Transcendental Logic as Universal Logic

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In this paper I explain why philosophy in the sense of transcendental philosophy presupposes that there is a universal logic, and why this sets a limit to some understandings of logical pluralism. Using a universal logic is part of but not identical to transcendental argumentation.

§1 Transcentental Logic and Conceptual Schemes

Kant with his introduction of transcendental philosophy as the philosophy which explores the conditions of experience *in general* introduced also *transcendental logic* as to be distinguished from *formal logic*. Transcendental logic in Kant's sense is concerned as an *a priori* investigation with the most general rules and laws of reason. It is not set against formal logic, but contains more substantial claims than 'merely' laying out the logical form of thought. The most general forms of thought, however, since they are part of the necessary conditions to apprehend objects and make judgements at all, are part of the laws of reason. Since reason is universal (i.e. all beings with reason have the same reason [as faculty]) so are these laws and the corresponding claims of transcendental philosophy. By exploring the possibility to make judgements at all transcendental logic is the foundation for any theory of truth (in general). Every specific discourse or field of empirical exploration is founded in this investigation, and *it shares* the most general features that characterize reason. Expressed in terms of analytical philosophy the transcendental investigation is concerned with the most general features of language (as a means of communication and representing thought). To be explained is not the framework of some individual language – be it formal or natural – but the universal frame which is presupposed by all these languages. This talk of 'conceptual schemes' has been criticized by Davidson as the 'third dogma of empiricism'.[1] Davidson's thesis, however, is directed against the claim that there might be several conceptual schemes which are incommensurable with respect to each other. The claim of incommensurability requires that these schemes are not translatable into each other, and this claim is incompatible with a Davidsonian theory of meaning, which starts with the concept of interpretation (or translation). A supposedly untranslatable language (incorporating a supposedly incommensurable

[1] Cf. Davidson, Donald. "On the Very Idea of a Conceptual Scheme", *Proceedings and Addresses of the American Philosophical Association*, 1974.

conceptual scheme) can never be *identified as language* in the first place, since we start with our understanding of what a language is and identify some behaviours as possible targets of translation; and at the same time we had to identify it as *language* to give the incommensurability thesis its proper content. The claim of there being several incommensurable conceptual schemes thus destroys itself. There may be beings the behaviour of which is not translatable, but once we are able to identify something as language we impose the most general features of our framework on the target. We employ here – with these means of translating and identifying – our universal (or transcendental) framework of language. Thus within our kind of linguistic life form the concept of language (and what more specific general features go with it) is one and not many. The many natural language share the features that the universalist tries to identify. Formal languages – that usually abstract from some dimension of language, usually pragmatics as a whole – share some of the features that define, for example, what it takes for an expression to be composed or to have meaning. Davidson's complain about talking of several conceptual schemes should so be read as highlighting the fact that we already have taken our stances within our conceptual scheme. There has to be something that is shared by the many languages. The problem is to identify these features. The task of universal linguistic philosophy is to identify the features of the transcendental frame of language. It might not be much, and it might be quite formal or parameter ridden what is universal in this sense, but it has to be there.

Transcendental philosophy thus is universal. And it should be. Philosophy cannot restrict itself to non-universal languages. The language of philosophy has to be semantically closed. Philosophy does not want to deal only with the structure or conditions of talking in some specific language or languages of some kind, but aims at a theory of the basic structures and conditions of having a language *in general*.

This requires the corresponding resources to express the universal claims. There may not be a hierarchy of languages so that we always talk in a *last* meta-language the semantic properties of which cannot be made clear, except in a further turn of the screw (a new meta-language ...). Universal theories of meaning, truth, knowledge etc. were not to have if we can talk only from some meta-language 'down' to some distinct object-language. A general statement like

(K) Knowledge is true belief.

would be not well-*formed*. But these are the very theories that philosophy is after. And notwithstanding their lip-service to hierarchy solutions of the antinomies most philosophers propose their *general* theories of meaning, truth, belief, reference, knowledge etc. They are right to do the latter, since we have such universal concepts.

