The naturalistic epistemology of individual knowledge should follow the procedure usual in the epistemology of science: generalize from successful cognitive practices!

In the case of naturalistic epistemology the data base — the cognitive practices it is supposed to generalize, are practices based on cognitive skills, like perceptual cognition, language acquisition and use and inference. This would then make cognitive psychology a guide for epistemology.

Cognitive skills

Traditional epistemology has been principally concerned with inferential processes which lead the thinker from beliefs to beliefs. The thinker was pictured as a responsible deliberator, capable of choosing his own methods and rules of inference, fully aware of available methods and consequences of using them. Several assumptions were embodied in this picture, e.g. what Pollock calls »doxastic assumption« — »that the justifiability of beliefs is a function exclusively of what beliefs one holds« (Pollock, 1986, p.19), and then an important assumption concerning primacy of inference:

»According to the Cartesian theory, the right technique for acquiring beliefs is inference. The concerned believer ought to assent only to those beliefs that have been generated by valid steps from secure premises. An actual belief is justified just in case it issues from such an inference« (Papineau, 1987, p.131).

Nowadays, the epistemological horizons have broadened somewhat. First, the non-inferential ways of acquiring beliefs have become prominent in discussion. Second, we are witnessing a blossoming of »non-doxastic« theories which explicitly proclaim those non-inferential ways subject to epistemic evaluation. Third, there has been a trend to move away from what the thinker deliberately does to what kind of cognitive system he is. To quote Papineau again:
According to this (i.e. naturalised) theory, the right technique for acquiring belief is simply to be a reliable belief former, that is, to have belief forming processes that generally produce true beliefs. Concerned believers should try to ensure that all their beliefs come from belief-forming processes that are reliable in this sense (idem).

One way to make this shift from doing to being more explicit is to introduce the idea that the right way for acquiring belief is through displaying and developing the cognitive skills one has. I would suggest to view «belief forming processes» as performances or manifestations of underlying competence, which we may label «cognitive skill».

One obvious consequence of the change of interest just described would be a change in typical examples one aduces to illustrate what is meant by knowing, or justifiedly believing. The traditional examples are of the kind «John knows that the weather is fine», and it is usually supposed that John knows this because he has deduced it either from his perceptual impression of what could have been seen through the window, or from sources like newspapers.

However, if one wants to broaden the class of relevant examples in the direction of appeal to various cognitive skills, one is going to be attracted to examples manifesting those skills. Pollock, for example, compares epistemic norms to rules tacitly guiding a cyclist or a golfer (Pollock, 1986, p. 129). Let me add a few more:

(L): John knows that «This is a table» is an English sentence.
(P): John sees (veridically) that there is a table in front of him.
Therefore
(P') John (perceptually) knows that there is a table in front of him.

I would like to insist that L is a good example of knowing. The knowledge of language has rarely attracted the attention of professional epistemologists, which is peculiar, given that it is a perfect specimen of a complex, highly intricate and relatively closed domain, to the investigation of which no effort has been spared. It poses obvious difficulties for standard kinds of epistemology. Just try to figure out how is John justified in his belief about the English sentence.

Perceptual knowledge is similar to linguistic knowledge. We have it, but it is not immediately obvious how we have arrived at it.

Of course, it is probable that there are ways to extend standard theories to cover these cases. Instead of exploring this more cautious strategy, I propose to take examples involving complex cognitive skills as basic, and to look at consequences. I am aware
that a full justification of what I am going to propose would de­mand to go deeply into the discussion of the proper methodolo­gy for normative pursuits like epistemology. But, in order to dis­cuss methodology one has to have ideas about possible alternati­ves. So, I shall briefly sketh one such idea.

Generalising from succesful practice

Once we change the prefered set of examples, some deeper changes might set in. Consider examples like L. John’s knowled­ge about the grammaticality of given sentences seems relatively unproblematic. But, when one asks the question »How does it co­me about that John knows that given sentences are grammatical?« one confronts a major proble. There is no way to answer the qu­estion by relying on intuitions or on the definition of knowledge.

In other words, in our prefered examples, the processes of knowledge acquisition are respectable objects of respectable and complex empirical, experimental study.

Furthermore, once you get the story about language acquisi­tion even in its most rough outlines, it is extremenly difficult to tell, just by inspecting the structure of the process, whether the learner is »justified« in his belief's. Things seem to go the other way around: we are convinced that John knows his mother ton­gue. T h e r e f o r e , we conclude that whatever way the mother nature has chosen for him to teach him his mother tongue, this way is probably all right. To set it out more perspicuously:

1. John knows that p.
2. Our best science tells us that John has acquired his knowledge that p by using the method M.
3. W hichever method leades to knowledge is rational, justified, etc.
4. The method M is justified, rational etc.

