The Ideal Language Tradition

The Revised Programme – The Proposal Theory of Philosophy

The Linguistic Turn

- Before we will come to have a closer look at the difficulties that ideal language philosophy was confronted with in the second half of the last century, we first will try to get an overview of the development we have sketched so far.

The Search for a Neutral Standpoint

- In his 'Introduction' to *The Linguistic Turn*, Rorty gives a pretty useful characterization of the early stages of the ideal language tradition, especially with respect to the question of whether the statements of linguistic philosophers about the nature of philosophy and about philosophical methods are actually presuppositionless (dependent on no substantive philosophical theses for their truth).

Early Analytic Philosophy

- When we look at early analytic philosophy, we can find the statements of such presuppositionlessness for example in Ayer's writings:

Ayer

- Whatever force these objections may have against the Kantian doctrine, the have none whatsoever against the thesis that I am about to set forth. It cannot here be said that the author is himself overstepping the barrier he maintains to be impassable. For the fruitlessness of attempting to transcend the limits of possible sense-experience will be deduced, not from a psychological hypothesis concerning the actual constitution of the human mind, but from the rule which determines the literal significance of language.

Ayer

- Our charge against the metaphysician is not that he attempts to employ the understanding in a field where it cannot profitably venture, but that he produces sentences which fail to conform to conditions under which alone a sentence can be literally significant.

Meaning Criterion

- Of course, as we have seen, in the beginning this question was supposed to be answered by the empiricist criterion of meaning. A definition of "cognitive significance" in terms of verifiability that was thought to rule out metaphysical approaches as literally meaningless.

Meaning Criterion

- According to early analytic philosophers, the mistakes of traditional philosophy were mistakes with respect to the proper logical structure of the language. Heidegger, for example, was accused of not having noticed that the logical syntax of "There is rain outside" and "There is nothing outside" are crucially different. The one being "Outside(rain)", the other being "~∃x(Outside(x))".

Meaning Criterion

- What was not sufficiently recognized in the beginning, was that the meaning criterion itself, or the different formal attempts to arrive at a clarified ideal language were not themselves presuppositionless. In fact, these ideal languages were only convincing as ideal representations to those who anyway agreed to the ways these languages would decide on the meaningfulness of certain sentences.

Proposals

- In the course of their development, analytic philosophers changed the programme. Ideal languages were interpreted as different proposals to adopt a new language which would make it possible to say the things we want to say, without getting involved into the same philosophical problems again.

Bergmann's three conditions

- Any improved language is called ideal if and only if it is thought to fulfill three conditions: (1) Every nonphilosophical descriptive proposition can in principle be transcribed into it; (2) No unreconstructed philosophical one can; (3) All philosophical propositions can be reconstructed as statements about its syntax [...] and interpretations [...].

Disappearance of Philosophy

- If such an ideal language were possible, it could be shown that we don't have to speak the language we do, and do not have to confront the philosophical problems we do. They simply would not be raised by the way the world is, but rather by the way the language is.
- Philosophical theses of the past would then be reinterpreted as proposals what language to adopt.

Excursus – Goodman's Dissolution of the Problem of Induction

- One – to my mind – nice example to see how a philosophical problem is revealed as a mere problem of language is Goodman's discussion of the problem of induction. It would seem here that there is a straightforward problem raised by our epistemic practices, but then it turns out to be a problem of definitions that need be accepted in an ideal language.

Hume

- In his *Treatise of Human Nature* and his *Enquiry Concerning Human Understanding* David Hume attacked all rational bases for belief in any necessary connection that was not a truth of mathematics or logic. The justification for any belief in the necessary connection of causes and effects and therewith the belief in regularities inferred from past observations were also subject of Hume's devastating attack.

Hume

- Hume started his investigation into the foundations of scientific knowledge by distinguishing two types of reasoning: reasoning concerning *relations of ideas* and reasoning concerning *matters of fact and existence*. All reasoning falls under one, and only one, of these.

Hume

- The first type seemed largely unproblematic. Mathematics and logic are the sciences in which the relations of ideas are investigated. Both sciences use deductive arguments to arrive at their conclusions, forms of arguments which are necessarily truth preserving. If the premises of a valid deductive argument are true, so is the conclusion.