There seems to be *no* crucial difference between formal languages and natural languages with respect to the properties being of interest here (i.e. semantic and structural properties), although formal languages have no native speakers, mostly no pragmatics, no socio-linguistics – and so on.

We can investigate and formalize the logical structures of any natural languages. That is one of the central tenets of logic and formalization. We not only talk about properties of all (natural) languages, it seems even incoherent whether there could be two completely incommensurable languages. Such a system could never be identified as a language at all.

There are several logics. This is, however, hardly evidence against universalism: Often standard first order logic and set theory are taken as the meta-language to prove theorems about the logic in question; sometimes – as it should be in intuitionism or dialetheism – the meta-language is taken to be the same logic as the one introduced or explained; but in all cases the logic and its formalisms are argued for in natural language texts. Natural language turns out to be *the last* meta-language, that meta-language in which the most basic formalisms of some other meta-language were introduced. And natural language turns out to be *the universal* meta-language in that all the formal constructions and sentences of some new system can be translated (read) as ordinary sentences with some formal regimentation. There is no extraordinary special or deviant new logic which can say something that we cannot say in (some) natural language. Natural language thus contains the understandability of all these systems. What structures are responsible for this may the task of advanced transcendental philosophy to find out. And we have to make a further distinction between those languages which are possible as such and those which are feasible in the sense of being the medium of communication and representation of embodied, finite, interacting social beings like us intervening in and adapting to a law governed environment.

Our concept of language, therefore, involves unity and universality. There has to be a set of properties defining what a language is. These properties are preserved in change or translation, they are exploited to establish correspondences.

Elucidating these properties and making them explicit from our intuitive understanding of language(s) is the traditional understanding of (transcendental) philosophy (of language). Without semantic closure we would not be *able* to elucidate a concept that we seem to have!

Transcendental philosophy in face of the paradoxes coming with semantic closure becomes a version of dialetheism: There are true contradictions within the universal framework and logic has to be adapted accordingly.[2]

[2] Cf. Bremer, Manuel. *An Introduction to Paraconsistent Logics*. New York et al., 2005.

§2 Universal Logic

Corresponding to this universal scope of its investigations transcendental philosophy needs the logical means to speak universally. Thus transcendental philosophy needs a universal logic.

There are two readings of having a universal logic: weak universal logic and strong universal logic. A universal logic might be universal as a paraconsistent logic, i.e. in all fields in which we need *a paraconsistent* logic this logic can be employed and gives acceptable results. This may be called *the weak universalist program*. One may take the weak universalist program as being extremely cautious: One takes one's favoured paraconsistent logics – and sticks to it in *all* contexts. Since this paraconsistent logic can deal with contradictory contexts it can deal with any context, so it really is universally applicable. The problem with this extreme caution is that one loses all otherwise available consequences in consistent contexts. Therefore one rather tried to distinguish the type of context one is reasoning in. In praxis this meant that we employ standard First Order Logic for all non-semantic or non-antinomic contexts and switch to paraconsistency only in our formalization of complete semantics (or, maybe, set theory).

Or a truly universal logic can be employed everywhere, supposedly containing a way to distinguish consistent from inconsistent contexts, without loss of proper logical power in comparison to **FOL**. This may be called *the strong universalist program*. In case philosophy contains consistent contexts and uses arguments valid only in consistent contexts it seems to need to follow a strong universalist program.

Both the LFI-approach in paraconsistent logic and Adaptive Logics follow the idea to be able *within the system used* to distinguish contexts of a stronger logic (usually **FOL**) and contexts for a paraconsistent logic. The way they do it is completely different, however. In the LFI-approach the distinction what kind of context we have has to be given *beforehand*; only given the corresponding knowledge can we choose the appropriate formalization (i.e. use $\circ A$ or not); in Adaptive Logics we mark the supposition that some formula has to be consistent, a supposition that may be *revised* in the process of reasoning; no prior knowledge about the consistency behaviour of a context is required. Some rules like Disjunctive Syllogism [$\neg A$, $A \vee B \vdash B$] and *ex contradictione qoudlibet* [$\neg A$, $A \vdash B$], and all derived rules depending on them, have to be restricted. Restriction means here that they are only used if the on the left hand side of the application no contradiction is involved. Without adaptivity we had to reason using some PL in all contexts which we suppose to contain contradictions. Given that quite a lot of standard logic is missing [including contraposition, transitivity (of identity) etc.] that is a severe restriction. We cannot capture a lot of (harmless) consequences in that field then.

