KNOWLEDGE AS THEORY COMPETITION

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Knowledge as Theory Competition   I

One loses nothing but illusions, or perhaps hopes, when one surrenders unattainable, or utopian goals.

Since perceiving and knowing are incurably theory-laden, our perceivings and knowings are fallible. We may, indeed often do, believe false theories. But that we sometimes "get it wrong" is no justification for a despairing scepticism or a navel-grazing solipsism which refuses to make judgements and take up beliefs about the world as if there were nothing knowable "out there". And any view of knowledge which demands certainty, or even demands that there be infallible foundations for any knowledge claim is highly defective - applicable no doubt to angels but certainly not to humans.

Yet the shade of Descartes or of some other seeker for certainties seems to hover over much discussion of epistemology. "Classic" epistemology finds lonely individuals fighting off either naivety or solipsism and clutching after certainty. We need no elaboration of the theme.

Clearly we wish to maintain a useful distinction between knowledge and belief. But often discussion proceeds as if the only way to do this is to accept that knowing involves our knowing that we hold true beliefs, i.e., involves our knowing with certainty.

For example, I have heard it seriously suggested to students that philosophers make unduly heavy going of the notion of knowledge, because

"knowing 'p' just is believing 'p' and getting it right."

Passing over the problem that such a formulation confuses the conditions under which one is prepared to admit that someone knows something' (1) with an attempt to analyse the concept of knowledge: "getting it right" embodies a claim to know that the believer succeeds in this way, as if we had something like direct acquaintance with reality against which we have checked the belief in question (and that passes for a theory!). But since our perceivings and knowings alike are as theory-laden as the claim under discussion, we might wonder what more is added to "I believe" by "and I get it right".

Similar questions emerge if we take the slightly more sophisticated popular version, and claim that knowledge is "justified true belief." Ways of justifying beliefs can be specified: but that they are true beliefs is something to be known, and again it seems that knowledge retreats along a regress of claims: perhaps one could "know" in this sense -- but could never know that one knew. At the very least some (perhaps implicit) theory of truth lurks within any such claim to know.

A "softer" version of what it is to believe truly is required. Softer, that is, than Cartesian certainty; and yet the required understanding of truth is a realist one such as is implied by the acceptance of the following:

"A statement can be false even though it follows from our theory (or from our theory plus the set of true observation sentences)." (2)

Acceptance of such a realist understanding of the notion of truth is clearly highly compatible with holding realist views regarding the "external world" and our perception of it; and none of these views is inimical to the belief that perceiving and knowing are always theory-laden.

Having, however, abandoned the ignis fatuus of certain knowledge, having admitted fallibility, we may have lost all claim to our useful distinction between knowledge and belief - it may remain as an interesting linguistic idiom to remind us of the follies of earlier beliefs. Indeed it seems difficult to avoid accusations of relativism. Maybe we should not be too troubled by such an accusation: the best we can do is the best we can do.

That cannot be the end of the story. In just the same way as at the end of this line in metaphysics "you pays your money and you takes your choice" - and yet we search for rational means for choosing between rival and conflicting positions, we need something better than merely clashing beliefs if we are to conduct our lives, do our science. We still need to make justifiable claims to knowledge.

II

This paper had its origins in my responding to a PESA conference paper, "The Unity of Knowledge", written by Colin Evers and Jim Walker. (3) With that paper's critique of Hirst on logically distinct forms of knowledge I am in agreement, as indeed I am with the epistemological doctrine briefly set out in the final sections of the paper. There an account is offered "of the growth of knowledge as theory competition in view of practical problems and touchstone". As Walker and Evers advance their view, one notes the Lakatosian marks of a research programme which leads to a "progressive problemshift". It is along such lines that I think we need to seek to solve the riddle about knowledge set by our acknowledged fallibility.

This suggests a strategy for the present paper. (4) We may view UK as adumbrating a Lakatosian Research Programme.(5) I take "theory" in UK to range over (e.g.) individual hypotheses and the cluster of theories in which they are embedded, together with anciliary or presupposed theories. I also take it that since "the basic units of knowledge are theories, not forms" it is open to us to read "theory" widely enough to allow "the elements of k" to be called theories also. (6).

If we are to view UK as outlining a Lakatosian programme it will be revealing to attempt to articulate it as such and to identify problems around which the theory might facilitate the growth of knowledge. So I begin by briefly sketching Lakatos' presentation of methodology. (7) (I do so, I suppose, at considerable risk of being reminded that there's ample coal in Newcastle).

