong.

What Langacker (2016: 467) is saying about Cognitive Grammar still "conform[s] to the basic vision of its formulation (Langacker 1987)". Now, consider these aspects of the "basic vision": "Grammar (like lexicon) embodies conventional **imagery**" (p. 39; original emphasis). "Lexicon and grammar are storehouses of conventional imagery" (p. 47). "[S]emantic structure is based on conventional imagery …" (p. 111). – What we have here is a **contradiction** (as I privately pointed out to Langacker already in 1992), because conventions are social whereas images are mental (= non-social). Consider this analogy: "It is pointless to argue whether, in plane geometry, we have to describe circles or squares, because obviously we have to do both." But from the self-evident fact that that there are both circles and squares, it does **not** follow that there are round square. The notion of 'round square' is a *contradictio in adiecto*, similar to 'conventional imagery'.

How should this contradiction be eliminated? In the way suggested, again and again, in the preceding sections: We have to make a clear distinction between what is social (= concepts-3) and what is mental/psychological (= concepts-2) and to stipulate, in accordance with everyday thinking, that language is primarily a **social** entity which, as such, possesses a **psychological** substratum, just like all social entities do. It is significant that, in the context of theoretical linguistics, the requisite notion of 'social' has remained undefined. It has been taken for granted that people know what it means. But they do not. My own definition of 'social' was given in Section 10.

Let us add that concepts-2 and concepts-3 are designated as 'psychological concepts' and 'discursive concepts', respectively, by Sinha (2017: 44). As for the notion of 'discursive concept', he correctly notes that "Lakoff and Johnson do not discuss this at all" (p 46).

The expression 'conventional imagery' may have been abandoned in the early 1990's. No matter. The contradiction remains exactly the same as before: what is now claimed to be conventional (= social) is also claimed to be "a pattern of processing activity" (= psychological, i.e. non-social); cf. Langacker (2007: 424, and here Sect. 20).

Talmy (2007) distinguishes between three principal ways of data-gathering: "introspection, corpus analysis, experimental method" (in addition to "audio- and videographic analysis"). Langacker (2016) repeats the same trichotomy: "introspection, corpus, experiment" (p. 468). In other words, whatever is not perception of space and time, is subsumed under a single notion of 'introspection'. Thus, no reason is seen to distinguish between what is intersubjective or social-normative (= accessible to intuition) and what is subjective (= accessible to introspection), contrary to what has been argued here in Sections 10-15..

18) Summarizing the Role of the Three Worlds in Linguistic Description

The existence of w-3 entities is always involved in linguistic description: either they are the target itself or their existence is presupposed. Let X = 'English relative clause'. Now, without some precedent knowledge of **what** X is (= autonomous linguistics), it impossible to investigate **how** X is perceived or produced or stored in memory (= psycholinguistics), **how** X is used under different circumstances (= sociolinguistics), or **how** X has changed (= diachronic linguistics); and once the how-questions have been answered, it becomes possible to ask the ulterior **why**-questions: What is it? –X! – How is X perceived? – In the way Y! –Why in the way Y? – Because of Z! Hence, 'what? > how? > why?'

In one way or another, every semantic investigation involves conceptual-3 analysis, i.e. the use of entailments and contradictions. To give a simple example, Langacker (1987: 293) claims that the concept 'father' "fully conveys" the concepts 'male' and 'parent'. There are two mistakes involved here. First, contrary to his own methodological pronouncements, Langacker is **not** dealing here with concepts-2, but with concepts-3, in exactly the same sense as Pap (1958). (If meanings really were concepts-2, i.e. subconscious cognitive occurrences, semantics as we know it would be impossible.) Second, Pap (1958) says that 'father' **entails** both 'male' and 'parent', whereas Langacker says that these two concepts are **conveyed** by 'father', which is much less informative (and potentially misleading). If the meaning of 'father' has to be described, biological/cultural (= encyclopedic) attributes of 'father' may be added *ad libitum*, as soon as (but not before!) the conceptual-3 core a.k.a dictionary definition (= 'male parent') has been established.

The same result was reached in Section 4 in connection with how the meaning of *triangle* is supposed to be described.

Let us consider once more our w-3 analysis of 'knowledge', given in (4)-(6). It can be freely complemented, **but not falsified**, by the most recent results of empirical psychology and/or computer science. It can only be falsified by the kind of ('philosophical') w-3 counterexample discussed by Lehrer (1974: 18-23), which, to be sure, may be ignored in the present context because of its rather contrived nature.

Now it is also easy to see, more clearly than before, why Johnson's "force of logic" is an incoherent notion: it conflates two entirely different things: on the one hand, the **normative** (w-3) necessity between the premises and the conclusion; on the other, the **causal** (w-2) connection between starting points and end points of mental processes (cf. also Appendix 5)

19) The Need for Truth

Our analytic implications can be reformulated in **truth-conditional** terms: "'A is a triangle' is true (if and) only if A is a three-sided polygon." But has this type of 'objectivist' semantics not been conclusively discredited? Not at all. This is again one of the many misunderstandings that seem to pullulate in today's cognitive linguistics. To be sure, the use of truth-conditions should not be pushed too far because, as briefly suggested by (13)-(16), there is a

wealth of semantic phenomena that they fail to capture. Still, they do remain at the core of assertion-meanings (cf. Itkonen 1983a: 152-164, 2008b: 286-287).

More generally, it would be just stultifying to deny the fundamental role that **truth** must play in any kind of semantic analysis: "Einen Satz verstehen, heisst, wissen, was der Fall ist, wenn er wahr ist" (Wittgenstein 1969/1921: 4.024). "Understanding a statement must begin with an attempt to believe it: you must first know what the idea would mean if it were true" (Kahneman 2011: 81). This is plain common sense; but let us pursue the topic a little farther. Being able to generate truth-conditions for any assertion *p* is not enough to show that the corresponding meanings have been understood as well. (A machine can be programmed to do this.) What is required, instead, is for the semanticist to be able construct a "verification-in-principle" for *p*, which involves telling a "coherent and acceptable story" about *p* and eventually manipulating (the types of) things mentioned in *p.* This is an effective way to bridge the "gap" between language and extralinguistic reality, thus guaranteeing that even if semantics must start as language-internal, it does not stay that way (cf. Itkonen 1983a: 117-123, 311-313; also Sect. 6).

20) The Need for Causality

One the one hand, meaning is **use** (cf. Sect. 11). On the other hand, meaning, at its core, consists of **necessary** connections (cf. Sect. 2). How are these two aspects to be reconciled? Quite easily: the common denominator is provided by **normativity** (norms being w-3 entities): meaning is, more precisely, **correct** use; and it is **correct** to endorse analytic truths and **incorrect** to endorse analytic falsehoods (= contradictions). Criteria of (in)correctness exist only in a 'public space'.

The so-called private-language argument demonstrates that the norms/rules of language must **necessarily** be of social or public character. Why? Because a consistently private language is logically impossible. Why? Because it lacks reliable criteria of (in)correctness (cf. Itkonen 1978: 109-113; 2008a: 280-283). Chomsky disagrees: "As for the fact that the rules of language are 'public rules', this is indeed a **contingent** [= non-necessary] fact" (Chomsky 1976: 71; emphasis added; for discussion, cf. Itkonen 1983a: 227-229, and immediately below).

Cognitive Grammar prefers to speak of 'conventions', rather than of norms/rules. Are these conventions necessarily public or not? They are necessarily non-public, as shown by the following chains of definitions given in Langacker (2007: 424-425): 'language' = 'inventory of conventional linguistic units'; 'unit' = 'pattern of processing activity' = 'cognitive routine'. Now, cognitive routines are "automatic" subconscious processes; and their "degree of conventionality" is claimed to depend on "how widely they are **shared** among speakers" (emphasis added). It follows that Langacker's notion of **language** is open to the same criticism as Chomsky's:

> "The reference to the similar cognitive structures developed by different people shows that, in Chomsky's [and Langacker's] sense, two speakers share the same language just as two pieces of iron share the same internal structure. In this type of situation, when A and B share C, there are in reality **two** (similar) C's, viz. C-1 possessed by A and C-2 possessed by B. It is a matter of necessity, however, that successful communication (which Chomsky explicitly mentions) requires a stronger sense of 'sharing', i.e. the possibility of appealing, in case of doubt, to rules that are possessed **jointly**, and not just separately, by the speakers. Consequently, two speakers in reality share the same language in the same sense in which they might share a secret. In this type of situation, when A and B share C, there is only one C which is possessed both by A and by B. Since there is only **one** language, to which all of its speakers equally have access, it is, contrary to the Neo-Cartesian position

expressed by Chomsky above, a **necessary** fact that its rules are public rules. That the rules are public, means that they exist as objects of **common knowledge**. It is very important to add that A and B most probably **also** share some psychological mechanism [= cognitive routine] D which enables them to share C; but D is shared by them in the former, weak sense of 'sharing', which means that there exist two (presumably similar) D's, viz. D-1 possessed by A and D-2 possessed by B" (Itkonen 1983a: 228).

It is clear that the Wittgenstein-type 'use' is *toto caelo* different from Langacker-type 'usage'. The former is *langue*. The latter is *parole*, but in a rather confused sense: it is not **actual** usage/*parole* but **imaginary** one, as shown by the fact that all the data analyzed e.g. in Langacker (1987) follow the generativist tradition in being invented by the grammarian him-/herself. Imaginary use is intuition-based in character. It is on the basis of this type of data that both generativism and cognitivism, while seeming to disagree with each other, claim to be "part of cognitive psychology". The type of linguistics that has a **legitimate** claim to be so named will be described in Section 23 below.

The fact that meaning is use should draw attention to the fact that semantics is ultimately embedded in the general **theory of (inter)action**: for instance, declaratives, interrogatives, and imperatives, qua formal entities, encode the **actions** of asserting, questioning, and requesting, qua semantic entities. (And let us recall the 'actionist' nature of our 'weakly verificationist' semantics; cf. Sect. 19.) This in turn raises a few important questions. First, what **causes** people to act (e.g. to speak)? Second, how do we **describe** causality? It is amazing how seldom these questions have been asked, let alone answered.

Let us tackle the second question first. Any type of genuinely **empirical** linguistics must deal with linguistic behaviour in space and time; this exhibits considerable **variation**; variation must be described **statistically**; the basic question about spatio-temporal phenomena concerns their **causation**. *Ergo*: "Empirical linguistics is supposed to be concerned with regularities exhibited by **actual** linguistic behaviour of **real** (i.e. non-ideal) speakers . … I state it as a desideratum of any adequate methodology of empirical linguistics that it should provide causal models for linguistic behaviour**" (**Itkonen 1977b: 29; original emphasis). The requisite notion of **statistical-causal model** is exemplified in Itkonen (1977b) and (1980). Two other types of causal model (namely, 'postulational' and 'synthetic') are added in Itkonen (1983a: Ch. 6).

Next, let us repeat the first question: what causes people to act? It is important to realize that **this** question cannot be answered by any statistical descriptions (which, in spite of the 'causal' element, still provide only data in need of explanation). Explicit and comprehensive answers, formulated in terms of 'rational (= goal-*cum*-belief) explanation', have been given in Itkonen (1981b), (1983a), (2013), (2013-2014). For the most part, of course, we are dealing here with **unconscious** rationality.

21) Rational Explanation

Rational explanation (= RE) may be represented by means of the following schema:

(22) {[G:Y & B:(X => Y)] |– G:X} ==> X; and if all goes well, X => Y

Outside the curly brackets X and Y stand, respectively, for actions and goal-states in space and time, while inside the brackets, as a first approximation, they stand for corresponding mental representations. The prefixes G and B stand for the propositional attitudes of having-as-goal (or simply wanting) and believing. The schema says that if someone has the goal Y and believes

that there is an action X (which s/he is capable of performing and) which is the **best** means to achieve X, then s/he must intend (or want) to do X: This is "the principle of transmission of intention from ends to means" (von Wright 1978/1970: 52). Having this goal and this belief will then **cause** him/her to do X (unless s/he is somehow prevented from doing so or changes his/her mind). What is inside the curly brackets constitutes the **reason** for doing X; and "reasons are causes" (Davidson 1968/1963: 87).

The long double arrow ==> stands for mental causation while the short one => stands for general causation. The entailment sign |– expresses conceptual necessity: given this goal and this belief, the agent **must** want (or intend) to do X. But now we meet the problem first encountered in Section 8: If the entailment sign is meant to express that the agent is moving from one psychological state to another, then it cannot express genuine necessity because this does not exist in w-2. The only coherent option is to assign to goals and beliefs an **ambiguous** status which makes them inhabitants both of w-3 and of w-2. It is in their former capacity that they can have conceptual-3 relations (and be shared by several people), whereas it is in their latter capacity that they can be involved in processes of mental causation. This is the "Janus-like character" of rationality (cf. Itkonen 1983a: 177-181), confirmed by Edgley (1978/1965: 24): "Every belief [and goal] must have a history and a logic" (cf. Sect. 12). This also answers von Wright's (1978/1970: 47) (inconclusive) worry: Are we dealing with "a form of causal efficacy" or with "logical compulsion"?

In practice, (22) can be abbreviated, and simplified, as *G & B => A*: 'the goal-*cum*-belief constellation (= reason) causes the action'. But there are additional complications.

Characterizing X as "the **best** means to achieve Y", as was done above, is a way to circumvent the following question: while X is certainly the (intended) **cause** of Y, is it (meant to be) **sufficient** or **necessary** for Y to come about? On the former interpretation, X => Y is verbalized as 'if X, then Y' (i.e. as the standard material implication), whereas on the latter interpretation X => Y is verbalized as 'only if X, then Y'. In everyday life, this distinction may not be very important, but in the theoretical analysis of actions it must be accounted for. For my part, I follow Kenny (1978/1975) in choosing the former alternative, for reasons that will be discussed much more fully in Appendix 5. Yet it is good to spell out right now one of the corollaries of this choice.

If X is a sufficient (and not necessary) cause of Y, this leaves open the possibility that there are **other** similar causes as well, i.e. what we have is not just X, but, e.g., X-1 **or** X-2 **or** X-3. Because none of these three alternatives is necessary, none is (literally) **entailed** by *G & B*. What is entailed is, rather, the **disjunctive** action *X-1 V X-2 V X-3* (cf. Itkonen 1983: 174).

The obvious alternative to RE is to use lawlike (= either deterministic or statistical) explanations. In Itkonen (1983a: 95-102) this alternative is first discussed in detail and then discarded in favour of RE. To put it briefly, my reasons for opting for RE are those summarized by von Wright (1985/1976: 63): "There simply are no 'covering laws', to be either confirmed or disconfirmed, that could be utilized to predict actions. The claim that certain types of intentions and beliefs typically produce a certain type of behaviour is not an empirical generalization based on observations or experiments. This claim is a necessary truth that is immediately accepted by anybody familiar with the concepts involved."

But notice that, in conformity with Section 2, "anybody familiar with the concepts involved" does not mean just **anybody**, but only somebody trained in philosophical thinking. In other words, "the concepts involved" are not just those pretheoretical concepts which are expressed by words of our ordinary language such as *action, goal, belief*, etc. Rather, they are theoretical concepts based on these words but defined and re-defined in the course of a long tradition which goes back at least to Aristotle:

> "Again, wish relates rather to the end, choice to the means; for instance, we wish to be healthy, but we choose the acts which will make us healthy … " (*Ethica*

Nicomachea: 1111b, 25). "We deliberate not about ends but about means …" (1112b, 10-20). "[People] assume the end and consider how and by what means it is to be attained; and if it seems to be produced by different means, they consider by which it is most easily and best produced; … for when we have decided as a result of deliberation, we desire in accordance with our deliberation" (1113a, 10). "The origin of action – its efficient, not its final cause – is choice, and that of choice is desire and reasoning with a view to an end" (1139a, 30). – For discussion, see Itkonen (2003b: 49-60).

RE is based on the use of **empathy**; for discussion, see Itkonen (1983a: 217; 2008a: 25-30; 2013a: 58-60).

It goes without saying that, as shown by our constant reference to **goals**, REs are (broadly) **teleological** in nature. In view of this, it is interesting to see how William James summarized the entire field of psychology towards the end of the 19th century: "The chief result of all this more modern view is the gradually growing conviction that **mental life is primarily teleological**; […]" (1948/1892: 4; original emphasis). This characterization is all the more interesting, given this opening proclamation: "**Psychology is to be treated as a natural science** in this book" (p. 1; original emphasis). So why is it that today's cognitive linguistics pays no attention at all to teleology? Does this mean that cognitive linguistics endorses a view of 'mental life' that is totally different from the one held by James? I doubt that there is any intelligible answer to this question. (You cannot answer a question that you fail to understand.) Perhaps the anti-teleological attitude is just a hang-over from the reign of generativism (one among many, by the way).

22) A Note on Typology

In Itkonen (1991) the four principal traditions within the 'universal history' of linguistics, namely those in India, China, Arabia, and Europe, are evaluated in terms of how they deal with the 'language – mind – reality' trichotomy (see also Itkonen 2013b). As far as this trichotomy is concerned, psychologism reduces language to (linguistic) form and identifies meaning (= semantics) with mind (= cognition), whereas the anti-psychological position equates language with form-*cum*-meaning, keeping meaning/semantics separate from cognition. In general, the latter position is (implicitly) endorsed by representatives of **typological** linguistics, for instance, by all contributors to Bohnemeyer & Pedersen (2011). This is shown by the fact that the point of departure for their entire discussion is the dichotomy between "language **and** psychology", i.e. semantics **and** cognition (pp. 2-7). Depending on the case at hand, and on one's theoretical predilections, the distance between semantic and cognitive categories may be considered either large or close to nonexistent.