Philosophy as that area of universal talk about semantics and epistemology would have to use such a restricted logic. It is questionable how many of its theses and arguments could really (i.e. without hidden recourse to standard logic) be expressed. Adaptivity, on the other hand, makes clear that reasoning from the present contradictions is rather the exception than the rule.

[Proponents of the corresponding camps within paraconsistency (like Diderik Batens) are, however, outspoken logical particularists, i.e. they propose that one chooses a logic given a particular task or topic at hand. So one may try a little mixing of ideas.[3]]

That we are in the vicinity of some really universal logical principle may be revealed by our failure to negate this principle in asserting something. Logical principles built into our faculty of logic and language used in communication will be principle that can only be attempted to negate by uttering some statement which is the formal negation of this principle but in which case we have an immediate and obvious *performative* contradiction between the content of the statement and the presuppositions of the act of assertion going on at that time. So to say "I do believe $A \wedge B$, but I do not believe A." is self-destructive in that the "but" works logically as an "$\wedge$" and so the statement makes sense only if both conjuncts uttered are taken to be in force by the assertion, which is what the assertion overtly tries to negate.

§3 What about Pluralism in Logic?

Is universal logic thus understood incompatible with logical pluralism?

This depends on what logical pluralism is taken to assert.

- If pluralism just means that there are several logical systems, and one may use some specific system of some specific purpose this is compatible with the claim that there is the logic of universal discourse. The many logics may be used where appropriate, and their mere existence has no deeper philosophical impact than the observation that given a specific purpose at hand one may abstract from a lot of things.
- If pluralism means that there *cannot* be a logic of universal discourse this thesis is rejected by transcendental philosophy (by the arguments hinted at above). If philosophy has a universal assignments and one does not want to slip into murmurings about the ineffability of our linguistic faculties there has to be a system that represents what languages have to have in common to be translatable and to be used as medium of thought and interaction.
- If pluralism means, for example, that there are different 'negations' it is confused about meaning. Some so called 'deviant logic' should not be understood as showing that

[3] Cf. the system **UL4** in: Bremer 2005, [footnote 2], and the further references in that book.

what, for example, Negation is is up for grasp, or that there is no *real negation*. We are free to invent new symbols for new negation related functions, and if careless may even take established symbols for our now used negation related function. But by this we neither bring a new negation into the world or bring standard negation out of it. There just *are* a set of truth functional options in the vicinity of standard negation. Deciding to call some other of these "negation" using "¬" does not change Negation, it changes the meaning of some symbols. There is no 'truth by convention' in the sense that merely stipulating some axioms makes the involved symbols true of the world; giving badly enough chosen axioms these may not be true of the world, or at least not in the intended sense. So one cannot change Negation by *fiat*. What Negation really is – on the other hand – may be a tough question. Maybe some of the non-standard connectives is closer to Negation in Universal Logic. The whole discussion about negation, however, presupposes that there is some central truth function these different logics try to pin down.

- If pluralism means that there cannot be a *unique* system of universal logic (that is the one best system of doing universal logic) this seems to be a version of relativism (and fares no better than relativism fares with respect to any other scientific field).