Hume

- But not all scientific reasoning is of this kind. If we, for example, infer that the sun will rise tomorrow, from the observations that it did so every morning in the past, we make an inference from the observed (the rising of the sun in the past) to the unobserved (the rising of the sun tomorrow). This reasoning concerns matters of fact and existence. In such cases the conclusion (that the sun will rise tomorrow) goes beyond the content of the premise (the report of what has been observed in the past).

Hume

- General statements that express real regularities are of immense importance for us, and it is their generality that enables them to play this role. These statements do not only talk about events that have happened at some specific day at some specific place, but they talk about what happens at all times at all places.

Hume

- The laws of physics for example state such generalities which not only apply to the observed events that happened in the lab and led to the formulation and confirmation of these laws, but also to events far away from our galaxy in future times. This way we are able to use knowledge that we gained from past observations.

Hume

- Now, Hume asked what the foundation of our inferences from the observed to the unobserved is and came to the conclusion that such reasoning is based upon relations of cause and effect. We believe that certain states of affairs will regularly be followed by certain other states of affairs because we think that there is a causal connection between them. Lightning is followed by the sound of thunder, because the former causes the latter. Footprints in the sand indicate that some person recently walked here, because the former is a causal effect of the latter, etc.

Hume

- But if our apparent knowledge of regularities and our inferences from the observed to the unobserved are based on knowledge of cause-effect relations, how is *this* knowledge established? The first possibility that Hume considered was that our apparent knowledge of a cause and effect relation is *a priori*. Can we deduce from a cause what its effect is?

Hume

- A person having no prior experience with fire or snow can obviously not *deduce* that the former will feel hot and the latter cold. The same holds for the other direction from effect to cause: by just knowing (de re) of some "effect" by knowing that a certain phenomenon occurred, pretty much anything might have caused it, as far as I can tell a priori. Causal relations are not deduced, knowledge of them must be based upon experience.

Hume

- But if we know about causal relations from experience, causality must be something observable, such that we can observe a "cause", an "effect", and somehow the causal connection between them. But Hume argued that we cannot locate this third item anywhere.

Hume

- Every time we observe what we later extrapolate into general statements, we only observe temporal priority of what we then call the "cause", spatiotemporal proximity of "cause" and "effect" and constant conjunction, i.e. that if we repeat an experiment many times we will find the same "effects" following the same "causes". But what we do not observe is some sort of causal relation or causal power that bases our extrapolation.

Hume

- It is perfectly conceivable that next time the "effect" will not follow the "cause"; nothing in the observation that the "effect" followed the "cause" up to now could guarantee that the "effect" will do so in the future. For example, having observed two events in spatiotemporal proximity only once, we cannot tell whether there is a causal connection between the two.

Hume

- Although we feel inclined to assume that there is a causal connection if we observe many times that events of the one kind are followed by events of the other kind, it might nonetheless only be coincidence that the one event closely followed the other. Moreover, if the causal connection between the two was itself observable, we would not need repeated observations, instead we would be able to observe the causal connection already in the first instance.

Hume

- But if we cannot deduce "effects" from "causes" nor "causes" from "effects" *and* cannot observe causal connections, what else could be the basis for our judgements about causal relations? Hume's answer was that it is all just a matter of custom or habit.

Hume

- We observe some event *e*1 and see it followed by some other event *e*2. On another occasion we see some event *e*3 followed by some event *e*4. *e*1 and *e*3 are events that we group into a certain category, say "events of type *C*". Events *e*2 and *e*4 are classified as events of type *E*. Relative to our classification, events of type *E* often follow events of type *C*, which is why after a while when we notice an event of type *C* we begin to expect an event of type *E* following it. That this is so is just a brute fact of human psychology, but completely without any logical necessity involved.

Hume

- Hume's challenge or "The Humean Riddle of Induction" was to uncover the following problem: We wanted to know what justification we have to infer unobserved events from observed ones, or on which basis we are justified to extrapolate generalities. Hume's observation was that we base our justification on assumed relations of cause and effect. But what is our justification for assuming *these*?

