title: Notes on Potter's 'Reason's Nearest Kin' author: Jad Nohra

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Introduction

- (p4) The following is again misguided. 'Independent of experience' actually means that the humanly created translation is a translation (model) of something which, extrapolating the homgenity of our universe by recourse to our experience, is ubiquitous. It also alludes to the idea that any other being or object that comes in contact with that thing, if it creates its own model, must necessarily comet to a model compatible with ours, at least in part, because they both are translations of the same thing. Not more and not less. "Many authors treat the distinction between the necessary and the con- tingent as logical; and that between the a priori and the a posteriori as epistemological. In doing so they appeal to a tradition going back to Aristotle: in addition to the perspectival (epistemological) element in the notion of truth that consists in my grounds for holding a proposition to be true, this tradition allows room for a non-perspectival (logical) element that consists in the ultimate ground of its truth. But it is not intended that a proposition should count as a posteriori merely because I come to know it empirically: that would make the result of an arith- metical sum a posteriori for me if I worked it out on a calculator or was told it by a friend. So we might be tempted to say that a proposition is a priori if it can be known independent of experience."
- (p5) Ditto; logic is yet another model and not more. "He could do so without inconsistency only if at that time he explicitly subscribed to a distinction between logical and epistemological grounds for truth, and placed the notion of the a priori on the logical, not the epistemological, side of this divide."
- (p5) This is the kind of thinking that causes confusion that is hard to get rid of. The classification of the terms presented need not appeal to 'experience'. Instead it should simply be mentioned that in our meta-model, we do make a certain classification, depending on the level at which we are and the properties that we assign to the word "truth". Better yet, the word "truth" should be replaced and the terms 'apriorio truth' and 'apost truth' should be given names such as 'thingA' and 'thingB'. "Reflecting this tradition, then, let us say for the sake of definiteness that a proposition is a posteriori if its truth or falsity depends on ex- perience, a priori otherwise."
- (p5) This is again confused and confusing. the matter is much simpler than that as we described in our first remark. What is 'knowledge' in Kant's quote, it is yet another very sad choice of point of view. "When we call a proposition a priori that is not to say that we could know it without having had any experience, though: without experience it is hard to conceive that thought would be possible at all. Kant stressed this point at the very beginning of the Critique : There can be no doubt that all our knowledge begins with experience. For how should our faculty of knowledge be awakened into action did not objects affecting our senses . . . arouse the activity of our understanding to . . . work up the raw material of the sensible impressions into that knowledge of objects which is entitled experience? . . . But though all our knowledge begins with experience, it does not follow that it all arises out of experience."

- (p5) By now, we must put Kant on our black list, by our reduction of acceptance to results and common sense, not to authority. We did this for Mathematicians, we must also do it for Philosophers. In a certain sense, our theory of translation is an 'anti-philosophy', bring anything that is in the clouds down to crawl on earth, close to stones, dirt and grass, and immensely enjoying it. As we noticed in Mathematicians, Philsophy is also very much based on imitation. "Kant took it to be part of what is meant by pure mathematics that it is a priori. He thought that the truths of mathematics cannot be a posteriori because they carry with them necessity, which cannot be derived from expe- rience. This is true at any rate if we limit the claim to pure mathematics, the very concept of which implies that it does not contain empirical, but only a priori knowledge."
- Note: The term does exist and leads directly to wittg. http://en.m.wikipedia.org/wiki/Antiphilosophy . Maybe Ryle's book is very close to our translation theory? http://en.m.wikipedia.org/wiki/Quietism_(philosophy) . As for 'quietism' is probably in essense nothing but the polite (and hence less offensive and more workable for its proponents) name under which antiphilosophers go.
- (p6) Again misguided. The experiment is the same one the can be used to validate that a translation is correct. The translation is used in an experiment in both languages in some sentence and the effect of the sentence on the readers of both language is. The same can be done for between what we think induction models between two or three languages: how it appears on paper, how it is understood in the human brain, what it is meant to model in the real world. "Indeed, it is quite hard to see how one might construct an experiment that could provide evidence either for or against the principle of mathematical induction, for example."
- (p6) This is only confusion. It is better to simply state the practical reason for the two truths, let us call them p-truth and q-truth. The reason being able to put each at a different meta-level and find relations between them. "We shall instead simply take it as evident that pure mathematics — pure arithmetic in particular — is a priori."
- We skeep and skimp, until we arrive at a useful 'history of axiomatic arithmetic, and all its meaningful import on language and logic, which is what concerns in for our 'translation theory'.