Theories are appraised as leading to progressive or degenerating problem-shifts in respect of their promotion or otherwise of the growth of knowledge. A research programme is in evidence by a connectedness, a continuity within a series of scientific theories. For such a programme the research paths to pursue or to avoid are indicated respectively by a positive and a negative heuristic; these are "methodological rules". Methodological rules may be formulated as metaphysical principles (i.e. "metaphysical" in the sense that "a contingent proposition is 'metaphysical' if it has no 'potential falsifiers' "). such as "Nature does not allow exceptions".

Within specific research programmes, positive and negative heuristic as methodological rules serve to delineate a "hard core" with its "protective belt" of expectedly refutable hypotheses, suggestions and anomolous "puzzles".

Negative heuristic directs research away from competing theories inconsistent with the "hard core", and decrees that this core of theories is to be defended against threatened falsification (much in the fashion indicated by Duhem and Quine) by redirecting threatened disconfirmations at the "protective belt" of auxilliary hypotheses. (8)

Positive heuristic copes with "counter-evidence" to the core by anticipating potential refutations and building them (piecemeal, as they are discerned) into the "protective belt" as problems to be coped with by continuing research.

The positive heuristic sets out a programme which lists a chain of ever more complicated models simulating reality: the scientist's attention is riveted on building his models following instructions which are laid down in the positive part of his programme. He ignores the actual counterexamples, the available 'data'. (9)

Lakatos mentions also (possibly inarticulated) "touchstone theory". This is not linked with the methodological principles we have been discussing, and indeed is not discussed at length. Perhaps it is best understood as that part of the general intellectual background (to the specific research programme) which is in some sense analogous to the "hard core" within the programme. That is, it is that cluster of theories held by the researcher which determine the view to be taken on other beliefs, rather than vice-versa. It no doubt includes views on logic and mathematics, along with high-level scientific theories and certain "influential metaphysics" adopted as methodological rules.

Seen in this way, "touchstone" is the hard core of one's beliefs not specific to the particular theory in question, but regulative of one's beliefs and conjectures: it defines one's room for manoeuvre in theory-construction. Does this then mean that when we discuss knowledge (as UK does) rather than specific (scientific) research programmes, "touchstone" becomes the "hard core"? Or should it be seen as a most powerful element in the positive heuristic?

Because "touchstone" relates to the general intellectual background, and is not "theory specific", it will usually provide the common ground for rival theorists, the arena within which agreements and disagreements can be argued rather than merely declaimed: hence the significance of UK's characterisation of touchstone as "a form of problem-solving social practice".

This, clearly, is an important concept, since (if it can be more fully explicated) it promises to be an important element in any theory of rational choice between rival theories. UK offers promising beginnings of such a theory; but the beginnings only. I think this is an important issue: having summoned above the spectre of relativism (once epistemological fallibility is accepted), it becomes important to explore rational means of choosing between rival theories. So, for example, "touchstone" needs to be explicated quite carefully. If I, materialist, atheist, am in discussion with a fundamentalist christian, "touchstone" will presumably be more exiguous than that evident when Feyerabend argues with Lakatos regarding the nature of science. (10) UK explicates "touchstone" more carefully than does Lakatos, in my view: but still it seems there is much more to say here. I express thus one of my worries about UK: no doubt an unjust complaint, since UK does not claim to do more than sketch the epistemological doctrine of the final sections. However, I make bold to raise the matter in view of UK's account of "the growth of knowledge as theory competition in view of practical problems and touchstone". I raise the issues not because I am averse to the concept, but because I believe it to be an unfulfilled promising beginning into the still-unclear area of rational criteria for choice between rival theories. (11) Can Lakatos (or those who develop his doctrines) escape Feyerabend's triumphalist

proclamation of "fellow-anarchism"?

Returning to our sketch of Lakatos' methodology, two major areas remain:

(a) How do we assess the merit of research programmes as "scientific" or as "successful"? and

(b) How do we adjudicate between rival research programmes sharing a common area?

There are three respects, all related to "heuristic power" in which research programmes may be assessed. Such a programme should

(i) be coherent enough to suggest some definite programme for future research, some series of problems to be invesitgated;

(ii) at least intermittently lead to new facts: should, i.e., unfold increased empirical content, meanwhile having a capacity to explain the refutations emergent in the course of the growth of the research programme; and

(iii) extend its heuristic apparatus to explanation of the apparent successes and failures of rival (degenerating) theories.