One understanding of Carnap's slogan 'to plan languages' and his *principle of tolerance* may see Carnap as advocating complete instrumentalism and relativism with respect to linguistic frameworks.[4] Extreme conventionalism fails in fixing the set of (proper) logical truths: If a semantic idealist (claiming that truth can be generated by convention) believes that any convention can do, he is subject to the famous "tonk"-counterexample of absurd rules for introducing and eliminating logical connectives. An "or"-like introduction rule with an "and"-like elimination-rule yields "A∧¬A" even for consistent statements A. Non-logical truth – at least in part related to the idea of correspondence – is not generated by convention either. Extreme conventionalism or extreme logical pluralism as a version of semantic idealism is incompatible with even mild versions of realism. There is more to the old Frege/Russell-theory that the laws of logic correspond to the most general structures of the world. Comparing different ways to express universal logics is thus not idle. One of them has to be the best one. Even if all questions that we can put are questions internal to our conceptual scheme that does not mean that they are trivially answerable. The main problem of transcendental philosophy is that this very framework is not explicitly given. Thus we lack the representation of the framework in respect to which all structural questions are decided. The exploration of tran-

[4] Cf. Carnap, Rudolf. *Logische Syntax der Sprache*. Berlin, 1933. See also the appendix "Empirism, Semantics and Ontology" in the 1956 edition of *Meaning and Necessity* (Chicago).

scendental philosophy set out to *re*construct this frame. Comparing several of these (partial) reconstructions we may improve the picture, and by improving the picture *reject* some universal logics as less appropriate renderings of our linguistic faculties. Philosophical arguments concerning formal ontology and logic might be read then as arguments to the appropriate representation of the transcendental frame.[5]

§4 What About 'Transcendental Arguments'?

Transcendental argumentation should neither aspire to refute 'the sceptic' nor does it present a standard of argumentation that outdoes all other justifications. Transcendental arguments are often thought to be arguments of a special kind. Typically regressive transcendental arguments (working toward the presuppositions of an uncontroversial given) are distinguishes from synthetically progressing arguments (achieving an expansion of an uncontroversial given by some dialectic). Leaving refuting scepticism and the idealistic jump from conditions of thought to 'objective' conditions to the side one can see the starting point of (regressive) transcendental argumentation as working from given facts of communication (like "I address an audience in a situation by claiming as true 'Sheep are mammals'.") to the conditions and rules that are to be presupposed in these communicative encounters. These conditions and rules, which we may call 'structures' of linguistic communication, have to be in force for that communication having a chance to be successful (which in the example given may contain informing the audience of the fact that sheep are mammals and/or secondary that the speaker at least believes that sheep are mammals and/or tertiary that the speaker at least believes that "is a mammal" is a predicate in a language shared with the audience and/or …).

Inasmuch as transcendental logic tries to re-construct the structure of our transcendental conceptual scheme it is not concerned with a mere description of conditions, set-ups or grammar (as some parts of linguistics are). Transcendental logic tries to establish that some structure cannot be taken away at all, for any (natural) language whatsoever. Transcendental argumentation in this way tries to show that some structures, doing their work in the observed cases, are also necessary structures, being required by all cases to be observed in the future or

[5] J.C. Beall, Greg Restall, Gert-Jan Lokhorst and Achille Varzi have defended their version(s) of logical pluralism: cf. Restall, Greg. "Carnap's Tolerance, Language Change and Logical Pluralism", *The Journal of Philosophy*, 99 (2002), pp.426-43; Varzi, Achille. "On Logical Relativity", *Philosophical Issues*, 10 (2002), pp.197-219; J.C. Beall and Greg Restall. "Logical Pluralism", *Australasian Journal of Philosophy*, 78 (2000), pp.475-93; Lokhorst, Gert-Jan. "The Logic of Logical Relativism", *Logique et Analyse*, 41 (1998), pp.57-65. The most developed statement is Beall's and Restall's recent book *Logical Pluralism* (Oxford 2006). I apply the general criticism mentioned in this paragraph to these approaches, and especially to Beall's and Restall's book, in the paper "What Is Logical Pluralism?" (forthcoming).

imagined in some other possible world. The crucial step, therefore, is to show that something is not only (materially) implied but is (conceptually) entailed by the given linguistic facts.

One way to argue is:

(TA1)

(i)	A	or	□A
(ii)	□(A ⊃ B)		□(A ⊃ B)
thus			
	B		□B

the crucial premise being (ii).