The initial steps are quite common in psychology. When in­vestigating an ability one starts by assuming that people or ani­mals in general are succesfull in doing certain things, and then searches for explanation. Knowing in one of these things:

»An animal’s most commonplace successes in behaving give witness to the vastness and accuracy of its perception of its environment. (...) Such beha­viors all illustrate that perceivers know their environment well. It is this fact that theories of perception, ultimately, should explain. The routes ta­ken to explanation may be different, but the goal, we believe, is to account for the fact that animals perceive their surrounds sufficiently to guide dis­criminating actions (moving among surfaces without collision, catching prey, following verbal instructions, and so on). A theory of percieving, then, is a theory of knowing the environment« [Michels&Carello, 1981, p.1].
One can then imagine doing epistemology by traveling as far as possible together with the scientist. This is in fact the ideal of the proposal I want to sketch in this concluding part of the paper. I am not claiming that this is the unique right way, only that it is a promising way which has not been among the most explored.

The usual way to bring science in is in applications of epistemology — one first defines knowledge and justification and then leaves it to science to determine whether perception, reasoning etc. has the requisite characteristics. This is quite different from the reasoning sketched above (1-5). We start from the assumption that there are areas in which some humans possess knowledge. We follow science on the »routes taken to explanation« in order to get the idea about general methods, cognitive strategies and tricks that the cognitive apparatus uses to acquire knowledge. Now, the most general and most universal characteristics of these strategies have a good chance to turn out to be marks of successful cognition. Then, we might use our knowledge of these characteristics in order to formulate advice on how to solve cognitive problems and to establish criteria of justification.

Here, then, is the proposal:

1. step: Suppose that humans usually know that p. Rely upon your informed intuition, in order to pick good candidates for p.

2. step: Leave to science — cognitive psychology, sociology of knowledge etc. — to describe particular processes and methods by which humans get to know that p.

3. step: Generalize from the scientific results from the previous step!

Or, to put it in one sentence, generalize from successful cognitive practices! (This is, by the way, what philosophers of science have been doing for some time scrutinizing the epistemological foundations of science. As Salmon puts it: »But the aim of such investigations is not to question seriously the acceptability of the bulk of contemporary science; rather, it is to understand the logical structure of science more or less as it is« (Salmon, 1974, p.186.).

It is not my aim in this paper to defend the proposal, just to formulate it. So, let me be more specific about each step.

The first step is where intuition plugs in. However, not even here is it thought to be sovereign. Rather, one should rely upon it in the critical way linguists rely upon intuitions of native speakers. Furthermore, the role of intuition is limited in two important ways. One has already been mentioned — it has only to yield
judgements of whether or not a given piece of belief represents knowledge, and should not be allowed to tinker with theories and explanations. The other is modal — intuition has to be applied to actual world, not to counterfactual possibilities. What I have in mind is the following: if you ask a naive person whether he knows that the weather is fine, you will get a much more reliable answer than if you ask the same person whether a fictional cognizer in Gettier-type situations has knowledge or not, or whether the beliefs of this cognizers are justified. There are several interrelated reasons why commonsense intuitions in matters counterfactual are wavering, often confused and generally unreliable, some having to do with sheer (and understandable) lack of practice, some with more principled matters like absence of strictly specified background conditions and the like (Is the brain-in-the-vat believing all the blendwork served to him epistemically responsible? Well, does he have any means to check the truth of his beliefs? What does responsibility consist in in such outlandish circumstances? And so on). K. Wilkes has criticized thought experiments in other contexts, and although I would not go as far as she goes, I think her reasons for distrusting conclusions reached solely on the basis of thought experiments are good ones (see her »Real People«). Our proposal restricts the appeal to intuition to those cases in which it is so to say at home, in its natural habitat, and where one can trust it most.

Let me mention a striking example. The well known debate between constructionists and their ecologist opponents in the theory of perception centers around a fundamental issue: is perception essentially a process of construction in which human perceptual apparatus forms hypotheses and tests them in order to supplement the poverty of stimulus, or is it essentially a process of detecting information already present in the stimulus input? First thing to note is that at present nobody knows for sure which answer is right. Far from being acquainted with our cognitive processes, we need a lot of costly equipment and hard work even to start learning about them. Second, a moments reflexion shows that once we get the answer, the epistemologist should not be indifferent to it. If ecologists are right humans are, at the basic level, gatherers of information already present in the environment and freely available, and their primary task is to get »attuned« to what the environment affords. If the constructionist is right humans are riddle-solvers, incipient scientists at the most basic level of cognition, and their proper task is anticipating and constructing, theory testing and theory revision. Now, it seems obvious at least to me that one cannot have the same set of norms to do work in both cases. Even very general norms will
differ. (I am not saying they will contradict each other, only that most norms valid in a hospitable surrounding and with respect to very rich and reliable stimuli will be simply pointless in more austere situations if not misleading, whereas the strict norms suitable for the constructionist framework will be too restrictive in hospitable surroundings).