Having spoken of the assessing of research programmes, it is natural enough to go on to the question of how one adjudicates between rival research programmes.

In Lakatosian terms, rival programmes are assessed as to whether they are progressive (i.e., predicting new facts, widening theoretical power), or degenerating (i.e., unproductive of new facts, forced into progressively more defensive theoretical moves). This is not to say (c.f. note 9, above) that Lakatos offers slick criteria for rejecting potentially successful ones. As Feyerabend expresses it, (12) "the methodology of research programmes provides standards that aid the scientist in evaluating the historical situation in which he makes his decisions, it does not contain rules that tell him what to do."

The notion is that degenerating programmes ultimately yield place to their progressive rivals. This is not a claim that one may in a concrete situation quickly, confidently, decide which programme is progressive, or which degenerating. It may well take generations before such a decision is reached: Lakatos indeed says that it may be achieved "only with hindsight".

III

UK advances a research programme. Perhaps we can, then sketch out its elements in Lakatosian fashion. (13)

I take the hard core to include such theories as:

(a) the fallibility of all knowledge claims in view of the theory-laden character of perception and theories together with a realist notion of truth;

(b) Knowledge, a seamless web, is expressible in declarative sentences of a natural language (perhaps reinforced by terms of art, and formal systems) in deductively ordered fashion, and entails hypotheses concerning the world; (14)

(c) Knowledge grows by competition of theories in face of practical problems, there being a material relation between theory and practice; and

(d) 'Touchstone' governs the growth of knowledge.

Emerging from the defence of the hard core demanded by negative heuristic is the rejection of all forms of essentialism, together with any "forms of knowledge" thesis like Hirst's, and the offering of a critique of mistaken accounts of necessity.

Positive Heuristic, in the case of UK's programme, clearly involves the deployment of a developed logical apparatus along Quinean lines, and is fundamentally informed by an historically aware materialism which suggests the need to develop a sociology of knowledge, a setting of theory of knowledge in the causal web of society and practical problems rather than in the isolated cartesian doubter's internal questioning.

Positive Heuristic also functions in sketching out a programme for research. Indeed, without indications of the ways theory needs to develop, and of problems yet to be investigated, one can hardly claim a research programme to exist. UK gives some indication of such a programme. A theory of ideology is foreshadowed with some arguable content, as well as particular issues needing investigation within such a theory (social change, social relations of production of ideological theories, of educational philosophies and educational institutions).

Further, some claims are made which advance UK's programme as progressive by contrast with the (degenerating) forms of knowledge thesis. That is, UK claims increased explanatory power and content as well as a theoretical standpoint offering a basis for a critique of the rival theory.

Thus articulated, it seems clear that UK proposes a research programme which lends itself to representation within the Lakatosian framework, and which looks promisingly progressive.

IV

Hirst is caught between the devil of essentialism and the deep blue sea of a vicious relativism and Walker and Evers, good materialists, have banished the devil: can they escape the sea? One of the hopes of the "classical" epistemology, seeking certain foundations for knowledge claims to which I briefly alluded in Section I above, is to avoid relativism. I take the "classical" epistemology to be a degenerating research programme, like Kant's metaphysical battleground on which neither side gains ground despite frenetic activity.

Clearly the problem is less pressing within a programme which sees knowledge and the growth of knowledge as theory competition, and which rests on no foundational certainties. But if relativism is a deep blue sea for Hirst, Evers and Walker cannot afford to be totally insouciant.

Above, I expressed the view that the notion of "touchstone" needs careful explication. No doubt a justifying account of UK's programme can be developed in which touchstone plays a sturdier role; and the need to elaborate this theory seems to me a required element in the programme's positive heuristic.

Another such element, also part of UK's defensive moves against relativism, is the unfolding of a materialist view of history and of social change, the relation of theory and practice, and, as noted above, a theory of ideology. All

these, UK in no way denies, are theory-laden. Thus it seems that another required research area lies in devising theories for rational choice between rival systems.

If the reply is that we simply wait for degenerating programmes to lie down and die we may have to wait some time: "classical" epistemology has been around for quite a while.

Morevoer that would seem to leave the last word with Feyerabend. Perhaps that is the present state of the art?