The right hand side argument would, of course, establishes a stronger conclusion, but has to have established some analytic/conceptual truth beforehand. The left hand side argument would work, of course, also if one just had "A ⊃ B", but establishing such an 'only' empirical fact may not be the task of philosophy. Arguments of these types may also take sentences of another mood (like imperatives) as major premise and then arrive at a such modified conclusion. [An argumentation of this type – traditionally understood as Kant's method – may also be found in Gilbert Ryle's analysis of ordinary language.]

One way, then, to establish (ii) is to argue that given our usage of A and B and our reflected intuitions about A and B the best analytic hypothesis is to claim that A entails B. Such entailments may be more than obvious in our 'lexicon' (say in the case of "reading", requiring an object that is read). Such entailments may be less obvious, at least before we reflect on them (say in case of "Peter asserts that …" entailing that Peter performed not just some haphazard linguistic act, but being ready to take at least some responsibility for providing evidence that what he claimed really is the case). So the first way to arrive at some thesis about language structure is to argue straight forwardly for some analytic hypothesis concerning linguistic elements considered important, where linguistic elements considered important are elements prima facie related to language structure (like performatives: "assert"…).

A second way to argue is:

(TA2)

(i)	A	or	□A
(ii)	A ⊃ B		
(iii)	There is no condition C ≠ B available which takes over the role of B.		
thus			
	□(A ⊃ B)		

thus

B or □B

The crucial step being (iii) and the step to (iv).

This second way is more often tried when reflecting on more general features of communication and representation (like "what makes x an object?", "how can speaker and audience agree that x is an object?" …) or the technical vocabulary of linguistic analysis itself (like "what is meaning?"). [An argumentation of this type may be found in Peter Strawson's *Indivuals* or Alexander Rosenberg's *One World and Our Knowledge of it*.]

If "available" means 'it is not possible that there is a C such that …' then (iv) follows from (iii). But how could we ever establish (iii)? If we leave it open whether there are no further options besides those we have explored the second type of argument has an element of inductive argumentation to it. The fundamental ingredient is to argue by exhaustion. We consider a couple of (supposed) alternatives, but none of them fulfils the job of B or not to a degree sufficiently close to the workings of B. We suppose that we have looked at an appropriate arsenal of candidate options, and we ascertain that there is no unanswered reasonable doubt that we have overlooked some important candidate option. From this then we conclude (by exhaustion) that B is the only thing that can take the role under consideration. So B is not just a condition we hit upon, but a necessary condition.

Ways to proceed may be generating or collecting (from folklore) a couple of analytic hypothesis or formalisms (say axiomatisations involving the crucial concepts) first and confronting them with the functional requirements to be met. One may also try to come up with an alternative by first isolating the exact function of B and then working towards another way to fulfil it. Thought experiments have their (limited) role to play here as well.

The informal structure of transcendental argumentation thus comprises:

(a) taking stock of our intuitions
(b) evaluating (in the philosophical literature) inherited preconceptions,
(c) following or proposing conceptual connections (fixed in analytic hypothesis),
(d) building (formal) models,
(e) considering alternative options, making use of thought experiments,
(f) making use of informal argumentation (like diagnosing performative contradictions if ever someone argues against the felicity conditions of illocutionary acts),

being elaborated further by

(g) formalization and (algorithmic) implementation wherever feasible

and being finally strengthened by

(h) a supplementary naturalism taking given human nature into account.

Once one has established some structure as necessary its elucidation will yield further results. Thus the theses that language is our principled access to a socially shared (objective) reality and that our language can be given some formal representation immediately transform corresponding meta-logical results into epistemological theses about the form and the limits of our cognition. The four cornerstones of the edifice of a redefined transcendental logic might thus be: representationalism (in the computational theory of mind, including transformational linguistics), the *Church-Turing-Thesis* (that Turing-computability is equivalent to our intuitive concept of computability), *Montague's Thesis* (that there is no fundamental distinction between natural and formal languages) and semantic closure (requiring some paraconsistent universal logic).[6]

[6] The role of *conceptual analysis* and *supplementary naturalism* are set out in my *Conceptual Atomism and Justificationist Semantics* (New York et al. 2008), pp.100-105. The book also contains a defence of the *Church-Turing-Thesis* and an account of concepts in a representational theory of mind.