Let us illustrate this issue by means of a couple of examples from Kalam, a Papuan language, given by Pawley (1987) and Pawley & Lane (1998):

(23)

mnek	am	mon	pk	d	ap	ay-a-k
morning	go	wood	hit	get	come	put-3SG-PRET

(23') The next morning he fetched firewood

(24)

kab	añan	ap	yap	pk-e-k	pag-p

stone glass come fall hit-DS.ANT-3SG break-PRF.1SG
(24') The stone broke the glass

In the **serial-verb** construction of (23), the clause-final inflected finite verb *ay-a-k* is preceded by 4 uninflected verb roots. All 5 verbs have the same subject (= 3SG) while *mon* ('wood') is the object of the verbs *pk-*, *d-*, and *ay-*. (24) is a **chain-structure** constituted by a dependent verb (= DV) and a head verb (= HV). Typically, both DV's and HV's of Kalam are serial-verb constructions: the DV of (24) = *ap yak pkek* but the HV of (24) = *pagp*, i.e. it happens to contain only one unit. Chain-structures exhibit **switch reference**, here: different subject (= DS), i.e. the subject of the DV component *pk-* ('to hit') is *kab* ('stone') while the subject of the HV *pag-* ('to break.INTR') – as well as of the serial components *ap* and *yap* – is *añañ* ('glass'). DS (plus anteriority) is encoded on the DV.

Pawley (1987: 357) seems justified to claim that sentences like (23) and (24) exemplify a "different logic" than their English counterparts (23') and (24') insofar as "they are clause-like but something more than a clause"; or, alternatively, each of them is "a kind of extended single clause". The fact that Kalam displays a much higher degree of 'granularity' than (e.g.) English is directly reflected in its sentence structure. – For a discussion of Kalam examples in particular and of chain-structures in general, see Itkonen (2009: 174-187, 297-309).

Crucially, while both Givón (1991) and Pawley (2011) agree that Kalam and English, as exemplified by the contrast between (23)/(24) and (23')/(24'), are **semantically dissimilar**, they disagree as to the proper interpretation of this fact. For Givón, Kalam and English are **cognitively similar**, which more generally entails that language, instead of directly expressing cognition, just exhibits some sort of formal surface variation. For Pawley, by contrast, Kalam and English are (not just semantically but also) **cognitively dissimilar**, which entails that linguistic/semantic differences reflect cognitive ones.

Croft (2016), for instance, endorses the 'semantic = cognitive' equation, as shown by the fact that he speaks of "concepts" (rather than meanings) being "encoded by grammatical elements". In so doing he at least implicitly sides with Pawley (2011).

The position of Cognitive Grammar on this issue has been well summarized by Zlatev (2007: 337): "From the premises 'semantic structure is language-specific to a considerable degree' (Langacker 1987: 2) and 'cognitive grammar equates meaning with conceptualization' (p. 5), it follows that conceptualization is language-specific. … [This view] does imply a fairly strong version of linguistic relativity, although this is seldom acknowledged."

To sum up: In typological linguistics, meaning and cognition are two different things whereas in cognitive linguistics they are one and the same thing. But this is not a black-and-white issue. Certainly even the proponents of the former position are (or should be) willing to admit that radical differences in linguistic structure exert **some** influence on thought.

23) Presuppositional Hierarchy (or Continuum) of Descriptive Methods

Being concerned with w-3, w-2, and w-1, linguistics is bound to make use of a multiplicity of distinct descriptive methods. Is it feasible to arrange these in some transparent logical order? Gonzalez-Marquez et al. (2007) seem to answer this question negatively: the different methods just lie there scattered, as it were. A more informative answer can be given, for instance, by considering the structure of eye-tracking experiments on **agreement** reported by Vainio, Hyönä & Pajunen (2003) and (2008).

It turns out that if, within a Finnish sentence context, two inflected words (= ADJ + N) are united by explicit agreement markers, they are read more rapidly than one single inflected N, which is totally unexpected. (By contrast, it is fully to be expected that two inflected words with

agreement are read more rapidly than two words without agreement, as exemplified by an inflected N preceded by an uninflected ADJ.) These experiments are very significant because they provide a **functional explanation** – in the sense of Itkonen (2013) – for the existence of agreement: instead of being redundant, as claimed by Haiman (1985: 164) and many others, it is there **in order to** facilitate comprehension.

But what has happened **before**? What do these experiments **presuppose**? First, the words involved must be chosen so as to be equally frequent, which requires the use of a sufficiently large **corpus**. Second, there must not be any semantic or stylistic differences between the words, which is ascertained by the use of sufficiently detailed **questionnaires** to be answered by the participants, more precisely by their **introspective** reports. It is only after these preliminaries that the actual **experiment** can be carried out. But before anything else, of course, it is the analyst's **intuition** that selects the candidate words from among the **correct** words of Finnish. Moreover, it is intuition which provides "certain universal editing rules to take care of stammering and false starts" (Labov 1972: 203), rules that have to be applied to any would-be (spoken) corpus. In other words, intuition constitutes a sort of **normative filter** through which each and every corpus has to pass. Written corpora have their own editing rules (which today exhibit a rather complex internal structure of successive stages).

Thus, we end up with the following kind of both temporal and logical **hierarchy of descriptive methods**, where the items to the right presuppose those to the left (cf. Itkonen & Pajunen 2010: 95-113; anticipated by Itkonen 1977a, 1980):

(25) intuition > corpus > questionnaire > experiment

The role of introspection remains invisible in (25). Being involved in 'questionnaire', it is clearly different from the role of intuition.

It is only the type of linguistics exemplifying (at least) the first two stages of (25) which genuinely deserves to be called **usage**-based, because it is based on real (as opposed to imaginary) corpora (cf. Sect. 20). Why is this? Because it is (or ought to be) self-evident that **actual** usage necessarily contains **variation** and therefore demands **statistical** description. If you have no statistics, you are not 'usage-based' at all, or only in some Pickwickian sense (cf. also Appendix 6). Next, there needs to be, within statistics, an ascent from description to **explanation**; and this in turn necessitates an account of **statistical causality** as defined, in conformity with Salmon (1971) and Suppes (1984), by Itkonen (1980: 349-363; 1983a: 24-31, 260-278; 2003a: Ch. XVI). Statistical causality, in turn, remains incomplete without RE (cf. Sect. 21).

Janda (2016) pleads for a "quantitative turn of cognitive linguistics", and she is perfectly right to do so. Resorting to the use of quantitative/statistical methods is the only way to justify the term 'usage-based', or to correct the mistake of having applied this term to intuition-based Chomsky-type analysis of self-invented example sentences, as was done in Langacker (1987), for instance. But, of course, we should not forget that the real 'quantitative turn' in linguistics took place at an earlier date, i.e. in the1960's, thanks to the efforts by William Labov and his variationist school. It was precisely this development that I, for one, had in mind when I spoke of 'sociolinguistics' and 'quantitative analysis' in the following publications: Itkonen (1977a), (1977b), (1978), (1980, written in 1977).

In bringing long-overdue order into the methodological chaos, the schema of (25) also demonstrates that Labov-type sociolinguistics, just like any other viable version of usage-based theory, i.e. theory based on **actual** usage, is **ultimately** based on intuition, namely in the sense that its data must have passed through the corresponding 'normative filter'. (Today's technology in fact necessitates the use of several such filters.) This is also why Langacker's (2016) following statement is mistaken, or at least misleading: "Qualitative and quantitative research are complementary …" (p. 473). Now, 'complementary' entails a **symmetry** of mutual relations, as

when it is predicated of a pair of angles having the sum of 90 degrees. But when we consider "qualitative vs. quantitative analysis in linguistics", to quote the title of Itkonen (1980), what we have is an **asymmetrical** relation. Let us have some historical documentation that predates the birth of cognitive linguistics:

> "The relation between linguistic intuition and linguistic corpus is certainly central to the theory of linguistics. It is only the more surprising that that this relation has never been represented in an explicit and self-consistent way. … In this paper I intend to show … what, precisely, is the relation of sociolinguistics to grammar [= autonomous linguistics], or of the quantitative linguistic analysis to the qualitative one. The results are directly generalizable to other human or social sciences as well" (Itkonen 1977a: 239).
>
> "Labov (1972: 203) states explicitly that sociolinguistic data are not described as such but are, rather, processed in accordance with 'certain universal editing rules'; … Now, I claim that Labov does the editing … only on the basis of his knowledge of the **rules of language**, as I use this term. In this sense, then, rules of language, or knowledge thereof, constitutes a **precondition** of sociolinguistic research. … [G]rammar investigates a precondition of sociolinguistics …" (p. 243).
>
> "Consequently, sociolinguistics is empirical only within the limits of normativity, …" (p. 246).
>
> "There must obviously be an area which **mediates** between intuition and observation, or between rule and action. Not surprisingly, this area is diachronic/geographical/social **variation**. Grammatical data is a conceptual precondition of socio- and psycholinguistic data. Therefore grammar is a 'transcendental' science in relation to socio- and psycholinguistics in precisely the same way as Husserl's 'phenomenological psychology' and Winch's 'aprioristic sociology' are transcendental sciences in relation to experimental psychology and empirical sociology, respectively" (Itkonen 1980: 344).

Recently a friend of mine expressed his uneasiness with the 'anti-psychologistic stance', pleading instead for some sort of 'methodological continuum'. I submit that what he had in mind was (some equivalent of) our schema (25). His misunderstanding was most probably due to the fact that I characterize the (non-psychological) w-3 part as the 'core' of language and its description as the 'core' of linguistics. But all this can, and should, be reformulated in terms of a continuum, as in (25). The **core** is synonymous with one **extreme** (of a continuum), namely the one that is **presupposed** by everything else. Describing its one extreme does not mean claiming that the continuum does not exist. **Look** at (25)! Do I deny the existence of corpus, questionnaire, and experiment? No!

Taken as a whole, Pap (1958) constitutes an impressive argument to the effect that (analytical) philosophy is an **intuitional science**, summarized by the very last sentence of this monumental work: "The distrust of the 'intuitional' basis of analytic philosophy, therefore, is rooted in nothing less than an imperfect understanding of scientific method – in the broad sense of 'scientific' in which philosophy can be scientific" (p. 422).

Itkonen (1978), in turn, constitutes a large-scale argument to the effect that grammatical theory (= autonomous linguistics), philosophy, and formal logic exemplify, with differences in emphasis, one and the same notion of intuitional science. Katz (1981) seemingly advocates the same thesis, but there is this all-important difference between the two of us that he regards grammatical theory as identical with linguistics *tout court* whereas my notion of linguistics is a more comprehensive one; and, within it, I draw a fundamental boundary between non-causal (= autonomous) linguistics and causal (= non-autonomous) linguistics (cf. Itkonen 1983b, and here

Sect. 20). This cannot be repeated often enough: asserting the existence of autonomous linguistics entails, not denying but affirming the existence of **non**-autonomous linguistics as well.

24) The Fallacy of Empirical Philosophy

Up to now, whatever philosophical views I have discussed are those that I personally endorse. But now I have to tackle more directly the kind of ('empirical') philosophy that has been thought to underlie psychologism (which I reject). This will be done in Subsections A-B. Subsection C will address the possibility of a different (= anti-psychologistic) type of empirical philosophy. Subsection D will add a note of historical-methodological nature.

A) Embodied Realism: Lakoff, Johnson, and Nuñez

Johnson & Lakoff (2002) make large claims for **embodied realism**. As they see it, it is thanks to this brain-child of theirs that "Anglo-American analytic philosophy becomes untenable, as do other traditional approaches to philosophy" (p. 247). Why? Because, among other things, no other philosophy is allegedly able to "explain how [we] … can reason abstractly" (*ibidem*). But this claim was already falsified by the findings of our Section 8. Analytical philosophy (qua representative of 'objectivism') and "formal deductive logic" are castigated by Lakoff (1987: 7) for there alleged neglect of **imagination**. The falsity of this claim has been demonstrated in excruciating detail in Itkonen (2018). On these issues, embodied realism appears inferior to whatever philosophy (of reasoning) preceded it. Let us now further validate this result.

The program of embodied logic has been extended to mathematics as a whole by Lakoff & Nuñez (2000). Johnson (1987: 39) introduced the CONTAINER schema to define **negation** as "being outside of a bounded space" (i.e. a container). In the same spirit Lakoff & Nuñez (2000) propose the following "grounding metaphor": "Sets Are Containers". This is a very old idea which underlies e.g. the use of Euler circles. If we assume three concentric circles in the decreasing order A > B > C, we have a perspicuous way to illustrate (the entailment expressed by) the transitivity of **implication**: 'If every C is B and if every B is A, then every C is A'; cf. (4)-(6).

"Embodied arithmetic" is supposed to explain how the following basic notions are taught to 4-to-6-year-old children: **Number** 3 emerges from comparing a set of three apples and a set of three books. The **addition** '3 + 2 = 5' emerges from putting together a set of three books and a set of two books. The **subtraction** '3 – 2 = 1' emerges from taking the (smaller) set of two books away from the (larger) set of three books. An **infinite** number results from a process of counting which is just like a finite process, except that it "goes on and on". Notice that here these notions were said to be "taught to", rather than "learned by", children. This was deliberate. Because there are cultures with (practically) no numbers, no addition, and no subtraction, these notions are **not** instinctively and universally "learned" by children.

This account of teaching arithmetic is too simple, as Geach (1957), for instance, has pointed out. It is not the case that in being taught (and hence, learning) how to count, one just **attends to** the number of things, e.g. apples. Why? Because "a number is essentially a number **of** a kind of things; things are numerable only as belonging to a kind of things" (p. 28). Let us replace three apples by a (written) poem. Here, before reaching any definite number, one clearly has to decide **what** to count: lines, sentences, words, or letters? It is only the apparent simplicity of the situation with three apples which makes it difficult to see that the two situations are in reality identical. "Thus number-concepts just cannot be got by concentrating on the number and abstracting from the kind of things that are being counted" (*ibidem*). It follows that number-concepts must be

interdependent with thing-concepts: for instance, one and the same 'objective' situation may be conceptualized either as 4 (lines) or as 2 (sentences).

Additional problems arise when more advanced mathematics should be clarified by means of such "plausible metaphors" as used by Lakoff & Nuñez, simply because "there are numerous errors of mathematical fact" (Henderson 2002: 75; identically Voorhees 2004: 83). Moreover, "it is not enough to say that something is metaphorically generated and therefore is a legitimate mathematical idea. It must also be demonstrated that the idea generated is free from contradiction" (Voorhees 2004: 85). One is reminded of Frege's 'set of all sets', which, in spite (or because) of its obvious metaphorical grounding, turned out to be self-contradictory.

For a professional mathematician, "the book does a disservice both to cognitive science and to mathematics" (Henderson 2002: 75). From a more philosophical point of view, it needs to added that there are more convincing ways to avoid Platonism in linguistics and/or logic than going all the way down to neurology; for instance, social-normative constructivism: "We as **individuals** construct sentences and proofs in accordance with **norms** entertained by us as a **community**" (Itkonen 1983b: 243; second emphasis added).

On reflection, the criticism of Johnson & Lakoff (2002) is apt to demonstrate the impossibility of all-out psychologism is a slightly new way. The authors emphasize that "our abstract concepts get significant parts of their ontologies and inference patterns via multiple, often **inconsistent** metaphors" (p. 247; emphasis added). But, as noted by Voorhees (2004:85), it is the very essence of mathematical (and, in general, scientific) thinking to get rid of inconsistencies and contradictions. This is the **norm** that we must obey, irrespective of what is or is not the case in our cognitive unconscious or in our cortical areas responsible for higher cognitive operations.

Bertrand Russell once put this point quite well: "The problem for epistemology is not 'why **do** I believe this or that?' but 'why **should** I believe this or that?' … I observe that men err, and I ask myself what I must do to avoid error. Obviously one thing that I must do is to reason **correctly**, …" (1967/1940: 14; the last emphasis added; quoted and discussed in Itkonen 2003b: 75). This position was later reaffirmed by Cohen (1986): "So the exercise of intelligence requires not just the possession of a well-attested set of beliefs, but also the conscious or unconscious possession of a set of **norms** or principles for determining whether or not a given set of beliefs is well-attested" (p. 44; emphasis added).

Marxists used to brush off each and every form of criticism by referring to the 'fact' that Marxism is misunderstood by anyone who does not accept it without reservations: not to accept Marxism was *eo ipso* not to understand it. Supporters of embodied realism (who claim to have conclusively refuted each and every other type of philosophy) are guilty of the same circularity: anyone who disagrees with them is just out-of-date. In reality, however, all-out psychologism is not avant-garde, it is old hat.

B) Science as Philosophy: Naess, Chomsky, and Quine

Although philosophy is permeated by normative considerations (as we just saw), the normative dimension is entirely lacking in Johnson & Lakoff -type philosophizing, which seems anxious to substitute empirical psychology and, ultimately, neurobiology for what used to be called philosophy. That is, (most of) the philosophical questions may remain the same, but now an attempt is made to answer them, ultimately, by recourse to neurobiology.

It is not without interest to note that, in spite of much-heralded antagonism, Johnson and Lakoff hold the same view of philosophy as Chomsky does. Let us illustrate. When Wittgenstein carries out conceptual analysis by means of his standard device of inventing 'alien tribes' that are meant to cover the entire spectrum of conceivable ways of acting, some of which are outrageously queer, Chomsky (1969) first earnestly asserts that "these are, surely, empirical claims"

(p. 276), and then proceeds to refute them by the findings of generative linguistics. As noted by Itkonen (1983a: 246), "it is embarrassing to read Chomsky's comments" on this issue. To be convinced of this, it is necessary, but also sufficient, to read the entire subsection 5.1.5 'A Critique of Chomsky on Wittgenstein' (= Itkonen 1983a: 243-248).