The second step pressuposes that there are in general many things which we know, but are not sure how exactly we came to know them. This is in marked contrast with the Cartesian idea according to which our methods of belief formation are in general transparent to us. I don't think it needs much arguing, besides pointing to what is already a commonplace in the study of cognition — that this study is indeed difficult.

The output of the second step may consist of items varying in generality and solidity. It may contain sweeping generalisations like »what animal perceives are the acts or behaviors that are afforded or permitted by an object, place or event« (Michaels & Carello, 1981, p.17), or much more specific hypotheses like »By relating forms to functions, the child ties a function to a form, and thus gives motivation for that form« (Bates & Macwhinney, 1987, p.177). Some of the hypotheses will be firmly entrenched in science and command wide consensus, some will be less universally accepted. So, they might be put to different use. The most general ones are closest to the philosopher's heart, and of most help in offering positive proposals about epistemic norms, whereas the more specific ones are important if you want to refute some overhasty generalisation.

This brings us to the third step.

There are two kind of things which can be done at this juncture.

On the one hand, the epistemologist can use the results from step two in order to test existing epistemological recommendations. If we accept that those recommendations have a conditional form — if you want to attain knowledge and avoid ignorance do such-and-such — it is easy to see how this can be done. Let us take the simplest kind of cases — epistemological theories which aim for obligatory set of norms. Such theories will enjoin the cogniser to stick to one and only one kind of strategy (usually very broad) if he wants to avoid ignorance and reach knowledge. Suppose, however that there are alternative strategies, and that we know that humans sometimes obtain knowledge by using them instead. Then, the theory under examination needs to be revised. Here is one example: there are influential theories — inspired by Popper — which claim that the only rational route to
respectable epistemic state is the method of intentionally submitting one's theories to most severe tests, and accepting them only if they withstand a good number of those. However, there seems to be at least one field in which humans are able to acquire knowledge without being corrected (without »negative data«), namely language learning. If what linguists claim is true, here is a counterexample to an influential epistemological view (I do not claim that the counterexample is in any way conclusive, but only want to show what kind of counterexamples I have in mind).

One can accept this negative role of scientific results without going further. But even at this modest level it can be clearly seen how the present proposal differs from Goldmans. In Goldmans story, what is to count as justification is decided on conceptual grounds. The science comes in post facto and only tells us about particular methods whether they are in fact reliable or not (Dretske has complained about this in his review of Goldmann in »Journal of Philosophy«). The present proposal enjoins the epistemologist to ask science about the nature of processes which we deem knowledge-producing, and thus to help us directly shape our epistemic norms.

If one wants to go further than simply using data from science as a kind of negative test, one can then positively generalize from psychology (and sociology of knowledge). Here is one example. Consider the radical probabilist strategy of never fully accepting a statement, but letting oneself be guided by it if one has a sufficiently high degree of belief in it, and not very high disutilities attached to its turning out to be false. Contrast this with acceptance theories which say that it is rational to accept some statements as true at least for the time being. Now, it seems that in gaining perceptual knowledge and in acquiring language, humans take many beliefs for granted, without assigning to them degrees of probability between 0 and 1.0 In radical probabilist views, these are then simply irrational and unjustified ways to proceed, whereas in the views of acceptance theorists this need not be so. Suppose it turned out (and it is likely that it will) that most of basic cognitive skills are geared to a yes-no kind of reaction. Then, it would be right to generalise from this and to opt for acceptance theories as a better way of codifying cognitive practices.
N. MIŠČEVIĆ: EPISTEMOLOGIJA PUTEM EKSPERIMENTA

Sažetak

Naturalistička epistemologija treba da se pozabavi bazičnim procesima sticanja znanja i posebno kognitivnih vještina (jezik, zaključivanje, perceptivna znanja).

Kao što epistemologija znanosti generalizira iz uspješne znanstvene prakse, tako bi individualna naturalistička epistemologija trebala svoje generalizacije i idealizacije temeljiti na materijalu kognitivne djelatnosti pojedinca.