Hume

- The answer is that we just psychologically anticipate that the future will be like the past, that nature is *uniform*. But that anticipation cannot be founded in anything else. If you want to base the conviction in the uniformity of nature on past experiences ('nature always behaved in a uniform way, therefore it will continue to be uniform in the future') you merely presuppose what you attempted to establish, namely that nature is so uniform that it will continue to be uniform.

Hume

- If we need a justification why we should trust observed past uniformities at all, the fact that we have observed in the past the uniformity that trusting such observations was successful, cannot suffice. It would be obviously circular (or would lead to infinite regress) to argue in that way. So there is no empirical justification forthcoming for the uniformity thesis.

Hume

- On the other hand, there is also no a priori justification to be expected; it is absolutely conceivable that nature is not uniform. Clearly, we do not *expect* it to be non-uniform, but we can also imagine non-uniformity without noticing any contradiction.

Hume

- What seemed to be the most central method of science, induction from observation, turns out to be unjustifiable. There is no reason why we should have any confidence in scientific predictions: for all we know, any scientific prediction might fail, and indeed, we cannot even say that scientific predictions are probable. There is – after Hume – no rational basis for placing more confidence in the predictions of science than in wild guesses.

Goodman

- Goodman approaches his own answer to Hume's problem of induction by first investigating what *kind* of justification actually is called for when we ask for a justification of our inductive inferences.

Goodman

- The problem cannot be to explain how we know that certain predictions will turn out to be true. That is something that we simply do not know in advance.

Goodman

- Similarly the problem cannot be to tell true predictions from false ones in advance. If this were possible, we would have found a method for clairvoyance.

Goodman

- Nor can the problem be to tell which prediction is more probable, for even this will either be something we cannot know in advance, namely if 'being more probable' expresses a relation between the prediction and certain future events, or something that seems totally irrelevant for matters of justification, namely if 'being more probable' has nothing to do with future events.

Changing the Question

- Following his strategy of trying to change the question to another perspective if a problem seems hopeless, Goodman then leaving induction aside for the moment, first asks, what justifies *deduction*?

Deduction

- Well, instances of deductive inferences as in

(1) All ravens are black.

(2) Paul is a raven.

(3) Paul is black.

are justified by showing that they are inferences *in accordance with accepted rules of inference*.

Deduction

- If an inference is in accordance with accepted rules of inference, the inference is valid. That does not imply that its conclusion is true. (3) might well be false and Paul be white. The mere validity of the inference does not guarantee the truth of the conclusion.

Deduction

- To check whether a deductive inference is justified does not involve checking the truth of any fact that is involved in the inference. All we check is whether the inference was in accordance with the accepted rules. How is that done?

Deduction

- To show that the inference of (3) from (1) and (2) is in accordance with the rules, we would first reconstruct the argument into a deductive logical calculus and then check whether the inference above can be represented in it. Indeed it can be represented in predicate logic:

Deduction

(1) $\forall x$ (Raven(x) $\supset$ Black(x))	assumption
(2) Raven(paul)	assumption
(3) Raven(paul) $\supset$ Black(paul)	from (1), Universal Instantiation
(4) Black(paul)	from (2) and (3), Modus Ponens

Deduction

- This inference is in accordance with the inference rules of predicate logic. Why is predicate logic here of importance, and not just *some* set of inference rules? It must, of course, be a system with *valid* rules, and the rules of predicate logic are valid. Why are they valid?

Deduction

- Goodman's answer to that question struck many as odd. According to Goodman the rules of predicate logic or any other alternative deductive system are valid because they are more or less in accordance with what we accept as a valid deductive inference. On the one hand, we have certain intuitions about which deductive inferences are valid and on the other hand we have rules of inference.

Deduction

- When we are confronted with an intuitively valid inference, we check whether it accords to the rules we have already accepted. If it does not we might reject the inference or the argument based on it as invalid. If, however, our intuition that the purported inference is valid is stronger than our confidence that the rules are correct, we might also consider amending the rules.