The gist of the preceding paragraph was anticipated by Erde (1973): "When Wittgenstein considers those concepts which are our concepts of the phenomena Chomsky wants to explain, Chomsky cannot understand why Wittgenstein does not try to do what Chomsky does. This is … to misconstrue the philosophical effort altogether" (Erde 1973: 200-201; quoted and discussed in Itkonen 2003b: 105-109). In Chomsky's opinion, any kind of thinking about language and mind ought to be exhausted by generative linguistics, with no room left for (e.g. Wittgenstein-type) philosophy.

In Section 12 we already had a glimpse of the philosophical affinity between Chomsky and Quine. This becomes more obvious in Quine's (e.g., 1969: 69-90) attempt to 'naturalize epistemology'. The 'traditional' philosophy of science is a **normative** undertaking in the sense that it investigates those norms (or rules) which scientists should follow (and, presumably, do follow most of the time). Quine thinks this is wrong. In his opinion, philosophy (of science) should [*sic!*] be a **descriptive** undertaking: it is enough that philosophy (of science) should [*sic!*] describe the actual behaviour of those who practice science. He thinks this is the method of particular sciences: they just describe what happens in fact. It follows that, for Quine, philosophy (of science) is just "science self-applied".

Quine's program of 'naturalism' contains two basic defects. More precisely, it is self-contradictory in two different senses. First, as noted by Russell and Cohen above, philosophy (of science) is not about what people do or believe but about what they should do or believe. In fact, the remark by Cohen (1986: 44), quoted in Subsection A, was expressly intended to show the futility of Quine-type 'naturalism'. And the quote continues:

> "We can think of some of these as rules of sentential well-formedness, some as decision procedures for consistency or deduciblity, some as criteria of proof or measures of probability, some of rules for ensuring that observations are veridical, some as precepts of experimental method for investigating or assessing causality, some as strategies for acquiring and assessing statistics, some as guidelines for idealization, simplification, and systematization in theory-construction, and so on. But they are all **norms**, not factual beliefs …" (emphasis added).

It is the purpose of this lucid passage to demonstrate that **general** philosophy (of science) is normative through and through. In so doing, it reveals the **first** defect of Quine's naturalism, authenticated by his own actions: when he advocates abandoning traditional philosophy and adopting his own version of naturalism, he does not just describe what **is** done but recommends what **should be** done; his reasons for abandoning traditional philosophy are not scientific but philosophical; he is **not** just practicing "science self-applied".

But now it needs to be added that Quine's view of **particular** sciences is defective as well. It is not true of each and every particular science that it just describes what happens in fact. Autonomous linguistics is an obvious exception: as a study of (w-3) norms of language, it describes what should happen (i.e. what should be done), rather than what happens in fact (cf. Sections 10-13). This is Quine's **second** defect. – The relation of Quine's naturalism to linguistics has been discussed by Kertesz (1998) and Itkonen (1999). This discussion will continue in Appendix 2.

It may have been forgotten that Lakoff, Johnson, Nuñez, Chomsky, and Quine have been anticipated by Naess (1952). It was his ambition to reform the then-emerging analytical philosophy: "Underlying our methodological approach is a belief in hypothetico-deductive methods as they are used … in physics and chemistry" (p. 249). In describing such a phenomenon as

synonymy, for instance, conceptual analysis as practiced by representatives of analytical philosophy should in his opinion be replaced by the following types of methods: (i) "standardized questionnaires", (ii) "text analysis", (iii) "[observation of] regularities of behaviour, verbal and non-verbal" (p. 251). As a consequence, philosophy would be entirely swallowed up by empirical linguistics (and, perhaps, 'kinesics').

However, the results of such a research program are likely to be disappointing, as Naess himself has at least half-realized: "we have cooled down after enjoying the first beautiful vistas of future sciences that some time will be opened up by molar behavioural research" (p. 254). The point is that any behavioural research of synonymy presupposes antecedent intuitive (= non-behavioristic) knowledge of what synonymy is. As Chomsky [*sic!*] has pertinently observed, "there is no way to avoid the traditional assumption that the speaker-hearer's linguistic intuition is the ultimate standard that determines the accuracy of any proposed … operational test …" (1965: 21).

Still, maybe we should refrain from pronouncing any final verdict: it is possible to interpret Knobe & Nichols (2008) as rehabilitating part of Naess' (1952) agenda, i.e. as an attempt to construct some sort of 'folk philosophy' on the analogy of 'folk psychology'.

C) Ordinary-Language Philosophy: Ryle and Austin

There is an important distinction to be made, at least *prima facie*, between philosophy and psychology. Let us repeat part of the Russell-quotation given above: "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). The psychologist, by contrast, is concerned with what people do think or believe as a matter of fact.

Still, on the face of it, the question 'what should I believe?' is ambiguous. First, it may ask for **existing** norms of correct thinking (which already suffices to separate philosophy from psychology). But it may also ask for not-yet-existing norms that will enable us to think **better** than we have done up to now. On the latter interpretation, the question 'what should I believe?' is answered by creating **new** norms (of thinking). It seems clear enough that (as argued in Subsection 2-B) this is how the proper task of philosophy has traditionally been understood. Notice also that the creation of new norms cannot be an arbitrary undertaking, but must follow some (implicit) norms, or **meta**norms, of its own.

The boundary between the two types of norms is a fluid one and most often ignored. Yet it can be meaningfully investigated. For instance, it has become a focus of attention in *post hoc* assessments of the so-called 'ordinary language philosophy'. In conformity with the slogan 'meaning is use', representatives of this school 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, this agenda was formulated in a misleading way: what was 'observed' was not the actual spatiotemporal behaviour of a group of speakers, but those (existing) norms that they were following (and occasionally violating). Second, the agenda itself was misconceived: clinging to it would have – incongruously – replaced philosophy by (autonomous) linguistics.

The latter point has been argued by several philosophers. For instance, already before his 1983 article quoted in Subsection 2-B, von Wright (1963) argues that to some extent the philosopher has to **create** the object of his/her investigation: "The idea of the philosopher as a searcher of meanings should not be coupled with an idea or postulate that the searched entities actually **are there** – awaiting the vision of the philosopher. … The concept still remains to be **moulded** and therewith its logical connections with other concepts to be **established**" (p. 5; original emphasis; for discussion, cf. Itkonen 2005: 37-38).

Searle (1969) agrees: "As a tool of analysis, the use theory of meaning can provide us only with certain data, i.e., raw material for philosophical analysis; …" (p. 148-149). In other

words, once the 'meanings-as-use' have been duly recorded, the philosophical analysis itself still remains to be done.

Putnam (1981) constructs an argument to the same effect: if "concepts are norms or rules underlying **public** linguistic practices", and if "**concepts themselves** determine which philosophical arguments are right", then it follows that "philosophical truth is as **publicly demonstrable** as scientific truth". But this conclusion is "simply unreasonable in the light of the whole history of the subject" (pp. 111-112; original emphasis).

As noted in Subsection 2-B, there seems to be the same contrast between philosophy and linguistics as there is between philosophy and psychology. Philosophy teaches us how to think better whereas linguistics does not teach us how to speak better. But the difference is less clear-cut than it seems. Surely theoretical linguistics at its best teaches us how to **think** better than we did before, namely about how to describe the way we speak. And the same must, on reflection, be true of (theoretical) psychology as well: it does teach us how to think better about how to describe those (common-sense) beliefs that we sustain in fact. It could be argued, moreover, that even the attempt to make us think better *tout court* need not be exclusively **philosophical**, to the extent that it is based on results of **psychological** studies of **creative** thinking.

This is how the just-quoted passage from von Wright (1963) continues: "If this picture of the philosopher's pursuit were accurate, then a **conceptual** investigation would, for all I can see, be an **empirical** inquiry into the actual use of language or the meaning of expressions" (p. 5; the first emphasis added). This is meant to be a *reductio ad absurdum* of the position he is opposed to: philosophy is just incompatible with empirical research (a view which I, for one, also share). In this context von Wright's (1985: 196) target is Austin's 'linguistic phenomenology': while admitting that this type of study may have its own justification, he questions its **philosophical** significance: why should language **in itself** be philosophically interesting? (Von Wright's terminology needs to be clarified: he is **not** speaking about 'actual use' in the sense of sociolinguistics, which refers to spatiotemporal occurrences, but in the sense of autonomous linguistics, which refers to existing norms. It is only the former type of data which admits of genuinely **empirical** inquiry; cf. Sect. 23.)

But there is more to be said about this issue. The agenda of ordinary language philosophy is generally taken to have been formulated by Wittgenstein, as follows: "Philosophy may in no way interfere with the actual use of language; it can in the end only describe it. … It leaves everything as it is" (1958 [1953]: §124). Ryle (1949) is in turn generally regarded as having been the first to actually implement this agenda. Some passages from Ryle (1949) certainly support this interpretation. For instance, his (semantic) analysis of **modal words** is based, in part, on the following type of data:

> "But the words 'can' and 'able' are used in lots of different ways, as can be illustrated by the following examples. 'Stones can float (for pumice-stone floats)'; 'that fish can swim (for it is not disabled, although it is now inert in the mud)'; 'John Doe can swim (for he has learned and has not forgotten)'; 'Richard Roe can swim (if he is willing to learn)'; 'you can swim (when you try hard)'; 'she can swim (for the doctor has withdrawn his veto)', and so on" (p. 122).

On closer inspection, however, it turns out that, again and again, Ryle claims ordinary uses of language to be **wrong** in one way or another; for instance:

> "This popular idiom is sometimes appealed to as evidence in favour of the [wrong-headed] intellectualist legend" (p. 29).
>
> "With a little violence the phrase 'in my head' is then sometimes, by some people, extended to all fancied noises …" (p. 36).

> "The phrase 'in the mind' can and should always be dispensed with" (p. 40).
>
> "The vogue of the para-mechanical legend has led many people to ignore the ways in which these concepts actually behave [?] and to construe them instead as items in the descriptions of occult causes and effects. Sentences embodying these dispositional words have been [wrongly] interpreted as being categorical reports …" (p. 113).
>
> "The temptation to construe dispositional words as episodic …" (p. 114).
>
> "… it is, by an unfortunate linguistic fashion, quite another thing to say that there occur mental acts or mental processes" (p. 130).
>
> "But to say this is to abuse the logic and even the grammar of the verb 'to know'" (p. 155).
>
> "The problem … is to construe these descriptions [of what we imagine] without falling back into the [wrong] idioms in which we talk of seeing horse-races, hearing concerts, and committing murders" (p. 238).
>
> "… it [is] tempting and natural to misdescribe 'seeing things' as the seeing of pictures of things" (p. 240).

Now, the examples that were just given (and dozens more that could be added) show conclusively that Ryle was **not** obeying Wittgenstein's admonition "to leave everything as it is". What Ryle wants to say is, to put it simply, that the meanings of a wide range of words (from adjectives like 'greedy' to verbs like 'to know') have been **mis**understood as referring to some 'occult' mental attributes or occurrences, whereas they **ought** to be understood as broadly 'behavioristic', i.e. referring to dispositions to act. Hence, these meanings need to be rectified, and because meaning is use, people's speech-habits ought to be **changed** accordingly. In this crucial respect, Ryle was **not** deviating at all from traditional or mainstream philosophy, as conceived by von Wright, Searle, and Putnam. In fact, the above quotations show that Ryle was willy-nilly perpetuating the line of thinking that he pursued already in his 1931 article 'Systematically misleading expressions'.

It is also very interesting to note that Wittgenstein himself was quite unable to follow his own advice "to leave everything as it is". This iconoclastic interpretation has been demonstrated by Mundle (1970): "[Wittgenstein] prescribes … that we should … confine ourselves to describing, assembling reminders about, everyday uses of language … But … [in his work] we find very few remarks that appear to be reminders about everyday usage, and these are usually false" (p. 128).

Let it be added that my overall assessment about Ryle (1949) also agrees with Mundle's (1970): "Presumably Ryle's **intention** was not to reform the English language [but he failed to carry it out]" (p. 125; original emphasis). In fact, Ryle's agenda was wrongheaded from the start. Why? Because "the beliefs built into the grammar of English and other Indo-European languages are not behaviourist but dualist [i.e. mentalist]" (*ibidem*). Therefore the evidence of ordinary language could not possibly support Ryle's behaviourist-dispositional philosophy; "not that **that** settles any philosophical problems" (*ibidem*). Why? Because ordinary language **in itself** is philosophically uninteresting anyway, as noted by von Wright, Searle, and Putnam.

According to the received view, there was a clear-cut opposition between analytical philosophy and ordinary language philosophy. We have just seen, however, that this is something of a myth. The essence of analytical philosophy is summarized by Pap (1958) as 'analysis-by-entailment' (cf. Sect. 2). At the highest level of abstraction, Ryle (1949) characterizes his own method **in exactly the same terms**. His objective is to study "concepts of mental powers and operation" by stating "the logical regulations governing their use" (p. 9); and this is how he intends to do it:

> "To determine the logical geography of concepts is to reveal the logic of the propositions in which they are wielded, that is to say, to show with what other propositions they are **consistent** [= compatible] and **inconsistent** [= incompatible /contradictory], what propositions **follow** from them [= what propositions they entail] and from what propositions they **follow** [= what propositions they are entailed by]. The logical type or category to which a concept belongs is the set of ways in which it is **logically legitimate** [= correct] to operate with it. The key arguments employed in this book are therefore intended to show why certain sorts of operations with the concepts of mental powers and processes are **breaches of logical rules** [= incorrect]" (p. 10; emphasis added).

The clarifications added in square brackets show that, contrary to the received view, Ryle's (1949) agenda is identical with Pap's (1958). This interpretation also agrees with the remark that "philosophy is the replacement of category-habits by category-disciplines" (p. 10), which reformulates the ascent from pre-theoretical to theoretical, the defining feature of Pap-type **explication**. – Let us add that the puzzling expression "use of concepts" is synonymous with "use of terms" (e.g. p. 121), and "term" is in turn simply identical with "word" (p. 122). In (1931: 15), Ryle still took "the terminology of 'concepts'" to be "more misleading" than that of 'meanings', but in (1949: 9-10) he had overcome such misgivings.

Next, let us have a look at Austin, more particularly at his 1956-7 article 'A plea for excuses'. Above, we saw von Wright attributing to Austin a view that comes close to conflating philosophical analysis and 'empirical' inquiry practiced by linguists. But there is reason to question this interpretation. This is not how a linguist would characterize his/her method of analysis:

> "When we examine what we **should** say when, what words we should use in what situations, we are looking again not **merely** at words (or 'meanings', whatever they may be) but also at the realities we use the words to talk about: we are using a sharpened awareness of words to sharpen our perception of, though not as the final arbiter of, the **phenomena**. For this reason I think it might be better to use, for this way of doing philosophy, some … [such] name [as] 'linguistic phenomenology' …" (p. 130; second emphasis).

This passage makes it perfectly clear that, contrary to von Wright's interpretation, Austin is **not** interested in 'language in itself'. First, he explicitly claims to be interested in the phenomena 'behind' the words: this is how the expression 'linguistic **phenomenology**' is to be understood. Second, in striving to "sharpen our perception of the phenomena", he expresses his commitment to the traditional view according which philosophy ought to teach us how to **think better**. Just to make sure, let us add the following.

> "Certainly ordinary language has no claim to be the last word, if there is such a thing. It embodies, indeed, something better than the metaphysics of the Stone Age, … But then, that acumen has been concentrated primarily upon the practical business of life. …; yet this is likely enough to be not the best way of arranging things if our interests are more extensive or intellectual than the ordinary" (p. 133).

Speaking about "more-than-ordinary intellectual interests" is a roundabout way to speak about **philosophy**. Thus, it is explicitly stipulated here that philosophy **must** go beyond ordinary language (qua expression of "ordinary intellectual interests").

Several conclusions follow from what precedes. First, neither Ryle nor Austin supported, in reality, the notion of empirical philosophy (which means that, regardless of many

claims to the contrary, ordinary language philosophy should **not** be treated under the heading of this sub-section). Second, Austin understood better than Ryle what he was actually doing. Third, von Wright's view of philosophy may have been more 'prescriptive' (or 'constructionist') than Austin's, but there is nevertheless only a difference of degree between them. Fourth, once the *de facto* identity between Ryle and Pap has been pointed out (cf. above), a **significant generalization** (to use the language of the 1960s) has been achieved concerning the nature of philosophy. Fifth, and in conclusion, empirical philosophy is a bad idea, to begin with.

D) A note on 'Phenomenology'

As noted above, Austin characterized his own research as 'linguistic phenomenology'. This is of course quite different from Husserl-type 'phenomenology proper'. It is only the more interesting to note that Pettit (1970) is nevertheless able to see a fundamental affinity between the two types of phenomenology insofar as he finds both of them **data-oriented**. For Austin, the data-gathering equals "collecting reminders" about the use of language (to quote Wittgenstein). For Husserl, by contrast, the data is constituted by conscious experience: "He holds that there is a special philosophical experience in which I can intuit the phenomena of consciousness in their very essence" (p. 248). But for Pettit, it is not enough to view "philosophy as the attempt … to record data as they intelligently appear"; he prefers a view of "philosophy as a matter of reason rather than inspection, theory rather than experience" (p. 285). This result is further strengthened by his claim that the Husserl-type experience, in particular, must be ineffable, because it can be expressed neither by a public language nor by a private one: "We must reject the concept, therefore, of a radically new experience" (p. 249).

It is quite significant that while Tugendhat (1970) disagrees with Pettit (1970) on several points, he agrees with him on these two fundamental ones: "(a) There is no 'inner sense' with which we could 'look at' what Husserl calls 'acts'; … (b) There is no eidetic intuition; Husserl's assumption that we can 'see' universals (in some very strained sense of the word *see*) cannot be proved and seems to be a chimera" (p. 257).