  1. (p56) Axiomatic geometry, axiomatic arithmetic. It seems that for arithmetic it was harder to find everything that is needed to create a self-standing, self-sufficient translation of what we need, what we mean. More, it was harder to even notice that something had to be done. This came from philosophers. Kant->Frege->Schultz->Grassman "Increasing rigour spawned increasing axiomatization. In geometry this was nothing new, of course: Euclid's Elements are the locus classicus for the axiomatic presentation of a mathematical theory."
  2. (p59) "if we succeeded in finding a method of de- ducing individual equations logically from a finite number of assump- tions. This task was begun by Johann Schultz in his Prüfung, a com- mentary on the Critique published in 1789. Schultz states as a postulate the possibility of adding any two numbers together, and then gives two axioms, namely the associative and commutative laws for addition, ... Schultz's work was an important first step towards the axiomatization of arithmetic, but it is nevertheless incomplete: although his axioms were general, he did not deal with how to derive from them conclusions which are themselves general, and he did not discuss multiplication at all."
  3. Grassmann and the genuine difficulty to find the need to put induction into the

language. Again misguided with this "So it is striking that Grassmann did not explicitly enunciate". There is nothing striking about this. "A much more detailed account was supplied by Hermann Grassmann in his Lehrbuch der Arithmetik of 1861, a textbook intended for use in Prussian secondary schools", "He then gave detailed derivations from the recursion equations of the properties of addition and multiplication (including the associa- tive and commutative laws for additions that Schultz had taken as ax- ioms). Grassmann's axioms were still incomplete, however: he did not — even implicitly — assume anything which would allow us to prove any inequalities, as we can see by observing that his axioms are triv- ially satisfied in a one-element set. They were incomplete in another respect too: Grassmann did not identify the principle of mathematical induction as an assumption. However, the central roˆle of this principle is apparent if one studies Grassmann's proofs: he repeatedly proves general arithmetical laws by its means. This technique did not origi- nate with him: the first examples of proofs by mathematical induction date from the seventeenth century, and by the middle of the nineteenth the method was a commonplace. So it is striking that Grassmann did not explicitly enunciate the central principle on which his treatment depended."

4. (p62) Here, 'logic' enters the play. For us this is yet another model, maybe the most general and meta level we have due to its large domain of applicability. We hope though that the treatment of logic here will gives us a good web to attach further studies onto. "It may have been Frege who finally killed off the 'legend of the sterility of logic', but in truth it had been dying for some time: the mathemat- ical achievements of the nineteenth century, with which we began this chapter, showed vividly that more can be achieved with logic alone than Kant ever imagined. What is undoubtedly due to Frege, though, is the credit for being the first to analyse the reason: it was the power of quantified logic with multiple generality to reveal hidden complexi- ties in our concepts that enabled mathematicians such as Weierstrass to prove logically so much that had previously been justified by direct appeal to intuitions."
5. (p63) The author attributes to Frege the decisive step (since Aristotle) to formalize quantified logic. Here, in *Begriffsschrift*, we find a formal equivalent of "(x)(Ey)f(x,y)".
6. (p64) We find the distinction between ampliative and explicative dangerous. It forgets to mention how human-centric this is. For our pruposes, there is no difference, granted that this is retrospective, the surprise of the 'feeling of new knowledge' is surely immense. By Wittg, this is not knowledge, merely a solution to a problem, which happens to pass by a Mathematical formalism, which is a necessity only given the way the human brain works. Just like access to pencil and paper extends the mind, so does access to a formal translation of a model (including the choice of logic), making it amenable to human exploration.

"What is important is rather the extent to which formalization made plain the sorts of logical reasoning that cannot be reduced to Aristotelian syllogisms. It became apparent to Frege that polyadic logic is ampliative in Kant's sense. We are not merely, as in the Aristotelian case, taking out of the box again what we have just put into it. The conclusions we draw . . . extend our knowledge. . . . The truth is that they are contained in the definitions, but as plants are contained in their seeds, not as beams are contained in a house.15".

The golden Quote from Wittg is (p181) "In life it is never a mathematical proposition which we need, but we use mathematical propositions only in order to infer from propositions which do not belong to mathematics to others which equally do not belong to mathematics.40 Wittgenstein’s concern was solely with explaining the application of mathematics, since he took this to be the only thing about mathematics which could be explained."

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