Deduction

- This soon leads to a complicated process. We have to take into account that the rules must remain coherent and not too complicated to apply. In logic, for example, we want the rules to be topic neutral, i.e. applicable to inferences (as far as possible) independent of the specific subject matter, etc.

Deduction

- On the other hand, we also want to extract as much information from premises as possible, so we do not want to risk being too cautious in accepting rules. In this process we make adjustments on both sides, slowly bringing our judgements concerning validity in a reflective equilibrium with the rules for valid inferences until we finally get a stable system of accepted rules:

Reflective Equilibrium

– This looks flagrantly circular. I have said that deductive inferences are justified by their conformity to valid general rules, and that general rules are justified by their conformity to valid inferences. But this circle is a virtuous one. The point is that rules and particular inferences alike are justified by being brought into agreement with each other. *A rule is amended if it yields an inference we are unwilling to accept; an inference is rejected if it violates a rule we are unwilling to amend.* The process of justification is the delicate one of making mutual adjustments between rules and accepted inferences; and in the agreement achieved lies the only justification for either.

Intuition?

- People who found that odd were quick to point out that the deductive inference rules are not just "intuitively" valid or in accordance with our intuitive judgements of validity. Firstly, normal folks "intuitively" judge inferences to be valid which are not valid at all; this seems to be completely at odds with Goodman's proposal.

Intuition?

- Does this not show, as, for example Stephen Stich and Richard Nisbett claim, that the actual "intuitive" judgements of normal folks have nothing to do with validity? They contend that the validity of inferences is an objective affair that we investigate in logic and of which we might have a false or insufficient reconstruction (e.g. in Aristotelian Syllogistic if compared to modern predicate logic).

Intuition?

- This might then be in need of revision, despite it not being a reconstruction of what we – as reasoners – *believe* about validity (we will call such a position 'logical realism'). Stich, for example, argues:

Intuition?

– In each of these cases […] it is very likely that, for some people at least, the principles that capture their inferential practices would [be in reflective equilibrium for them]. If this is right, it indicates there is something very wrong with the Goodmanian analysis of justification. For on that analysis, to be justified is to [be in reflective equilibrium]. But few of us are prepared to say that if the gambler's fallacy [which is the fallacy to infer that, e.g., in a game of craps the likelihood of rolling a seven with a pair of dice increases each time a non-seven is rolled] is in reflective equilibrium for a person, then his inferences that accord with that principle are justified.

Intuition?

- This objection does not appear to cut any ice, however. It seems to miss the point, since a reflective equilibrium of intuitive judgements and rules is not something which is achieved quickly by one person alone concerning one rule and one pattern of inference. We have to take into account a whole range of inferences intuitively judged to be deductively valid and a whole system of inference rules to represent that.

Intuition?

- This might well be a complicated affair. As can be seen in the logical inference above, we needed two rules to represent the inference that originally consisted of only three lines (not four). Thus, the "normal folk"-inference, as in the unregimented argument, is represented in formal logic, but not necessarily with anything that *resembles* the original argument.

Intuition?

- To come up with a somewhat satisfying system of deductive validity took 2,500 years, counted from the first attempts to do so. This indicates that it is not that easy to find a consistent set of rules that is in accordance with previously accepted valid rules, intuitive judgements, etc. That normal folks make many mistakes (by our elaborated standards of validity) and do not come up with a system themselves that equals our standards then does not come as a surprise.

Objectivity?

- A second argument against Goodman's position, championed by John Earman and Wesley C. Salmon, starts from the observation that there does not appear to be any reference to intuition when we establish that a certain system comprises only valid inference rules.

Objectivity?

- In the case of predicate logic, for example, the deductive validity of the inference rules, the so-called *soundness* of the proof-theory, is not checked by taking polls in the supermarket. It is checked by a soundness proof that assures us that every rule that is allowed in predicate logic can never take us from a true premise to a false conclusion.

Objectivity?

- Earman and Salmon suggest abstracting away from the system of rules and sentences we have, the so-called "deductive system", and look at the inference rules from a metalevel. What a sentence means is – if we follow the argument by Earman and Salmon – considered to be independent of what syntactic proof rules apply to that sentence.