In the subsequent discussion, these statements were further clarified by Tugendhat: "Husserl never reflected about the methodical problems of how to bring what he thought he saw across to somebody else. … To show something to somebody else meant for him [not genuine argumentation but] to help the other person to see in his own mind what Husserl saw in his mind, and it is this seeing in one's mind which I believe to be a naiveté" (p. 281). These remarks also explicate what Pettit (without using this specific word) characterizes as the basic **ineffability** of Husserl-type 'philosophical experience'. – Let it be added that Pettit's and Tugendhat's views must carry some weight, given that prior to their 1970 contributions, each of them had published a monograph on Husserl.

We saw in Section 16 that sophisticated attempts are being made today to provide foundations for cognitive science (in particular, cognitive linguistics) by recourse to Husserl-type **phenomenology**. But what, exactly, does this mean in the present context? If the term '**foundations** of X' means the same thing as '**philosophy** of X', then – in accordance with Sections 2-5 – it is uncontroversial to say that phenomenology qua philosophy of cognitive science is not itself part of (empirical) cognitive science; or, more generally, philosophy of psychology must remain **different** from (empirical) psychology itself. This attitude opposes the slogan 'science as philosophy', epitomized by the likes of Quine and Chomsky, a position discussed and rejected in the previous subsections A)-D. It is just as stultifying to replace 'philosophy of X' by 'psychology of X' as it is to replace 'philosophy of X' simply by 'X' (as is done in Quine's attempt to replace 'philosophy of psychology' by 'psychology'). A classical demonstration in the field was given by Husserl (1913), who, first, expressed the need for a philosophy of formal logic and, second, (following Frege) very

properly refused to reduce formal logic to its psychology (cf. Itkonen 1991: 285-286; and here Sect. 8).

25) The fallacy of anti-semanticism

On the one hand, traditional semantics has been challenged by cognitive semantics. On the other, both traditional semantics and cognitive semantics are repudiated by anti-semanticism, most notoriously represented by ('classical') generativism.

Linguistic form and linguistic meaning are two separate things, but their connection is so intimate that their separateness is easily overlooked. This is why **lexical** forms and corresponding meanings are typically designated by one and the same sign, with only typographical variation: the form *book* expresses the meaning 'book'. The separation is even more difficult to maintain as far as **grammatical** forms and meanings are concerned. Consider the Latin verb form *ama-ba-s*. We say that (considered as a word, and not as a sentence) it is 'active indicative imperfect second-person singular'. This is its **formal** characterization. Why? Because it expresses the following grammatical **meanings**: 'active', 'indicative' 'imperfect', 'second-person singular'. Considered as a sentence-form, it is also an affirmative assertion. Why? Because it expresses the meanings 'affirmative' and 'assertion'. (To be sure, it is possible to let e.g. *declarative* and *assertion* stand, respectively, for form and meaning.)

It is for these self-evident reasons that de Saussure (1962/1916), speaking of 'linguistic signs' (= form-meaning units), emphasizes their unity by using a metaphor like **water**: "c'est une combinaison d'hydrogène et d'oxygène; pris à part, chacun de ces éléments n'a aucune des propriétés de l'eau" (p. 145). Or perhaps the linguistic sign should be compared to a **sheet of paper**: "La langue est encore comparable à une feuille de papier: la pensée est le recto et le son le verso; on ne peut découper le recto sans découper en même temps le verso; …" (p. 157).

Against this background, it is quite surprising that Chomsky (1957) was willing to offer "a purely negative discussion of the possibility of finding semantic foundations for syntactic theory" (p. 93). He mentions six reasons for doing so, of which I single out here just two. First, as he sees it, it is not true that "the grammatical relation subject-verb corresponds to the general 'structural meaning' actor-action" (p. 94). Second, as he sees it, it is not true that "the grammatical relation verb-object corresponds to the structural meaning action-goal or action-object of action" (*ibidem*). These claims are supported by sentences like *the fighting stopped* (= no action), on the one hand, and *I missed the train* (= no object of action), on the other.

What we have here is a **fallacy**. When we speak about 'meanings', what we have in mind are meanings of sentences, words, and grammatical morphemes, and **not** 'structural meanings', i.e. meanings of general **constructions**. Therefore Chomsky's argument is beside the point. (It is surprising how seldom this has been clearly understood even by those who consider themselves as 'anti-Chomskyans'.)

Now that he thinks semantics has been discredited, Chomsky assumes he can afford to concede that, after all, "there are striking correspondences … between formal and semantic features in language" (p. 101). Indeed, some of the six claims for endorsing semantic considerations (all of which he initially rejected) "are very nearly true". This is a significant concession, but it is not enough. As our *ama-ba-s* example demonstrates, it is misleading to say that there are "striking correspondences" between formal features and semantic ones. This is like saying that *ama-ba-s* just **happens** to exemplify a correspondence between 'active indicative imperfect second-person singular' (= formal) and 'active indicative imperfect second-person singular' (= semantic); just as well – supposedly – there could have been a correspondence between 'active indicative imperfect second-person singular' (= formal) and, say, 'passive subjunctive future first-person plural' (= semantic). But this is nonsense.

Let us add a supplementary argument to the same effect. 'Autonomy of (morpho)syntax' is the very essence of generativism. Is it a reasonable notion? Maybe not: "The point is not whether syntax can be looked at separately – of course, any component can be examined in isolation. The question is, rather, what is to be gained or lost by adhering rigorously to such a research program" (Gardner 1985: 220). Certainly much is to be lost. Let us have a look at the notion of **structure-dependence**, which arguably constitutes Chomsky's (e.g. 1975b: 30-32) principal argument for the innateness and autonomy of syntax.

Consider the assertions (a) *The man **is** tall* and (b) *[The man who is tall] **is** in the room* as well as the corresponding questions (a') ***Is** the man tall?* and (b') ***Is** [the man who is tall] in the room?* Notice that (b) is questioned by moving the second (and not the first) occurrence of *is* to the beginning of the sentence, producing the 'structure-dependent' sentence (b'). Moving the first occurrence of *is* would produce the 'structure-independent' and incorrect sentence (b'') **Is the man who tall **is** in the room?* Why is it that, in questioning (b), what is moved is the second, and not the first, occurrence of *is*? As Chomsky sees it, there is no explanation; what we have is just an arbitrary fact determined by our 'innate syntax'. But of course there is an obvious **semantic** explanation for this fact, based on the principle 'what (semantically) belongs together goes together'. The **syntactic** unit *[the man who is tall]* is treated as a whole because it expresses a coherent **meaning**: syntax is motivated by semantics and therefore cannot be autonomous. Similar arguments for autonomy are disposed in the same way (as shown in more detail by Itkonen 2005a: 89-94, 101-105, 131-136).

26) 'Objectivism' vs. 'Experientialism': A historical Overview

In Subsection 24-A a few sceptical remarks were made concerning what Johnson & Lakoff (2002) call 'embodied realism'. The same doctrine has been called 'experientialism' by Lakoff & Johnson (1980, 1999). In order to see more clearly what is at issue, some historical perspective is needed.

Ever since antiquity linguistics has been understood as dealing with the trichotomy "reality – mind – language". In the Middle Ages this trichotomy was described by means of the word *modus*, namely as the three modes of being (*modi essendi*), of understanding (*modi intelligendi*), and of signifying (*modi significandi*). It was taken for granted that a distinction has to be made between the (extramental) reality and the mind. Although the former is necessarily conceptualized by the latter, there are nevertheless concepts such as "centaur" which, unlike "horse", have no extramental counterparts: "Although things cannot be understood without any mode of understanding, our reason nonetheless distinguishes between things and modes of understanding", as Boethius de Dacia put it around 1280, paraphrasing what Aristotle had said in *Metaphysica* 1010b, 30: "but that the substrata which cause the sensation should not exist apart from the sensation is impossible" (cf. Itkonen 1991: 230). The fact that concepts like "centaur" or "contrafactual event" have no extramental counterparts does not entail that they must have mental counterparts, somehow differently from how ordinary concepts like "horse" have them.

The history of Western philosophy has been interpreted by Lakoff & Johnson (1980, 1999) in the light of an opposition between **objectivism** and **experientialism**. In order to assess the validity of this interpretation, we shall first scrutinize the different ways that the relation between the reality and the mind has been understood in Western philosophy. The most important schools of thought can be represented with the aid of the following dichotomies: materialism (= M) vs. idealism (= I) and empiricism (= E) vs. rationalism (= R). These dichotomies look similar but they are in fact independent from each other, as can be seen from the fact that the combinations E & M and E & I as well as the combinations R & M and R & I have been attested (cf. below). One and the same philosopher may exemplify more than one combination either in different areas of his/her

thinking or at different stages of his/her career. Moreover, there are of course philosophers whose thinking cannot be adequately captured by means of these dichotomies. The schools of thought are defined as follows:

M = mind is determined by reality
I = reality is determined by mind (spirit, consciousness)
E = knowledge is produced by sense-impressions
R = (genuine) knowledge is produced by (logico-mathematical) intuition

Materialism is divided e.g. into mechanical and dialectic (or interactive) subtypes. The former subtype claims that nature, both inanimate and animate, functions like a clockwork and becomes known by means of sense-impressions. It is represented by philosophers of the French Enlightenment (La Mettrie, Diderot). The latter subtype of materialism claims that knowledge is produced by means of interaction which does not just obtain between reality and mind, but results from human intellectual-cum-bodily activity being directed at reality. It is represented e.g. by Marxism and pragmatism (James, Dewey).

Idealism is divided e.g. into objective, subjective, and transcendental subtypes. According to the first subtype, reality is determined by Reason that dwells "behind" sense-impressions and may be either static (Plato) or dynamic/dialectical (Hegel). According to the second subtype, there is no need to assume any extramental reality "behind" subjective sense-impressions. According to the third subtype, the mind structures the extramental reality by means of its own categories (Kant).

Empiricism is divided e.g. into materialist and idealist subtypes. According to the former, sense-impressions produce reliable knowledge about reality (Bacon, La Mettrie, Diderot). According to the latter, nothing needs to be assumed in addition to sense-impressions and, possibly, abstractions thereof (Hume, Berkeley). Rationalism is similarly divided e.g. into materialist and idealist subtypes. The former is represented by Democritus who postulates the existence of atoms as purely speculative entities as well as by Descartes in his physics which is based on the clockwork metaphor. The latter is represented by Plato and Descartes in their epistemology.

As Lakoff & Johnson (1980, 1999) see it, objectivism amounts to the claim that the mind is the mirror of nature, i.e. that the mind reproduces in a passive and reliable fashion the properties of the extramental reality, whereas the gist of experientialism can be resumed as follows: "our understanding of the situation results from our interaction with the situation itself" (Lakoff & Johnson 1980, p. 180). It is their thesis that for more than 2000 years the history of Western philosophy was totally dominated by objectivism, until it was finally overthrown in the 1980's by the new insights created by Lakoff and Johnson themselves and summarized as "experientialism". There are those who applaud this scenario. Mark Turner, for one, "can think of no equal intellectual achievement" (1991, p. vii).

All versions of both idealism and rationalism refute the claim that Western philosophy has been a monolith shaped by objectivism. It is only mechanical materialism and materialist empiricism that can truthfully be said to represent objectivism. By contrast, dialectical/interactive materialism fulfils all criteria of experientialism. (For pragmatism, this is in fact admitted by Johnson & Rohrer 2007.) The interpretation that Lakoff & Johnson assign to the history of Western philosophy is without foundation.

The same conclusion is reached by Haser (2005, Chapter 4) in her critique which is limited to the 20th century: "objectivism" as a homogeneous and widely accepted doctrine does not exist whereas most schools of philosophy endorse one or another kind of "experientialism".

Let us dwell for a moment on the philosophy of antiquity because it is much too often described in over-simplified terms (cf. Itkonen 1991: 186, 189-191). Aristotle can in some sense be said to represent objectivism. According to Heraclitus, both what is to be described and the

description itself are continually changing, which means that any attempt at description defeats itself. Pyrro comes in his scepticism to the same conclusion because he denies the reliability of each and every method of gaining information. The Stoics regarded knowledge as resulting from the interaction between reality and mind. For Pythagoras the essence of reality is mathematical in character. In his doctrine of Ideas Plato agrees with Pythagoras, but he also claims that one can genuinely know only the results of one's own actions. Characterized by the equation "*verum = factum*", this notion of **agent's knowledge** (opposed to observer's knowledge) has been widely accepted from the 17th century onwards, especially in the humanistic circles (cf. Itkonen 1978: 193-198).

There is an obvious connection between agent's knowledge and **verificationist** semantics (cf. Sect. 19). Let us distinguish between a statement S, its meaning M, and its truth-condition T. While M is not identical with T, understanding M involves understanding T; and T cannot be understood unless it is known how the truth of S can – at least in principle – be ascertained (cf. Itkonen 1983a: 116-120). As noted before, it is hard to disagree: "understanding a statement must begin with an attempt to believe it: you must first know what the idea would mean if it were true" (Kahneman 2011: 81). "System 1 understands sentences by trying to make them true" (p. 122).

In sum, most strands of Western philosophy converge on envisaging that kind of mind which, instead of being a passively reflecting mirror, is embedded in a bodily and intellectually active person (in addition to being shaped by a set of criss-crossing networks of social relations).

27) Frege, Pap, and Wittgenstein Summarized

It is the purpose of this section to briefly summarize those views of Frege, Pap, and Wittgenstein that have already been presented *in extenso* in what precedes.

Frege tells us what proposition (and, by implication, meaning) is not: it is not a psychological entity.

Likewise, Pap tells us what meaning is not: it is not a psychological entity. He also tells us how meaning is (primarily) analyzed, namely by means of entailments and contradictions.

Wittgenstein tells us both what meaning is not and what it is: it is not a psychological entity and, *qua* (correct) use, it is a social-normative entity.

28) Conclusion

Let us make one final remark on the concept-3 of entailment. Pap (1958) notes on the very last page of his monumental work that "faith in mutual understanding of basic modal terms is indeed an indispensable presupposition of all analytic philosophy" (p. 422). *Necessity* and *possibility* are "the basic modal terms". Entailment equals **necessarily** true implication, and necessary truth equals **analyticity**. Modal logic is the logic of necessity and possibility, and it is the primary type of **non-extensional** logic. Against this background, the following posthumous "confession" made by Quine (2001: 217) becomes significant: "I doubt that I have ever fully understood anything that I could not explain in extensional language." This goes a long way towards explaining Quine's desperate 50-year-long struggle with the analytic-synthetic distinction, a distinction which, after all, is – or should be – quite easy to understand.

Frege deserves to conclude this article: "Not everything is an idea. Otherwise psychology would contain all the sciences within it or at least it would be the highest judge over all the sciences. Otherwise psychology would rule over logic and mathematics. But nothing would be a greater misunderstanding of mathematics than its subordination to psychology. Neither logic nor

mathematics has the task of investigating minds and the contents of consciousness whose bearer is a single person. Perhaps their task should be represented rather as the investigation of the mind, of the mind not of minds" (1967/1918: 35).

It seems natural to interpret "the mind" (as opposed to "minds") in the sense of **common knowledge** or **shared mind** (cf. Sect. 10). Certainly this interpretation is more natural than all-out Platonism (which has often been attributed to Frege).

Appendix 1: Mental Imagery Revisited

A) Philosophical refutations

After surveying many different types of evidence and argument against psychologism, it may be good, even at the risk of repetition, to present what may well qualify as its traditional philosophical refutation. It concentrates on the notion of 'mental image':

> "There are, however, overwhelming objections to the ['image theory' of meaning]. On this theory, a word cannot mean the same for all who speak or hear it, since each person has a different image; we should have to speak, not about the meaning of a word, but about the meaning which this or that person attaches to it. Further, if the theory is true, we could talk about nothing but what is in our minds. …
>
> It is clear that we can use words meaningfully without having images as we do so; indeed, there are some meaningful words as the phrase 'a four-dimensional space', which we cannot interpret in terms of images [not to speak about such logical words as *if*]. …
>
> Some philosophers have tried to improve on the image theory by saying that the meaning of a word is a concept. They would agree that there is, for example, no image of a four-dimensional space, but they would say that the meaning of the words 'four-dimensional space' is the **concept** of such a space.
>
> Such a theory, which might be called the 'concept theory', … is now generally abandoned, for either it falls into some of the difficulties that trouble the image theory, or it says nothing. What is meant is this. If we say that a concept is something in a person's mind, then it seems that there will be as many meanings of a word as there are people who use, hear or read the word; further, it seems that we are doomed to speak only about the contents of our minds. These consequences parallel difficulties in the image theory of meaning; but if we try to avoid these by regarding a concept as something inter-personal, in the sense that we speak of e.g. the concept of law as opposed to this or that persons concept of it, then we explain nothing" (Parkinson 1968: 4-5).

The term 'concept', i.e. concept-2, is synonymous with such more recent terms as 'conceptualization', 'construal', and 'cognitive routine', and whatever is wrong with the equation 'meaning = concept-2' is just as wrong with the equation 'meaning = conceptualization = construal = cognitive routine' (cf. Sects. 12-18). And let us repeat once again that the 'image/concept theory' of meaning is utterly incapable of accommodating the concept of necessary truth, the cornerstone of semantics (cf. Sects. 2-9). As a corollary, psychologism is incompatible with the now-fashionable 'inferential semantics'.

In the preceding quotation, what starts as a criticism of the equation 'meaning = mental image', quite naturally becomes a criticism of psychologism in general. The following quotation, inversely, starts with subjective experience (= 'phenomenology' in a general sense) and then narrows it down to mental imagery:

> "Different listeners' phenomenology in response to the same utterance can vary almost *ad infinitum* without any apparent variation in comprehension or uptake. Consider the variation in mental imagery that might be provoked in two people [e.g. Jim and Sally] who hear the sentence *Yesterday my uncle fired his lawyer* […]
>
> Quite independently of their mental imagery, Jim and Sally understood the sentence about equally well, as can be confirmed by a battery of subsequent paraphrases and answers to questions. Moreover, the more theoretically minded researchers will point out, imagery couldn't be the key to comprehension, because you can't draw a picture of an uncle, or of yesterday, or of firing, or of lawyer. Uncles, unlike clowns or firemen, don't look different in any characteristic way that can be visually represented, and yesterdays don't look like anything at all. Understanding, then, cannot be accomplished by a process of converting everything into the currency of mental pictures, unless the pictured objects are identified by something like attached labels, but then the writing on these labels would be bits of verbiage in need of comprehension, putting us back at the beginning again. …
>
> Comprehension, then, cannot be accounted for by the citation of accompanying phenomenology, but that does not mean that the phenomenology is not really there. It particularly does not mean that a model of comprehension that is silent about the phenomenology will appeal to our everyday intuitions about comprehension" (Dennett 1991: 56-57).

Notice that Dennett by no means denies the existence subjective experiences (= 'bits of phenomenology'), they are just not meanings. They are related to meanings, but they are not meanings. Moreover, Dennet's position agrees with the prevailing view that thinking (here exemplified by sentence comprehension) somehow involves **both** language-like (= 'digital') **and** picture-like (= 'analog') elements (cf. Itkonen 2005a: 3.2).

Professional psychologists may feel duty-bound to ignore any philosophical objections and to accept whatever happens to qualify as the psychologistic meaning-conception of the day. In so doing they succumb (often contrary to their own better judgment) to what I would like to call 'educational and/or terminological determinism' or, more simply, peer pressure.

B) Psychological Refutation, Based on "Empirical Study of Mental Images"

What follows is a string of excerpts from Brown (1958: 89-92), a classic of psycholinguistics:

> "To what degree are these conceivable images reported to be the meanings of words? Binet, Watt, Woodworth, Bühler, and others report no images. In the researches of Clarke, Comstock, Crosland, Gleason, and Okabe [by contrast] one finds the assurance that nothing was found in consciousness which could not be analyzed into sensation, image, or affection. The images reported are connected with the eliciting words by what appears to be a capricious variety of associations. [For instance] Titchener's image of *but* was the back of the head of a speaker who often

used this word while Titchener sat behind him on a platform. Students in Titchener's seminars agreed with him in finding imagery to be the contents of consciousness but they did not agree on specific images. In response to the[se] serious criticisms … [the mental image was replaced by] a neurological reaction to a word – a reaction not necessarily represented in consciousness. The resort to neurology is a defeat for the image theory of meaning."

Empirical phenomena occur in space and time (and empirical statements are about such phenomena). By this criterion, contents of consciousness are not empirical: they occur in time but not in space. But (introspection-based) **reports** are empirical: they occur both in space and in time. Thus, Brown (1958) is justified to speak about "empirical study of mental images". The upshot of this study is in perfect agreement with Parkinson (1968) and Dennett (1991) and, indeed, with anything that was said in Sections 1-28.

Above, we saw Brown (1958) enumerating an impressive list of 20th-century psychologists. But this list is far from complete. The pioneering **empirical work** on mental images was done already in the 1880's:

> "Until very recent years [= c. 1880] it was supposed by philosophers that there was a typical human mind which all individual minds are like, and that propositions of universal validity could be laid down about such faculties as the 'Imagination'. Lately, however, a mass of revelations have poured in which make us see how false a view this is. There are imaginations, not 'the Imagination', and they must be studied in detail.
>
> Mr. Galton in 1880 began a statistical inquiry which may be said to have made an era in descriptive psychology. He addressed a circular to large numbers of persons asking them to describe the image in their mind's eye of their breakfast-table on a given morning. **The variations were found to be enormous**; and, strange to say, it appeared that eminent scientific men on the average had less **visualizing power** than younger and more insignificant persons.
>
> The reader will find details in Mr. Galton's 'Inquiries into Human Faculty', pp. 83-114. I have myself for many years collected from each and all my psychology-students descriptions of their own visual imagination; and found (together with some curious idiosyncrasies) **corroboration** of all the variations which Mr. Galton reports" (James 1948/1892: 303; emphasis added).

C) 'Conventional imagery' was debunked already 150 years ago

The novelty of Galton's (and James') approach consisted in treating mental images as real phenomena, and not as philosophical fictions. This change of attitude was described by James (1948/1892) as follows:

> "Mr. Galton and Prof. Huxley have […] made one step in advance in exploding the **ridiculous** theory of Hume and Berkeley that we can have no images but of perfectly definite things. Another is made if we overthrow the equally ridiculous notion that, whilst simple objective qualities are to our knowledge in 'states of consciousness', relations are not. But these reforms are not half sweeping and radical enough. What must be admitted is that **the definite images of traditional psychology** form but the very smallest part of our minds as they actually live" (p. 165; emphasis added).

The problematical notion of 'conventional (mental) imagery' and its successors were discussed at some length in Sections 13-17. As noted above, the **real** mental imagery exhibits an enormous amount of **inter-individual variation**. But it has left no trace in **conventional** imagery (or in any of its successors). For instance, there is no variation among the three (conventional) images supposedly connected with Langacker's (1987: 110) three example sentences *The clock is on the table, The clock is lying on the table, The clock is resting on the table* (cf. Subsection D). How is this possible? Simply because 'conventional' images are descriptive artefacts, conceived *a priori*. They are not real images, but regimented or purified images, i.e. images concocted by the 'ideal conceptualizer' (cf. Sect. 13). They signify a return to those "definite images" of antiquated Berkeley-type psychology which William James finds "ridiculous".

James found **empirical corroboration** for Galton's reports on mental imagery (cf. above). Remarkably, there is **no** such corroboration for 'conventional imagery'. Nor is there any **empirical falsification**. How could there be?

Let us add that the existence of real (= 'rich') mental images has been duly acknowledged in cognitive linguistics: "There is a growing body of experimental evidence in support of the thesis that there is a distinctive **image-schematic** level of cognitive processing that must be distinguished from **rich images** or mental picturing" (Johnson 1987: 24). This is plausible enough, and the same goes for the notion of **mimetic schema** that Jordan Zlatev has been developing for almost 20 years (for the most recent version, cf. Zlatev & Blomber 2016). But the point is that these types of schemata are much too abstract to be identified with conventional images (or their equivalents) as they are used in grammatical analysis in order to differentiate between such near-synonymous sentences as *The clock is lying on the table* and *The clock is resting on the table.*

D) Not Images per se but Instructions about Correct Application of Images

In what precedes, we have encountered many dichotomies: social vs. psychological, conscious vs. unconscious, descriptive artefact vs. occurrent phenomenon. We have also seen that the notion of 'image/construal', adopted by Cognitive Grammar, somehow manages to exemplify **both** sides of each dichotomy. This is a confusion (or, more stringently, a contradiction). There remains one more confusion to discuss, a confusion, to be sure, that was already broached in Sections 14-15. To have some theoretical background, let us once again resort to Wittgenstein (1958/1953):

> "Imagine a picture representing a boxer in a particular stance. Now, this picture can be **used** to tell someone how he should stand, should hold himself; or how he should not hold himself; or how a particular man did stand in such-and-such a place; and so on" (p. 11; emphasis added).
>
> "I see a picture; it represents an old man walking up a steep path leaning on a stick. – How? Might it not have looked just the same if he had been sliding downhill in that position. Perhaps a Martian would describe the picture so" (p. 54).
>
> "How does it come about that this arrow → **points**? Doesn't it seem to carry in it something beside itself? [namely] … the psychical thing, the meaning[?] … The arrow points only in the **application** that a living being makes of it" (§454; second emphasis added).
>
> "Every sign by itself seems dead. What gives it life? – In **use** it is alive" (§432; emphasis added, original emphasis deleted).
>
> "Can there be a collision between picture and **application**? There can, inasmuch as the picture makes us expect a different **use**, … " (§141; emphasis added).

Here we have a contrast between one picture/image and its many 'uses' or 'applications' ('interpretation' and 'construal' being synonymous designations). No picture/image is absolutely unambiguous. All images must, rather, be applied in some way, which means that there must be corresponding instructions for (correct) application. When several equally good applications are possible, explicit instructions are needed. This is true of the boxer. Sometimes the application may be so self-evident that it just remains implicit. This is true of the mountain-climber and the arrow. Still, the applications-cum-instructions must always be there.

Next, let us see how the theoretically central term 'image' was originally introduced and justified within the context of Cognitive Grammar. The point of departure is constituted by four sentences of which only the following three will be considered here:

(1) The clock is on the table
(2) The clock is lying on the table
(3) The clock is resting on the table

(1)-(3) are characterized in the following terms: "The sentences (1)-(3), for instance, embody substantially **different images** (and are hence semantically distinct) even though they could all be used to describe the same objective situation" (Langacker 1987: 110; emphasis added). Is this characterization accurate? No, it is not. Why not? Because it makes no sense to claim that (1)-(3) "embody substantially different images". What they do embody is **one and the same image**, as we now shall see.

While there are dozens of different types of diagrams in Langacker (1987), it is remarkable that no diagrams have been invented to reproduce the "substantive differences" between the respective **images** supposedly connected with (1)-(3). The reason for this lacuna becomes evident when we have a closer look at how the **semantic** differences connected with (1)-(3) are described:

> "[(1)] is the most neutral. … The verb *lie* in (2) **calls attention** to the alignment of the clock along the horizontal axis of the table; *rest* in (3), on the other hand, **emphasizes** the static character of the locative relationship, … This is a typical example of … expressions that are often functionally equivalent but nonetheless different in **meaning** by virtue of the contrasting **images** they convey" (pp. 110-111; emphasis added).

As noted above, we are not given any diagrams that would illustrate the supposed differences between the images, so we ourselves must imagine both the diagrams and the images. This is how we must understand such expressions in bold-face as *calls attention* and *emphasizes*: They are **instructions** how to **apply** (or interpret) one and the same image: either 'pay attention to alignment!' or 'emphasize the static character!' And if you think that there is no instruction connected with (1), you are wrong. This is the instruction: "Take (1) to be neutral as compared to (2) and (3)!"

It is difficult to keep track of all the mistakes involved; but let us try. First, it is wrong not to distinguish between image and application. Second, it is wrong to claim to be speaking of images when one is in reality speaking of images-cum-applications. Third, meanings should not be confused with images. Fourth, whatever role images may play, it is always a secondary one. Fifth, it should be understood that we are not speaking about **real** mental images, but about Berkeley-type, 'regimented' or **unreal** images.

I doubt that anyone has put the fourth point better that Kenny (1980): "It is not the imagery that gives content to the intellectual thought, but the intellect that gives meaning to the

imagery – whether imagined words or mental pictures – by using it in a certain way and in a certain context" (p. 78).

Having started with Wittgenstein (1958/1953), we might as well conclude with him: "In psychology there are experimental methods and **conceptual confusion**" (p. 232; original emphasis). In light of what precedes, these words certainly apply to Cognitive Grammar (except that there was no use of experimental methods until the late 1990's).

Appendix 2: A Note on All-Out Physicalism

Quine is the physicalist *par excellence*. This is, basically, his physicalist account of **language**: "A child learns his first words and sentences by using and hearing them in the presence of appropriate stimuli. These must be external stimuli, for they must act both on the child and on the speaker from whom he is learning. Language is **socially** inculcated and controlled, the inculcation and control turn strictly in the keying of sentences to **shared** stimuli" (1986/1969: 22-23; emphasis added).

In this situation there are supposed to be four **physical** elements, i.e. child, speaker, word/sentence, and referent(s). It is the interaction of these elements which supposedly renders the situation **social** (which entails that this is supposedly one way of reducing social to physical). The sentences and referents are supposed to be nothing but (physical) stimuli equally **shared** by the child and the speaker. But what does this mean? There must be dozens (if not hundreds) of **other** stimuli as well present in the same situation. Why are **they** not shared? (Or if they are, why is this not explicitly mentioned?) The only possible answer is that some sort of (normative) **tie** must connect, and must be **known** to connect, the sentence and the referent(s), in exclusion of all other stimuli; and, by definition, **this** goes beyond physics. Quine adds that he is "after an understanding of science as an institution or process in the world" (p. 24). But it is hopeless to try to reduce institutions to (sets of) physical stimuli (whose 'shared' nature remains a mystery).

Is everything nothing but physics? This surely remains one of the central questions of metaphysics. One way to answer it is to use an argument which is based on the **normativity of language**. Because of its self-referential character, this argument is somewhat reminiscent of the Liar's Paradox.

In order to show that literally **everything** can be reduced to physics (including the thoughts and actions of those who are engaged in the very act of reducing), it must be possible to describe everything in (what ultimately reduces to) the **language** of physics. But this language (just like any other language) is of normative nature, as shown by the fact that those who use it can act either correctly or incorrectly, which is something that physical entities can**not** do. Therefore, even granting that everything **is** physical (= anti-normative), any attempt to scientifically **assert** this fact is self-defeating because it proves the opposite (cf. also Appendix 8).

Appendix 3: Concerning the Historical Roots of Analyticity

Let us start with a few excerpts from Copleston (1972) that illustrate how analyticity or its equivalents were conceived of in the Middle Ages. The following quotes are by Copleston, not by the authors discussed.

Peter Abelard (1079-1142): "If we say that the proposition 'man is an animal' is true in virtue of its terms (an analytically true proposition), its truth is dependent on the **inclusion** of 'animal' in the definition of man as a rational animal" (p. 83; emphasis added).

Duns Scotus ('Doctor Subtilis', 1265-1308): "The so-called 'eternal truths' are analytic propositions; and the mind does not require any special illumination to see their truth: 'The terms of self-evident principles have such an identity that it is evident that the one necessarily **includes** the other.' The concepts of whole and part, for instance, are derived by abstraction from sense-experience. Once they have been formed, however, the mind assents to the proposition that every whole is greater than any of its parts 'in virtue of the terms'. No verification is required. That is to say, the proposition cannot be construed as an empirical hypothesis, which might turn out to be false. Its truth depends on the meaning of its terms; …" (p. 217; emphasis added).

William Ockham (1285-1347): "Each of these substances or things could exist by itself … In other words, there are no necessary relations between things. It follows that if A is the cause of B, this is simply a matter of contingent fact. And such facts cannot be ascertained *a priori*, but only through recourse to experience. To intuit B is not to intuit A. The idea of the one does not **contain** in itself the idea of the other, except perhaps by the force of association" (p. 242; emphasis added). "All real sciences [like physics] … are concerned with common concepts which stand directly for things. Logic, however, treats of concepts which stand for other concepts, … [like] the term 'species' stands for the concepts 'man', 'horse', 'lion' and so on" (p. 244). "The question of the way in which the universal concept arises belongs to psychology rather than to logic. Ockham's general view is that it arises through comparison of … acts of knowledge of particulars" (p. 247).

Robert Holcot (d. 1349): "Only analytic propositions (when the predicate is **contained** in the concept of the subject) are certain …" (p. 257; emphasis added).

John of Miracourt ('Monachus Albus', d. 1350?): "What [he] calls evident assent in the strict sense is given only to those propositions which rest on the principle of non-contradiction and in the case of which we have the highest degree of evidence of their truth" (p. 260).

Nicholas of Autrecourt (d. 1360?): "The principle of non-contradiction is the primary principle, both in the sense that there is no more ultimate principle and in the sense that all other principles presuppose it. Every proposition which is reducible, either immediately or mediately, to this principle is certain. A proposition is immediately reducible if the predicate is **contained** in the concept of the subject. It is mediately reducible if the conclusion of an argument is identical with part of the premise or antecedent. If, for example, all Xs are Ys, the statement that this X is Y is said to be identical with part of [or 'be contained in'] the premise. To assert the premise and deny the conclusion would involve a **contradiction**" (p. 263; emphasis added).

The special status of the principle of non-contradiction, formalized as $\sim(p \,\&\, \sim p)$, was already singled out by Aristotle in his *Metaphysics*: "The most certain principle of all is that regarding which it is impossible to be mistaken; … It is this, that the same attribute cannot at the same time belong and not belong to the same subject in the same respect." In actual practice the principle reduces to this: denying a necessary truth produces a contradiction, which entails that denying a contradiction produces a necessary truth.

Sentences like *All AB are A*, where the predicate is literally contained in the subject are called **trivially analytic** by Pap (1958: 423). Of course, this is a very narrow (and a rather uninteresting) definition of analyticity. A more interesting class is constituted by those (*a priori*) sentences which Pap labels as **broadly analytic** and defines as being "true by virtue of meanings of constituent words" (*ibidem*). Logical truths expressed in some natural language are called **explicitly analytical**.

The notion of analyticity expressed in the preceding quotation was perpetuated by Immanuel Kant: "The Kantian notion of analyticity is that of a vacuous assertion that results when

the meaning of a predicate contains only attributes that are components of the meaning of the subject" (Katz 1972: 50). This view is first embraced by Katz (1966) but later repudiated by Katz (1972): "there are analytic (noncopulative) sentences in which some expression other than the subject contains the semantic information that makes the predication redundant" (p. 172); for instance:

(1) John buys from those who sell to him
(2) John remembers things he does not forget

Itkonen (1970: 7-8) points out that if 'analytic' vs. 'contradictory' are defined in terms of meaning inclusion v. exclusion, these notions can (and should) be extended to subsentential constructions as well:

(3) Er stürzte schnell hinaus ('He quickly dashed out')
(4) *Er stürzte langsam hinaus (*'He slowly dashed out')

Katz (1972) makes the same point about (5) and (6), formulated as '(meta)linguistic truths':

(5) 'Male nephew' is redundant (p. 198)
(6) 'John shouted silently' is contradictory (p. 181).

'Male nephew' could just as well be called analytic.