Objectivity?

- If it is possible to show that any sentence that is inferred by syntactic rules of the deductive system will always be logically true if inferred from no premises, or true if inferred from true premises, the deductive system is apparently justified: it always leads from truth to truth.

Objectivity?

- Such proofs are called "soundness proofs". These proofs are *metatheoretical* proofs, since they do not proof the validity of the deductive system *within* the deductive system, but on a metalevel at which we can abstract from the system of rules and the semantics. If that is still circular (e.g. because the metatheory is *deductive*), this circularity is at least not as blatant.

Objectivity?

- We are not proving the validity of the system of rules within the very same system, but show that the rules – if applied correctly – always lead from truth to truth. Earman and Salmon write:

Objectivity?

- Goodman's claim about deductive logic is difficult to defend. We reject, as fallacious, the form of affirming the consequent because it is easy to provide a *general* proof that it is not necessarily truth-preserving. The rejection is *not* the result of a delicate adjustment between particular arguments and general rules; it is based upon a demonstration that the form lacks one of the main features demanded of deductive rules. Other argument forms, such as modus ponens and modus tollens, are accepted because we can demonstrate *generally* that they are necessarily truth preserving.

Objectivity?

- It is true that we typically check the adequacy of a deductive system by giving a "general" soundness proof. Soundness proofs establish that there is a certain relation between two formal systems. On the one hand there is the deductive system which tells you from what kind of lines in a proof you are allowed to proceed to what other kinds of lines in a proof.

Objectivity?

- On the other hand there is the model-theoretic semantics which interprets the formal symbols in the language and all complex expressions build from them. If the deductive system allows you to go from a line P to a line C, the semantics must be such that it does not assign truth (or whatever corresponds to that notion) to the line P and falsity (or whatever corresponds to that notion) to the line C. Soundness proofs establish nothing else, their results are *relative* to a deductive system *and* to a semantics.

Objectivity?

- Clearly, this does not tell us anything about any sort of *objective* or *general* validity of rules of inference. The next question would be why we think that the model theory that accords with the deductive system is *adequate*. The question of whether the model theory is adequate, however, is in part a question of what we "intuitively" think what the right semantics for certain logical constants are (like, e. g., for the conditional), which, in turn, is a question of what role they play in intuitively acceptable inferences.

Objectivity?

- Soundness proofs do thus not help us out of the aforementioned regress if we do not possess any independent reason to think that the model theory is adequate, but no such reason is presented by Earman and Salmon, nor does one appear to be forthcoming elsewhere.

Objectivity?

- Goodman saw that problem quite clearly and offered the best solution he could: a reflective equilibrium of validity judgements and accepted rules. It is important to realise that there always might be more than one reflective equilibrium to which that process leads to, which is why we nowadays have more than only one accepted system of deductive inference rules (needless to say, that all of them have their "soundness" proofs).

Logical Pluralism

- This is why there can be no such thing as "the true logic" according to Goodman's conception. A system of deductive rules might be pragmatically better than an alternative system, but there simply is no set of *objectively* valid rules. If what we argued above is true, viz. that any justification of deductive rules must at some point or other be founded on a reflective equilibrium between our intuitions and accepted rules, every logician who subscribes to some sort of logical realism (the view that there is only one true logic) is obviously in trouble.

Logical Pluralism

- Logical realists, unlike Goodman, have the burden of proof why the specific reflective equilibrium arrived at is justified, if (a) for every initial set of intuitions and antecedently accepted rules more than one equilibrium is possible, and if (b) the specific initial set of intuitions started with is different for subjects with other cultural or socioeconomic backgrounds (as Stich and Nisbett would presumably continue to argue).

Ideal Language

- The remaining task of solving the induction problem is then to explicate the pre-theoretic notion of valid inductive inference by *defining* rules of inference that can be brought into a reflective equilibrium with intuitive judgements of inductive validity. This can be done in a variety of ways; integrating intuitive judgements as well as general considerations might lead to several alternative solutions. This project is undertaken by the various attempts to explicate the notion of confirmation and to construct systems of inductive logic.