Appendix 4: A Glance at the World of Concepts-3

This appendix elaborates on some conceptual (i.e. conceptual-3) distinctions that were introduced in Section 2.

> "A general concept is capable in principle of being exemplified by any number of different particular instances. So concepts are principles of collection. But they are also principles of distinction. Concepts come in ranges; and what we want to retain from our metaphor [of 'logical space'] is the notion of mutual **logical** exclusiveness within a range: the concepts of lion, tiger, panther, belong to one range, the feline animal-species range; the concept of yellow, red, blue, to another, that of colour or hue; of lying, standing, sitting, say, to another (physical attitude); of being completely surrounded by, being to the right of, being to the left of, being above, below, on a level with, to another (possible) range; of being square, circular, triangular, to another. In the terms of our metaphor we think of the range as a (logical) space divided between the concepts which make up the range. What ultimately differentiates one concept from another in the range is just the space it occupies in the range. But of course a logical space is not a space. What is meant is that the concepts of a range are principles of distinction among the particulars that come within the range, and are in **logical** competition with other members of the range throughout their field of application to particulars. If any particular (fairly and squarely) exemplifies one member of the concept-range, then there are other members of the range (or at least one other member) which the particular is thereby **logically** excluded from exemplifying. Of course there are borderline cases and (sometimes) hybrids. But our recognition of them **as such** only serves to emphasize the function of concepts as

principles of distinction within the range" (Strawson 1974: 18; only the last emphasis in the original).

"The region of the logical space occupied by the concept *red* **includes** as a part that occupied by *scarlet* and **is included** in that occupied by *coloured* (here opposed to, say, *black-and-white* or *colourless*)" (p. 19; emphasis added).

Inclusion	Analytic	If A is red, then A is coloured
	Contradictory	If A is red, then A is not coloured
Exclusion	Analytic	If A is red, then A is not green
	Contradictory	If A is red, then A is green

"Every exclusion is logically equivalent to an entailment [or contradiction, cf. below]" (Körner 1959/1955: 81). According to Strawson (1974), as we have seen, concepts are principles of collection and distinction of particulars. 'Red' puts red things together and distinguishes them from green things. One and the same particular cannot simultaneously exemplify two exclusive (= incompatible) concepts; this would amount to a contradiction:

A is red and A is green = A is red and A is not red = $p \,\&\, \sim p$
A is standing and A is lying = A is standing and A is not standing = $p \,\&\, \sim p$

Körner (1959/1955: 34-35) postulates three basic relations between concepts: inclusion (= 'coloured' vs. 'red'), exclusion (= 'red' vs. 'green'), overlap (= 'red' vs. 'round'). Exclusion = incompatibility = (sentence-level) contradiction; overlap = compatibility = **lack** of contradiction: being red neither entails nor is contradicted by being round. But notice that both contradiction and lack of contradiction are **modal** notions. Does this mean that even our notion of basic overlap/compatibility (à la 'red' vs. 'round', 'blonde' vs. 'middle-aged', etc) presupposes the modal notions of necessity and possibility? So it seems. And does this mean that Quine's desideratum of an **exhaustively** extensionalist interpretation of natural language is logically impossible, i.e. necessarily false? Yes, except that Quine's own language, lacking the modal notion of necessity, would be incapable of expressing this truth. But it is a **truth**, nevertheless.

Notice that 'subject-predicate inclusion' (cf. Appendix 2) and 'superordinate-subordinate inclusion' are **inverse** relations: As a concept, 'red' is included in 'coloured', but as (an attribute of) a subject, 'red' includes the predicate 'coloured', as in the **analytic** sentence *All red things are coloured*.

As argued in what precedes, psychologism is incompatible with the world of concepts-3. This is confirmed by a look at the subject index of Geeraerts & Cuyckens (2007). There is no entry either for 'necessary truth' or 'contradiction'. 'Analyticity' is mentioned just once, only to be rejected: "Quine (1953) successfully argued that there is no tenable analytic-synthetic distinction" (p. 146; but cf. here Sect. 3). Metonymic connections are correctly distinguished from "relations that are based on conceptual necessity such as hyponymy (on the concept level) and entailment (on the propositional level)" (p. 241). But this is the **only** mention of entailment, in spite of the fact that it is the basic tool of semantic analysis (cf. again Sect. 3). This illustrates the basic defect of cognitive semantics.

In anticipation of Appendix 6, let us note the following. In (1) the antecedent expresses a **sufficient** condition for the consequent: in order to know that A is unmarried, it suffices to know that he is a bachelor; nothing more is required. In (2) the antecedent expresses a **necessary** condition for the consequent: A cannot be a bachelor unless he is unmarried; but this condition is not sufficient for bachelorhood because spinsters and small children too are unmarried and yet are not bachelors:

(1) If A is a bachelor, then A is unmarried
(2) Only if A is unmarried, A is a bachelor

Traditionally, it is only sentences like (1) which have been called analytic (= necessarily true). But it is obvious that the truth of (2) is just as necessary as that of (1). Indeed, this must be so because (1) and (2) are **synonymous**. This entails, contrary to normal intuition, that the consequent of (1) expresses a necessary condition (for the antecedent) while the consequent of (2) expresses a sufficient condition (for the antecedent).

Appendix 5: More on Pap's (1958) view of the (gradual) analytic-synthetic distinction

> "It is hopeless to try to reconstruct a scientific theory dualistically as a system of statements some of which are analytic and some of which have factual content. … The point is that the analytic-synthetic distinction in the usual sense is not applicable at all" (p. 321).
>
> "Consider the simple implication S = 'if x is a lemon, then x is sour'. Is it analytic or synthetic? It would be naïve to try to answer this question by looking for an explicit definition of 'lemon' … Suppose then that we interpret analyticity as a **pragmatic** concept according to which 'S is analytic for A' means something like 'A would firmly refuse to call something a lemon unless he believed it to be sour'. I think that in this sense S is not analytic for most English-speaking people … – in other words that S is synthetic. But … it is conceivable that we should invent a new class term for a new species of fruit [i.e. what looks like a lemon but does not taste sour, which would make S analytic, after all]" (p. 345; emphasis added).
>
> "[It is possible to] protest against the 'gradualism' here argued for" (p. 355). "The discussion so far has aimed at a defense of the suggested pragmatic, **gradualistic** theory of entailment" (p. 370; emphasis added).

In substantiating his thesis, Pap sets up (p. 371) a continuum which contains elements of our continuum (4)-(7) in Section 3, although in a less transparent order:

(1) If anything is red, then it is colored
(2) If anything is a lemon, then it is sour
(3) If x is a bachelor, then x is unmarried
(4) If x is an unmarried man, then x is unmarried

These are his respective comments on (4), (3), and (1): "That there is nothing gradual about a formal entailment like (4) must be admitted." "(3) is based on an explicitly definable, though vague, concept and hence is transformable into a formal entailment [identical with (4)]." "There is nothing gradual about the entailment expressed by (1), since there is no conceivable situation in which one might be inclined to affirm the antecedent and deny the consequent."

Thus, (4), (3) and (1) are genuine entailments (= necessary truths). By contrast, (2), being neither analytic nor synthetic, is an 'entailment' only in a **new** pragmatic or gradual sense (cf. above). Pap (1958) applies the word 'gradual' both to the sentence (2), which is neither analytic nor synthetic, and to the entire continuum leading from clearly analytic to clearly synthetic sentences.

Although Quine (e.g., 1970) places his emphasis differently, his over-all conception is the same: "I am concerned to urge the empirical character of logic and mathematics no more than

the unempirical character of theoretical physics; it is rather their kinship that I am urging, and a doctrine of gradualism" (p. 100).

Appendix 6: Theoretical vs. Practical Reasoning, Necessary vs. Sufficient Conditions

Having become acquainted with the notion of rational explanation (= RE) in Section 18, we are in a position to describe the fundamental difference between **theoretical** vs. **practical** reasoning. This will be done with the aid of the distinction between **necessary** vs. **sufficient** conditions (appropriately enough, given that necessity has been our central concern since the beginning).

"The purpose of practical reasoning is to get done what we want, while the purpose of theoretical reasoning is to discover truth" (Kenny 1978/1975: 73). The two principal types of inference used in theoretical reasoning are the Fallacy of Affirming the Consequent (= FAC) and Modus Ponens (= MP). With some simplification, they can be said to summarize the processes of **abduction** and **explanation**, respectively (for a fuller account, cf. Itkonen 2005a: 25-35). In (1) the conclusion of FAC expresses the (hypothetical) **cause** while in (2) the conclusion of MP expresses the (observable) **effect**.

Let us examine an example mentioned by Davidson (1968/1963: 83). "Why did Jones go to church? – Because he wanted to please his mother". In other words, the action of going to church (= A) was probably the **means** he chose to achieve the **goal** of pleasing is mother (= G-1). Notice that A and B stand here for **sentences**, the meaning of *G-1* → *A* being 'If Jones wants to please his mother, then he goes to church'. (Thus, we are speaking of a reason for possibly recurrent actions.) First, as shown by (1), we use FAC in order to tentatively (& abductively) infer G-1 as the cause/goal of the effect/action A: the fact that Jones went to church becomes understandable if we assume that he did so in order to please his mother. Second, as shown by (2), we use MP to explain A with the aid of G-1: If Jones wants to please his mother, then he goes to church; he (by assumption) does want to please his mother; therefore he went to church on this particular occasion:

(1) FAC	A	(2) MP	G-1 → A
	G-1 → A		G-1
	_____		_____
	G-1		A

Because of its **deductive** character, MP is the prototype of theoretical reasoning: it must be the case that if the premises are true, the conclusion is true. (It is no accident that in all standard axiomatizations of propositional logic, MP is the **only** rule of inference, apart from the rule of substitution; cf. Itkonen 2003a: 64-67). FAC, by contrast, allows for the possibility that the conclusion is false although the premises are true. (The implication $p \rightarrow q$ is true also if the antecedent p is false, irrespective of whether the consequent q is true or false: *G-1* → *A* is true also if Jones goes to church for some other reason, for instance, in order to meet his girl friend.) FAC, being an integral part of scientific thinking, is a 'fallacy' only from the deductive point of view. This misleading terminology has given rise to many misunderstandings. The order of the premises in (1) and (2) is significant psychologically, but irrelevant from the logical point of view.

Practical reasoning adopts the agent's perspective: "This is an inference in which the first premiss mentions an end of action and the second premiss some means to this end. The 'practical' conclusion which results from the premisses would consist in using the means to secure the end … This is a prototype case of what is usually called **teleological explanation**" (von Wright 1978/1972: 46, 58; original emphasis).

For illustration, let us reproduce Kenny's (1978/1975: 63) example, giving the number (3) to it and displaying its basic structure in (4):

(3) I'm to be in London at 4.15.
If I catch the 2.30 I'll be in London at 4.15.
So I'll catch the 2.30.

(4) G-2
A → G-2
_____
A

These are Kenny's comments on (3): "Reasonings of this form – which we might call the *modus ponens* of practical reasoning – are as ubiquitous as their counterparts in normal theoretical *modus ponens*. Clearly in some sense we use a **different logic** when we reason practically and when we reason theoretically. For in the ordinary logic used in theoretical reasoning [the expression] *q; if p then q; so p* is not a valid argument form, but the fallacy of affirming the consequent" (p. 63; emphasis added).

(3) has the same FAC structure as (1), as shown more clearly by (4), except that the conclusions are G-1 and A, respectively. G-1, as used in (1) and (2), is the **reason** (= goal-and-belief) for doing A. By contrast, G-2, as used in (4), is just the goal (to be brought about by A); hence, it is **included** in (the equivalent of) G-1. Our rational explanation (= RE) is given in (5). When the prefixes G and B are stripped away, the 'truncated' version that remains is identical with (4); let us designate it as (4'):

(5) RE G:Y
B:(X → Y)
_____
G:X

(4') Y
X → Y
_____
X

It is (4)/(4') which exemplifies the Kenny-type practical inference. It is – to repeat – a **simplified** version of (5) insofar as the propositional attitudes, designated by G and B, remain implicit. (To be sure, (3) contains the expression *I'm to be.*) Therefore it would be misleading to say *simpliciter* that RE exemplifies FAC. It is more correct to say that RE **contains** an exemplification of FAC, just as (5) contains (4'). It is only with this caveat that we can accept Kenny's thesis, which simply identifies practical reasoning with FAC.

Now we are in a position to clearly see the gist of this thesis. The crucial comparison is between (2) and (4), or between MP and FAC, with A as the conclusion of both. (2) and (4) contain the implication $p \rightarrow q$ (to use a neutral notation), but in (2) the conclusion is the consequent q whereas in (4) it is the antecedent p. First, in this implication p and q qualify as sufficient vs. necessary conditions; and second (as we have agreed), MP and FAC embody theoretical vs. practical reasoning. It follows that the difference between these two types of reasoning boils down to this: the conclusion of a theoretical argument is a **necessary** condition whereas the conclusion of a practical argument is a **sufficient** condition.

A few words of clarification are now in order. It is easy to understand that when the basic implication 'if p then q' is true, p stands for a **sufficient** condition: if p is true, q is true as well. But the truth of p is not **necessary** for the truth of q. As noted above, the implication $p \rightarrow q$ remains true even if p is false, in which case some **other** condition may suffice to make q true. (For instance, both of these implications may be true: 'If Jones wants to please his mother, he goes to church' and 'If Jones wants to meet his girl friend, he goes to church').

On the other hand, it is also easy to understand that in the 'non-basic' implication 'only if p then q', p stands for a **necessary** (but not sufficient) condition; e.g. 'only if I open my eyes, can I see Mary sitting in front of me'. (Obviously, opening my eyes is not **sufficient** in itself; Mary must actually be there too). But now comes the intuitively difficult and yet decisive point: q stands for the necessary condition not only in the non-basic implication *only if q then p* but also in

the basic implication *if p then q*. The easiest way to see this is to compare these two versions of the **equivalence** (of which the latter version explains why 'equivalence' is also called 'bi-conditional')

if p then q, and [only if p then q] =
if p then q, and [if q then p]

The sentences within the square brackets must mean the same thing, based on this principle: if A = (B + C) and A = (B + D), then C = D.

As noted before, 'condition' is more abstract than 'cause'. If *p* is the sufficient **cause** (and condition) of *q* in *if p then q*, then *q* is the necessary **effect** (and condition) of *p*, but of course **not** a cause of *p*. Inversely, if *p* is the necessary cause (and condition) of *q* in *only if p then q*, then *q* is the sufficient effect (and condition), but not cause, of *p*. The explanatory interest concerns causes while effects are something to be taken for granted. To be sure, observable effects are the starting point for the (abductive) search for hypothetical (= non-observable) causes.

Let us quote Kenny's (1978/1975) résumé:

> "In theoretical arguments it is reasoning to necessary conditions – deductive theoretical logic – which is **conclusive**, in the sense of ensuring that the conclusion has the value which the reasoning aims at, namely truth; only deductive inference makes it certain that if the premisses are true the conclusion is also. … On the other hand, in practical inference it is only the logic of satisfactoriness which is **conclusive**, in the sense of ensuring that the conclusion has the value which the reasoning aims at, namely the satisfaction of the reasoner's wants" (p. 74).

This concludes the argument. But, in order not to leave any loose ends, let us add the following remark. The primary type of theoretical reasoning, i.e. MP, yields conclusions identical with necessary conditions whereas the secondary type of theoretical reasoning, i.e. FAC, yields conclusions identical with sufficient conditions. By contrast, the primary type of practical reasoning, **imperfectly** exemplified by FAC, yields conclusions identical with sufficient conditions. Now, there ought to be – by analogy – a secondary type of practical reasoning which yields conclusions identical with necessary conditions. This is indeed the case. In fact, von Wright (1978/1972) argues that Aristotle's original idea of practical reasoning had this characteristic. In explicating this idea, von Wright proceeds gradually: he starts with a first-person premise 'I want to attain the end E', then shifts into the third person, then reformulates E as a sentence, and finally settles (p. 53) on the following type of inference:

(6) The agent intends to make it true that E
He thinks that, unless he does A now, he will not achieve this
Therefore he intends to do A now.

While von Wright regards this conclusion as valid (in the practical sense), he feels uncertain about how to reach the ulterior conclusion 'He does A now'. This is of course the perennial problem of mental causation, i.e. how to move from thought to action. So much is clear, in any case, that A stands for a **necessary** condition, as expressed by the *unless* conjunction: without it, E cannot be achieved (or so the agent thinks). This makes (6) analogous to MP, which can perhaps be seen as a virtue. But at the same time it makes (6) less successful than the Kenny-type inference as an explanation of how (and why) people act. Necessary conditions are irrelevant if they do not help in bringing about the goal-state; only sufficient conditions will do. To see this, let us to compare the Kenny-type inference (7) with the von Wright -type inference (8):

(7) I want to see Mary
I will achieve this, if I go meet her (and open my eyes)
Therefore I will go meet her

(8) I want to see Mary
I will not achieve this, unless I open my eyes
Therefore I will open my eyes

Remember that every necessary condition for E must be included in every sufficient condition for E. Now, under normal circumstances, going to meet Mary is a **sufficient** condition for me to see her (assuming, first, that I am not blind and, second, that I do not keep my eyes closed). On the other hand, opening my eyes in her presence is a **necessary** condition for me to see her (because – obviously – I cannot see her if my eyes are closed). Let us again quote Kenny (1978/1975): "Having carried out a piece of practical reasoning to necessary conditions, and put the conclusion into action, the reasoner cannot then rest secure in the confidence that what he has done will bring about the state of affairs he wants: there may be **more** that he has to do in order to achieve his goals" (p. 74).

Let us assume that at this moment Mary and I are living in different cities. Then it is an understatement to say that, in order to see her as soon as possible, I must do **more** than just open my eyes, even granting that opening my eyes (= not keeping them closed) is a necessary condition for me to see her. Therefore (5), i.e. reasoning to a sufficient condition, is preferable over (6) as an explanation of how, and why, we act.

What follows is a direct confirmation of the preceding argument. It is a quote from Itkonen (2011c), which was written before I became aware of Kenny (1978/1975): "Assuming that a goal has been chosen (in whatever way), it is often, and perhaps even typically, the case that the agent-to-be has at his/her disposal not just one but **several** courses of action each of which, to the best of his/her knowledge, will achieve the goal at (roughly) the same 'cost'. Hence, none of them is necessary, and each is sufficient. Clearly, it is **this** situation which is, in general, characteristic of linguistic change. Therefore it is just **wrong** to claim, indiscriminately, that every (linguistic) change is necessary, and can only be explained as being such" (p. 197). – The core of this argument was anticipated in Itkonen (1983a): "if *S[peaker]* has a rational *G[oal] & B[elief]* entailing *A[ction]* or, more realistically, a **disjunction** *A-1 V ... V A-n*, …" (p. 174; emphasis added).

Above, we have seen that formal logic is not (or not only) a 'luxury' but can, rather, teach us something new about concepts which we think that we know, because we have been using them during our entire life. First, let us recall the identity between (a) 'if p, then q' and (b) 'only if q, then p', **both** of which are expressed by the single formula $p \rightarrow q$. Second, applying this principle to the (rational) explanation of actions, the situations where an action (= A) is either a sufficient means or a necessary means to bring about the goal (= G) are formalized, respectively as follows:

sufficient: A → G ('if Action, then Goal')
necessary: G → A ('only if Action, then Goal')

Next, we get the following equivalences by means of contraposition (where '=' stands for the equivalence sign):

A → G = ~G → ~A
G → A = ~A → ~G

Finally, let spell out the meanings of the right-hand formulae (adapting the tense of the verb to the respective situation):

~G → ~A ('if the Goal was not achieved, the Action was not done')
~A → ~G ('if the Action is not done, the Goal will not be achieved', i.e.
'the Goal will not be achieved unless the Action is done')

The whole point of this exercise is to show that when *if – then* implications are used in describing Action – Goal relations, they are intuitively transparent, only when the Action-sentence is contained in the **antecedent**. The reason is obvious: because Action *realiter* precedes Goal, those implications are easier for us to understand where the antecedent, whether affirmed or negated, describes Action (and not Goal).

Let us reconsider the difference between MP and FAC. Because FAC is non-deductive, its conclusion, e.g. A in (4), is of course not necessary (in the sense of being entailed by the premises). But what **is** necessary, is G-2, given A. This is what it **means** to say that A is a sufficient condition for G-2: if A is genuinely sufficient, then G-2 **must** occur.

In this context we must also have a look at how von Wright (1971) describes the nature of **historical explanation**: "The two main types of causal explanation [are] explanations in terms of sufficient conditions and explanations in terms of necessary conditions. The first answers questions of the schematic form *Why necessary?* and the second questions of the type *How possible?*"(pp. 135-136). In the sequel the distinction is illustrated by these quite realistic examples: Why was this ancient city destroyed? (= What was the [actual] sufficient condition which made its destruction necessary?) How was it (technically) possible to construct the city walls out of such colossal stones? (= What were the necessary conditions which made this possible?)

One final remark. A **presupposition** Y for X is just one subtype of a **necessary condition** for X: 'It must be the case that if John has stopped beating his wife, then John has a wife' = 'If X, then Y'. Or consider a popular version of Kant's 'transcendental argument': "It must be the case that if we perceive phenomena in space and time, this is due to the fact that we have a built-in capacity to perceive phenomena through the 'lenses' of space and time" = 'If X, then Y'.

Appendix 7: The *Langue vs. Parole* Distinction in Typological Linguistics

As a social-normative entity, every **institution** exemplifies w-3; and languages are institutions. **Institutional behavior** is more complex: as correct vs. incorrect or rational vs. irrational, it partakes not just of w-1 and w-2 but also of w-3. It is natural to identify language vs. linguistic behaviour with *langue vs. parole* (cf. Section 17). The role of this distinction in typological linguistics has been discussed in the Introduction of Itkonen (2005b). A lengthy quotation now follows:

> "From 1994 onwards, I have been giving either full-semester or half-semester courses on the ten languages included in this book [= Diyari, Hindi, Hua, Rapanui, Swahili, Tamil, Wari', West Greenlandic, Yagua, Yoruba]. The respective chapters are identical with the photocopied material that has over the years been distributed to the students …
>
> … With increasing urgency, it is being claimed nowadays that "everything in language is dynamic, emergent, and variable". When I see or hear people making this claim, I ask myself whether they have ever read the grammar of any language, and if so, how much they have understood of what they have read. If everything in language is variable, then the only valid type of linguistic description must be **statistical** in character. The fact is, however, that while grammars provide the primary way to describe languages [for the great majority of linguistics, as specified

> before], they in general use **no statistics** at all. This elementary truth is well confirmed by the grammars utilized in this book. (To be sure, Payne & Payne 1990 counts as a partial exception.)
>
> The variation in actual (linguistic) behaviour can only be described by statistics. If grammarians do not use statistics and, by implication, do not describe actual (linguistic) behaviour, what is, then, the subject matter of their (non-statistical, categorical) description? It is the **structure**, or more generally, the **system** of the language in question. It follows that structure is primarily **existent**, and only secondarily 'emergent'. This point has also been forcefully argued by Givón (1995: 175-176), who emphasizes the importance of "taking structure seriously". Structure/system is in turn identical with Saussure's *langue* (with the qualification that some parts of the *langue* may be non-categorical, not in the sense of 'statistical', but in the sense of 'gradual' or 'continuum-like'). Thus, in my opinion, the fashionable criticism of the *langue – parole* distinction is based on a misunderstanding. This misunderstanding has been made possible by a related one, namely the view that this distinction was a conceptual innovation. But, in fact, Saussure merely gave a systematic expression to a practice that had always existed (and will always exist). Every grammarian describes *langue* (and not *parole*, or actual linguistic behaviour). This is true of Panini, Tolkaappiyanaar, Sibawaihi, Apollonius Dyscolus, Varro, Thomas of Erfurt, Arnauld & Lancelot, and so on (for extensive documentation and discussion, see Itkonen 1991, 2000). It is also true of the grammars utilized in this book.
>
> In a **complete** description of any language, there is room **both** for categorical description **and** for statistical description. For some 30 years, I have been exploring the precise relation between these two types of description [see the publications mentioned here in Sections 20, 23]. However, they are **asymmetric** in the sense that, as shown by the history of linguistics, there can be categorical descriptions without statistics, but not vice versa. Now, it can of course be argued that all grammars that have existed up to now are simply mistaken and that an adequate grammar **ought** to be exclusively statistical, with no categorical component at all. In the above-mentioned publications I have shown in excruciating detail why such a view (apart from being rather presumptuous) is conceptually impossible.
>
> As far as I can see, all such and similar attempts to **reduce** *langue* to *parole* (to use the Saussurean terms) are doomed to failure for the same reason as was Sibawaihi's analogous attempt for some 1'200 years ago. In addition to making this point, the following lengthy quotation from Itkonen (1991) is also meant to give a representative example of how the history of linguistics can illuminate current debates: we are simply wrong if we think that the problems with which we are struggling right now are novel, or have originated in our own (post?-)modern era" (Itkonen 2005b: 3-4).

The text continues with a quotation from Itkonen (1991: 152-157), which describes a very intelligent attempt by Sibawaihi to prove that grammarians can dispense with theoretical notions and thus come directly to grips with the concrete reality of living speech. On reflection, however, this attempt fails, just as any analogous attempt must. Why? The answer is to be found in the passage referred to above.

The nature of typological linguistics as here characterized is massively confirmed by the 1000-page overview given in Itkonen (2008-2009-2010). In general, (morphosyntactic) typology has been understood as **typology of form**, based on the principle 'same meanings, different forms'. More recently, **typology of meaning** has also come into being, based on the

principle ‘different meanings, indifferent forms’. In both cases, the primary concern is to describe the *langue*-type w-3 structure. But when the structure needs to be **explained**, this must be done by means of rational/functional explanations which involve w-2 elements (cf. Sections 20-21, Appendix 5).

Appendix 8: More on Frege’s Anti-Psychologism

As noted in Section 16, Frege (1967/1918) made a distinction that later came to be known as ‘proposition vs. illocutionary force’. For instance, a proposition [= *Gedanke*/‘thought’], if asserted, is either true or false. Additional remarks on propositions vs. meanings:

> “With the sentence ‘Alfred has still not come’ one really says ‘Alfred has not come’ and, at the same time, hints that his arrival is expected, but it is only hinted. It cannot be said that, since Alfred’s arrival is not expected, the sentence is therefore false. … A sentence can be transformed by changing the verb from active to passive and making the object the subject at the same time. In the same way the dative may be changed into the nominative while ‘give’ is replaced by ‘receive’. Naturally, such transformations are not indifferent in every respect; but they do not touch the thought, they do not touch what is true or false” (p. 23).

Remarks on the crucial distinction ‘thought vs. idea’:

> “[There is] an inner world distinct from the outer world, a world of sense-impressions, of creations of his imagination, of sensations, of feelings and moods … I want to collect all these under the word ‘idea’.
>
> Now do thoughts belong to this inner world? Are they ideas? … How are ideas distinct from things of the outer world?
>
> First: ideas cannot be seen or touched, cannot be smelled, nor tasted, nor heard. …
>
> Secondly: ideas are had. … An idea which someone has belongs to the content of his consciousness. …
>
> Thirdly: ideas need a bearer. Things of the outer world are however independent. …
>
> Fourthly: every idea has only one bearer; no two men have the same idea. …
>
> Is a thought an idea? If the thought I express in the Pythagorean theorem can be recognized by others just as much as by me then it does not belong to the content of my consciousness, I am not its bearer; yet I can, nevertheless, recognize it to be true” (pp. 26-28).

And the same goes for an ordinary sentence like ‘This tree is covered with green leaves’, provided the time and place of its utterance is explicitly indicated:

> “Only a sentence supplemented by a time-indication and complete in every respect expresses a thought. But this, if it is true, is true not only today or tomorrow but timelessly” (p. 37).
>
> “If every thought requires a bearer, to the contents of whose consciousness it belongs, then it would be the thought of this bearer only and there would be no science common to many, on which many could work” (p. 29).

> "It is quite incredible that I should really have only my inner world instead of the whole environment, in which I am supposed to move and to act. And yet this is the inevitable consequence of the thesis that only what is my idea can be the object of my awareness" (p. 30).
>
> "The thought belongs neither to my inner world as an idea nor yet to the outer world of material, perceptible things" (p. 35). "Thoughts are by no means unreal but their reality is of quite a different kind from that of things" (p. 38).

By now, Frege's anti-psychologistic argument has been given in outline. Let us add a couple of supplementary remarks. Philosophical Berkeley-type idealism leads to solipsism, as shown by the quotes from pp. 29-30. But, according to Frege, so does a more 'scientific', exclusively physiological approach. Let us find out how a "physiologist of the senses" might explain his conscious experience of seeing a tree in front of him:

> "He is … inclined to regard his consciousness as dependent on nerve-fibers and ganglion cells. … Further processes in the nervous system are perhaps involved … Physical, chemical, and physiological occurrences insert themselves between the tree and his idea". It is possible to artificially stimulate the visual nerves in such a way that "an idea of a tree will finally occur even though such a tree does not exist at all. … If we call what happens in our consciousness idea, then we really experience only ideas but not their causes. And if the scientist wants to avoid all mere hypothesis, then only ideas are left for him, everything resolves into ideas, … If everything is idea, then there is no bearer of ideas. … If there is no bearer of ideas then there are also no ideas for ideas need a bearer without which they cannot exist" (pp. 31-32).

This passage is both enlightening and entertaining. It should give pause to those who are eager to abandon traditional philosophy and to found a new philosophy (or 'philosophy') on a strictly scientific neuro-biological basis (cf. Section 24). The same applies, obviously, to those who insist on all-out psychologism to the exclusion of any version of 'world-3'. – Katz (1981) contains informative discussions of Frege's philosophy.

Appendix 9: More on Quine's big mistake

A) Semantics

In Section 3 we became acquainted with Quine's view that a certain amount of relativity between analytic and synthetic, or necessary vs. empirical truth, is enough to falsify this distinction altogether; and we concluded that this argument, based on **semantic** relativity, is fallacious. In this first part of Appendix 9 we shall show, with the aid of Lewy (1976), that Quine is involved in a **contradiction**: he is forced to endorse the very distinction which he purports to reject.

To begin with, we shall make use of the following examples, with Lewy's (1976) original numbering:

(1) x = the number which succeeds 8 [i.e. 9]
(1') x = the number of planets [i.e. 9]
(2) the number which succeeds 8 is greater than 7

Next, let us have a lengthy quotation from Lewy (1976):

> "So Quine is clearly committed to recognizing the distinction between necessary propositions and contingent [= synthetic] propositions, although in some of his writings (e.g. in 'Two Dogmas of Empiricism') he seems to hold that the distinction is essentially unclear, and, unless I have misunderstood him, talks as if one could do without it. Indeed, Quine is committed to recognizing the distinction as soon as he admits, as he repeatedly does, that conditions (1) and (1') are not **analytically** equivalent. For by 'not analytically equivalent' he means of course 'not necessarily equivalent' – he is not trying to distinguish between 'analytically equivalent' and 'necessarily equivalent' [hence, 'necessary' = 'analytic']. And we must also notice that (2) is **not** a 'logical truth' in Quine's sense: it is not 'a statement which is true and remains true under all reinterpretations of its components other than the logical particles'. [Why? Simply because it contains **no** logical particles.]. It follows immediately that Quine is committed not merely to recognizing the distinction between 'logical truths' (in his sense) and truths which are not 'logical': he is also committed to recognizing the distinction between necessary truths and truths that are not necessary, where 'necessary' does **not** mean **'logically** true'. [More concretely: on the analytic-synthetic continuum given in Section 3, Lewy's proposition (2) could be inserted between the 'logical truth', i.e. the 'explicitly analytical truth', (7) 'No unmarried man is married' and the 'broadly analytic truth' (8) 'All bachelors are unmarried'.]
>
> I may add parenthetically that Quine seems to think that the distinction between 'logical particles' and particles which are not logical – on which the distinction between logical and non-logical truths (in his sense) is based, is itself arbitrary. As if one could take 'red' and 'blue' to be logical particles, and 'not' and 'and' to be descriptive particles! (Why hasn't anybody tried to do this?)" (pp. 30-31).

The second, 'parenthetical' paragraph of this quotation is extremely welcome. At one stroke, it reveals how preposterous Quine's position really is.

Because Quine's overall position contains a **contradiction**, it is false. More precisely, it is not the case that it just happens to be false and could, under different circumstances, be true. It is **necessarily** false; it **must** be false.

Over the years, I have had the experience that some, or even many, of my colleagues pay less and less attention to the occurrence of contradictions in their own thinking or in the thinking of others. This is a pernicious attitude. Why? Let Aristotle explain to us the all-importance of the principle *~(p & ~p)*, or the principle that no meaningful thought can exemplify a contradiction à la *(p & ~p)*:

> "The most certain principle of all is that regarding which it is impossible to be mistaken; […] For a principle which every one must have who understands anything that is, is not a hypothesis, and that which every one must know who knows anything, he must already have when he comes to a special study. Evidently then such a principle is the most certain of all; which principle it is, let us proceed to say. It is this, that **the same attribute cannot at the same time belong and not belong to the same subject and in the same respect**; […] This, then, is the most certain of all principles, since it answers to the definition given above. For it is impossible for anyone to believe the same thing to be and not to be, as some think Heraclitus says. For what a man says, he does not necessarily believe" (*Metaphysics*1005b, 10-25; emphasis added). "But if all are alike both wrong and right, one who is in this condition will not be able to speak or to say anything intelligible; for he says at the same time 'yes' and 'no'. And if he makes no judgment but 'thinks'

and ‘does not think’, indifferently, what difference will there be between him and a vegetable?” (1008b, 5-15).

Indeed, none at all! In the hope of keeping the number of such vegetable-like linguists among us to an absolute minimum, let us sharpen our faltering acumen for detecting contradictions! I for one have certainly tried to do so in what precedes.

Most of us are familiar with the somewhat cryptic saying ‘anything follows from a contradiction’. Let us show that this is literally true:

(1) p & ~p
(2) p
(3) p V q
(4) ~p
(5) q

(2) follows from the premise (1) by means of ‘Simplification’: from any conjunction *A & B* one is allowed to infer either *A* or *B*; (3) follows from (2) by means of ‘Addition’: from any sentence *A* one is allowed to infer a disjunction *A V B*; (4) follows from (1) by means of Simplification; (5) follows from (3) and (4) by means of ‘Disjunctive Syllogism’: if one has two alternatives *A* and *B*, and if *A* is excluded, then one is allowed to infer *B*. Now, the significant thing is that (5) is an entirely arbitrary sentence, not connected to anything.

B) Ontology

We saw in Section 3 that the existence of **semantic** relativity is not enough to falsify the analytic – synthetic distinction. In this second part of Appendix 9 we shall argue that an analogous argument, based on **ontological** relativity, is fallacious as well. – Let us start with a few quotations from Magee (1982):

> “Quine: Philosophy lies at the abstract and theoretical end of science. Science, in the broadest sense, is a **continuum** that stretches from history and engineering at one extreme to philosophy and pure mathematics at the other. Philosophy is abstract through being very general. A physicist will tell us about causal connections between events of certain sorts; a biologist will tell us about causal connections between events of other sorts; but the philosopher asks about causal connection in general – what is it for one event to cause another?” (p. 143; emphasis added).
>
> “Quine: I hold that **physical** objects are real and exist externally and independently of us. I don’t hold that there are only these physical objects. There are also **abstract** objects, objects of mathematics that seem to be needed to fill out the system of the world” (p. 144; emphasis added).
>
> “Quine: … Assuming sets, or classes, is on an equal footing with assuming molecules, atoms, electrons, neutrons, and the rest; all these are objects, concrete and abstract, that are assumed by the network of hypotheses by which we predict and explain our observations of nature. I see natural science as **continuous** with the mathematics that it uses, just as I see all this as **continuous** with philosophy.
>
> Magee: You say ‘on an equal footing’, but it seems to me there is a very important difference between the sense in which sub-atomic articles are unobservable and the sense in which numbers are unobservable. Sub-atomic particles are bits of

material, bits of stuff. … Numbers, on the other hand are not material in any sense. They are abstract through and through – there is **nothing but** abstraction to them.

Quine: It's true. There is this **discontinuity** [*sic!*]. However, even the continuity of ordinary observable objects with the elementary particles is rather more tenuous than had once been supposed, … [Recent research] has finally carried us to the point where the continuity is no longer so evident" (pp. 148-149; the third emphasis in the original).

Notice that Quine fails to answer the objection made by Magee. To see why, let us single out the three basic types of entity involved in this discussion: (A) = ordinary physical objects, (B) = elementary particles, (C) = numbers. Both (A) and (B) qualify as material or spatiotemporal (though not to the same degree), while (C) qualifies as non-material or non-spatiotemporal. In his response to Magee, Quine tries once again to apply his 'non-absolute = non-existent' ploy (i.e. Fallacy F1), namely by trying to show that there is a seamless **continuum** going from (A) to (C). And this he does by means of two consecutive assumptions: first, the difference between (A) and (B) is greater than we have thought (i.e. "the continuity [between the two] is no longer so evident"; but evident or not, it still **is** there); second, the difference between (B) and (C) is smaller than we have thought. But while he does establish the former point, he fails to establish the latter one. Why? Because, on Quine's own terms, there is no gradual ascent from (A) via (B) to (C). There is, rather, an absolute break (= "**dis**continuity") between what can exist in space and time, i.e. (A) & (B), and what cannot, even in principle, i.e. (C). Therefore Magee's objection remains valid.

In fact, the Magee-type objection, if duly elaborated on, suffices to repudiate Quine's program in its entirety. Let us focus on the role of those **abstract objects** which, according to Quine, are both absolutely necessary and absolutely different from physical things. For him, their "justification lies in the indirect contribution that they make to natural science" (p. 148). But then he adds: "They contribute already in a **minor** way when we speak of zoological species and genera: these are classes" (emphasis added). Now, this is just wrong. The organizing function performed by classes (or sets) is equally important at each and every ontological/metaphysical level, from the most simple to the most complex. Classes and sets are needed not only in zoology; they are constitutive of "ordinary observable objects" like books and chairs as well. It is a fallacy to think that sets/classes become more and more important as the scientific thinking develops.

What is, indeed, the ontological status of Quine-type abstract objects? First, they are, obviously, not physical entities. Second, they are not mental entities either, as is demonstrated by the following quotations:

"Quine: … I don't recognize the existence of minds, of mental entities, in any sense other than as attributes or activities on the part of physical objects, mainly persons" (p. 144).

"Magee: But these abstract objects are not mental – it's important to make this distinction, is it not?

Quine: That they are not mental? That's it" (p. 148).

What are the remaining options? One option, adopted by Katz (1981), is to identify 'abstract' with 'Platonic'. Another, adopted by Itkonen (1983a), is to view abstract objects as inhabitants of 'world-3', resulting from social-*cum*-psychological processes of construction. The latter option is not available to Quine, which makes him, willy-nilly, some sort of Platonist.

The upshot is just as surprising as it is unavoidable. Quine's ontology turns out to be strongly **dualistic** in its outline: everything is either physical or abstract, either space-time or not. Interpreted in semantic terms, this result rehabilitates the analytic-synthetic distinction. In fact, it does more. In Section 3 we agreed that while the two extremes of the analytic-synthetic continuum

are absolutely different, like black and white, they are nevertheless connected by an intermediate gray area. But if 'abstract/non-spatiotemporal' and 'physical/spatiotemporal' are replaced, respectively, by 'black' and 'white', we see that Quine's ontology contains no gray area at all. In semantic terms, it not only justifies the gradual analytic-synthetic distinction, but it also re-introduces the classical, absolute analytic-synthetic distinction of the 1930's.

In Appendix 2, it was argued that once we explicitly concentrate on the **language** of physics, its ineluctably **normative** character makes us realize the ultimate incoherence of all-out physicalism. Quine exemplifies abstract objects by means of classes/sets and numbers. Their **linguistic** nature may remain implicit, for instance, when they are characterized as parts of "the system of the world" (p. 144), but it becomes explicit as soon as they are viewed as "assumed by our network of **hypotheses**" (p. 148; emphasis added). Why? Because a (permanently) non-verbalized hypothesis is not a coherent notion.

Let us add one more point. As we saw above, Quine starts (p. 143) by noting that philosophy is continuous with science. This seems uncontroversial enough, and is confirmed e.g. by Williams (1982): "there are parts of science which are themselves the philosophy of science; parts of linguistics which are the philosophy of linguistics" (p. 120). Indeed the bulk of my own publications can be said to have been devoted to establishing the truthfulness of this position. But we should – *Nota Bene!* – pay attention here to the expressions "**parts** of science" and "**parts** of linguistics". We are once again in the presence of gradual distinctions, so easily misunderstood.

To illustrate his point, Quine adduces the supposed continuity between telling what 'causation' means and telling when one event has caused another. But this is a bad example, because it nicely illustrates the **dis**continuity between philosophy and science. I happen to be in a position to assert this as a fact. In my 1983 book, I **first** define conscious actions, from the causal point of view, as teleological, non-nomic, and representational (p. 54); and I show in some detail how all these aspects are accounted for in my notion of rational explanation (pp. 49-53, 92-107; also cf. here Sect. 21 and Appendix 5). **Second**, and much later, I apply this apparatus to explain (e.g.) the following aspect of linguistic behaviour: "In all languages, if the intransitive subjects have overt case-marking, the transitive subjects have it too" (pp. 215-218). An outsider may be excused for thinking that I am speaking here, *grosso modo*, of one and the same thing. But an expert knows that these are two absolutely different things: first, definition (= philosophy); second, application (= science/linguistics).

Of course, there is always a ('dialectical') interaction between definition and application. But to claim that this fact suffices to **eliminate** the distinction between the two is like claiming that since, in spoken language, two words X and Y always occur in some order (i.e. either XY or YX) there is ('ultimately') no difference between word order and word.

Appendix 10): Re-contextualizing 'Metaphors We Live by'

In 1710, Leibniz pointed out that **space** constitutes the natural basis for **abstract** notions, as concretely shown by the origin of French **prepositions**:

> "It will […] be well to consider this **analogy** between sensible and non-sensible things […] as, for example, *to, with, from. before, in, outside, by, for, upon, towards* (*à, avec, de, devant, en, hors, par, pour, sur, vers*), which are all derived from place, from distance, and from motion, and afterwards transferred to every sort of change, order, sequence, difference, agreement" (English translation by Uhlan Slagle, quoted in Itkonen 2005a: 38-39; emphasis added).

Becker (1841/1827: 72-81) generalizes this result: non-sensible entities can be expressed only by a sort of 'translation' process, i.e. by using words originally referring to sensible entities. Hence, talk about non-sensible entities is necessarily metaphorical (cf. Itkonen 1991: 281-282).Whitney (1979/1875) offers an eloquent plea to the same effect:

> "A conspicuous branch of the department of figurative transfer, and one of **indispensable importance** in the history of language, is the application of terms having a physical, sensible meaning to the designation of intellectual and moral conceptions and their relations. It is almost useless to attempt to illustrate this; […] *Important* means 'bringing in' […] *Relation* is 'carrying back', as *transfer* is 'carrying across' in Latin, and *metaphor* nearly the same thing in Greek. […] *Trivial* is what is found 'at the street-crossings' […] *Derivation* involves the curiously special idea of drawing off streams of water from a *river* […] We *see* things that never come before our bodily eyes […] In fact, our whole mental and moral vocabulary has been gained precisely in this way; the etymologist feels that he has not finished tracing out the history of any one of its terms until he has hunted it back to the physical conception in which, by the general **analogies** of language, it must have had its origin. […] Considered with reference to ends rather than the methods of expression, there is **no grander phenomenon** than this in all language-history" (pp. 88-90; emphasis added).
>
> "Every figurative transfer which ever made a successful designation for some non-sensible act or relation, before undesignated, rested upon a previous perception of **analogy** between the one thing and the other; no one said *apprehend* of an idea until he had felt the resemblance [= analogy] between the reaching-out of the bodily organs after a physical object they want to handle and the striving of the mental powers toward a like end; we repeat the act when we say 'you don't *get hold of* my meaning'. No one said 'a thought *strikes* me', or '*occurs* to me' (i.e. 'runs against me'), or '*comes into* my head' (German, *fällt mir ein*, 'falls in to me'), except as result of an **analogy** which his mind had discovered between the intellectual and the physical action" (pp. 137-138; emphasis added).

Paul (1975/1880) is bound to repeat the same argument, also pointing out – Leibniz-like – the spatial origin of prepositions used to express any kind of relation:

> "Die Metapher ist eines der wichtigsten Mittel zur Schöpfung von Benennungen für Vorstellungskomplexe, für die noch keine adäquaten Bezeichnungen existieren. […] Die **Analogie** zwischen räumlicher und zeitlicher Erstreckung macht die Übertragung für die räumliche Anschauung geschaffenen Ausdrücke, soweit nur eine Dimension in Betracht kommt, auf zeitliche Verhältnisse möglich; vgl. *lang, kurz, gross, klein, Mass, Teil* […]; die Präpositionen *in, an, zu, bis, durch, über, um, von, ausser, ausserhalb, innerhalb* […] Demgemäss können auch die Ausdrücke für Bewegungen auf die Zeit übertragen werden, vgl. *die Zeit geht dahin* […] Die Raumverhältnisse liefern ferner Bezeichnungen für die Intensität […] Die Verhältnisse und Vorgänge im Raume werden auf das Gebiet des Unräumlichen übertragen. […] Dem entspricht auch der unsinnliche Gebrauch von Wörtern wie *fassen, erfassen, auffassen, begreifen* […] Die Gewohnheit des Menschen die Vorgänge an den leblosen Dingen nach **Analogie** der eigenen Tätigkeit aufzufassen hat in der Sprache viele Spuren hinterlassen, vgl. Wendungen wie *Der Baum treibt Knospen* […]" (pp. 94-97; emphasis added).

For his typology of time-expressions, it was important for Whorf (1956/1941) to emphasize that, at least in the 'Standard Average European', the 'space > time' transfer is perfectly valid:

> "Since physical bodies and their outlines in **perceived space** are denoted by size and shape terms and reckoned by cardinal numbers and plurals, these patterns of denotation and reckoning extend to the symbols of nonspatial meanings, and so suggest an **imaginary space**. Physical shapes 'move, stop, rise, sink, approach', etc. , in perceived space; why not these other referents in their imaginary space? This has gone so far that we can hardly refer to the simplest nonspatial situation without constant resort to **physical metaphors**. I 'grasp' the 'thread' of another's arguments, but if its 'level' is 'over my head' my attention may 'wander' and 'lose touch' with the 'drift' of it, so that when he 'comes' to this 'point', we may differ 'widely', our views being indeed so 'far apart' that the 'things' he says 'appear' 'much' too arbitrary, or even 'a lot' of nonsense!" (pp. 145-146; third emphasis added).

The latter part of this passage is quoted by Brown (1958) in order to show "how ubiquitous the language of **visual space** is in our discussion of psychological as well as temporal matters" (p. 243; emphasis added).

Johnson (1987) has constructed a little story of his own, with a similar (even if more restricted) purpose, namely to show "a few of the many *in-out* orientations that might occur in the first few minutes of an ordinary day". Once again, the spatial origin of **prepositions** plays a central role:

> "You wake *out* of a deep sleep and peer *out* from beneath the covers *into* your room. […] You walk *in* a daze […] You look *in* the mirror and see your face staring *out* at you. […] Once you are more awake you might even get lost *in* the newspaper, might enter *into* a conversation […] Some of these senses of *in* and *out* involve clear-cut physical orientation in space, while others involve more abstract nonspatial relations" (pp. 30-31; original italics).

Johnson offers a rather unconvincing excuse for belaboring this well-worn insight. As he sees it, the connections between "spatial and temporal orientation are so pervasive and so constitutive that they are taken for granted (and thus **overlooked**) in standard accounts of meaning and understanding" (p. 31; emphasis added). Nonsense! Ever since the 19th-century accounts by Whitney and Paul, at the latest, it has been abundantly clear that there is a near-identity between expressions of space and time; the development that it exemplifies was even called by Whitney the 'grandest phenomenon in all language-history'. No one in his/her right mind has ever doubted the importance of this 'concrete > abstract' transfer. So how was it "overlooked"?

Part of the answer (such as it is) is contained in the following statement: "This **new** program, which includes recent work in 'cognitive grammar' and 'space grammar', denies both that there are autonomous language mechanisms and that language is independent of cognition" (p. 31; emphasis added). But this program is not 'new' from the perspective of pre-1957 linguistics (as witnessed by Whitney and Paul, among many, many others); it is as old as Western thinking itself. It might have looked 'new' only in the 1980's when the toxic, amnesia-inducing influence of generativism was slowly beginning to dissipate.

But there may be more. Why is it so important for Johnson to insist that although the preposition *into*, as it occurs in the expression *enter into a conversation*, no longer possesses a spatial meaning, it **originally** did so? (Notice that such trivial truths should **not** be insisted upon.) Although the answer is not explicitly given, it can be inferred from the general 'Body-in-the-Mind' ideology: somehow, deep down, the meaning of *into*, in all of its uses, does remain spatial in character, after all.

Once this is spelled out, it is seen to make no sense at all. Now, to have some proper perspective, let us for a moment go back to the basics, as formulated by Brown (1958):

> "The metaphor in a word lives when the word brings to mind more than a single reference and the several references are seen to have something in common. Sometimes in the past someone or another noticed that the foot [= A] of a man bears the same relation to his body [= B] as does the base [= C] of a mountain to the whole mountain [= D]. [Hence, A:B = C:D] He thought of extending the word *foot* to the mountain's base. The word *foot* then referred to two categories. These categories share a relational attribute which makes them one category. […] The metaphor blazed briefly for the person who created it and it lights up again when anyone hears it for the first time, but for the most of us it is **dead**. This is because with repetition of the phrase *foot of the mountain* the word *foot* loses its exclusive connection with anatomy. […] A metaphor lives in language so long as it causes a word to appear in improbable contexts, the word suggesting one reference, the context another. When the word becomes as familiar in its new contexts as it was in the old the metaphor **dies**. This has happened with *foot of the mountain*" (pp. 140-142; emphasis added).

Now we are able to express more clearly the misgivings created by Johnson's story about "the first few minutes of an ordinary day": he seems to deliberately ignore the distinction between live metaphors and dead ones. But this position is untenable. If consistently maintained, it leads to the absurd conclusion that, e.g., *trivial* still means 'found at the street-crossings'. Let us keep in mind that "dead metaphors are **not** metaphors. They once were, but they no longer are" (Itkonen 2005a: 40). To think otherwise means succumbing to the so-called diachronistic fallacy: the original meaning, even if 5000 years old (or older still), always remains the **true** meaning.

It was for a good reason that both Whitney and Paul repeatedly mentioned **analogy**, and that Brown made (implicit) use of Aristotle general formula for analogy, i.e. A;B = C:D (cf. Itkonen 2005a: 12-13). Because a metaphor is an 'analogy with additional constraints', analogy turns out to be the more fundamental and therefore the more interesting phenomenon, from the cognitive point of view. This is vividly confirmed by de Saussure (1962/1916). On the one hand, "l'analogie, c'est le principle des créations de la langue" (p. 226). On the other, « l'analogie, c'est le principle de rénovation **et** de conservation : [...] on peut dire que [l'analogie] intervient non seulement quand des matériauz préexistants sont distribués dans de nouvelles unités , mais aussi quand les formes restes identiques à elles-mêmes. Dans les deux cas il s'agit du même procès psychologique » (pp. 235 ; emphasis added). The two aspects of the latter quotation are captured by the distinction between 'dynamic' vs. 'static' analogy in Itkonen (2005a: 1.1). What is more, de Saussure's characterization remains too narrow because, thanks to his Neogrammarian background, he excludes phonology from the realm of analogy, failing to see that it is governed by an analogical principle of its own, both in diachrony (cf. Anttila 1989/1972: 76, 88) and in synchrony (cf. Itkonen 2005a: 76-78).

But what **is** analogy? Recent answers to this fascinating question (overlooked by most schools of linguistics) have been given e.g. by Itkonen (2005a) and Hofstadter & Sander (2013).

Appendix 11): A Glance at the Modern Roots Anti-Psychologism in Linguistics

Once Chomsky had (re)defined linguistics *in toto* as part of cognitive psychology, several scholars protested in the mid and late 1970's, including Helga Andresen, Fred Dretske, Larry Hutchinson, Esa Itkonen, Michael Kac, Jon Ringen, and Gerald Sanders (for documentation,

see Itkonen 2003b: 152-158). Relevant contributions from this period can be found e.g. in the following volumes: Cohen (ed., 1974), Cohen & Wirth (eds., 1975), Perry (ed., 1980).

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Appendix to References: The languages described and the grammars utilized in Itkonen (2005b); see Appendix 7.

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