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Notes

1. Which need not, of course, entail that one claims infallibility about anything at all. Non-foundationalists still wish to make knowledge claims, and to speak of truth.
2. Putnam (1978), Lecture III.
3. (a) Hereafter cited as UK.
    (b) Colin Evers takes primary responsibility for earlier sections, Jim Walker for later, but both take responsibility for all.
    (c) Agreeing with the substance of this paper, I take it that philosophy is not treated as a "second-order" activity: if it were (exclusively) that, Hirst would have at least a fingerhold!
4. It suggests also an alternative strategy, which I do not pursue. Feyerabend, in the dedication of Against Method to Lakatos, calls him "fellow-anarchist". This is in tension (as Feyerabend seems well aware) with such passages as the Appendix to Lakatos' "Falsification and the Methodology of Scientific Research Programmes" (Lakatos & Musgrave (1970), 180 ff) where it is not always clear whether Lakatos speaks or Popper is a ventriloquist.
5. (a) Since we're in the context of a theory of knowledge as a "seamless web" I omit the "Scientfic".
    (b) Lakatos makes a "terminological distinction between theories and research programmes" (e.g. Op.cit, 137, n.3).
6. I can imagine that Walker and Evers might wish to distinguish
        (i)   the elements of K;
        (ii) the basic units of Knowledge; and

(iii) research programmes.
Indeed (ii) might need further separations: there are "clusters of
theories" within "disciplines", e.g. But it is convenient for my purposes to treat
"theory" widely as I do in the text, so that without trivializing
"theory", theories can range from low-level everyday knowledge claims to
esoteric theory-clusters in mature sciences. If one claims that even
perception is theory-laden it seems not arbitrary or unreasonable to proceed
thus. I think the issue needs further thought.

7.   See Lakatos, Op cit., 132-138.
8.   Lakatos allows (op. cit., 134) that the "hard core ... may crumble under
     certain conditions ... the reason for such crumbling ... is mainly logical and
     empirical."
9.   Lakatos, op. cit., 135 and "The negative heuristic specifies the 'hard core'
     of the programme which is 'irrefutable' by the methodological decision of its
     protagonists; the positive heuristic consists of a partially articulated
     set of suggestions or hints on how to change, develop the 'refutable variants'
     of the research-programme, how to modify, sophisticate, the 'refutable'
     protective belt." Thus negative heuristic is explicit and clear ("Hands off
     the hard core") whereas positive heuristic is much more a matter of rough
     guidelines as to possible development of the programme by walling the hard
     core about with additional testable hypotheses (not ad hoc) assumptions,
     suggestions, suggestions for research aimed at "heading off" difficulties and
     predicting new phenomena. It is the positive heuristic which may be expressed
     as "metaphysical" principles. All this may take considerable time to develop:
     a programme will not usually offer instant success, and the initial stages
     in the development of a programme may well be dauntingly difficult, always on
     the edge of possible defeat. Lakatos: "One must treat budding programmes
     leniently: programmes may take decades before they get off the ground and
     become empirically progressive. Criticism is not a Popperian quick kill,
     by refutation. Important criticism is always constructive: there is no
     refutation without a better theory" ("Science and Pseudoscience", 1973, BBC
     radio talk for the Open University)
10. cf. UK.
11. One major worry, e.g. centres on UK's footnote "... logic is touchstone to
     the setting up of any theory or theory competition at all." I, too, incline
     to such a view. However, it is not so straightforward, in view of the
     competing theories regarding logic itself. Consider, e.g. Putnam, (1978),
     25ff: the notion that classical logical connectives may be reinterpreted
     in intuitionist fashion so that theorems of classical P.C. become theorems
     of intuitionist P.C. at the cost of classical meanings of connectives, and
     the loss of truth and falsity in favour of provability. Further, Haack
     (1978), 232, 237 ff (and so Quine) on the revisability of logic. UK, (42f)
     indicates awareness of the issue.
12. Against Method, 186, One of Feyerabend's views is neatly expressed in his
     note on the version of "Against Method" which appears in Harding, Sandra G.
     (1976), Can Theories be Refuted, (Reidel): "In my lectures on the theory
     of knowledge I usually present and discuss the thesis that finding a new
     theory for given facts is exactly like finding a new production for a well-
     known play." (n.32, p.315).
13. Here I am clearly vulnerable to any caveat the authors of UK might wish to
     enter.
14. C.f. Holzner (1968): "... we ... define 'knowledge' as the communicable
     mapping of some aspect of experienced reality by an observer in symbolic
     terms." 20.
15. (1975), 181, "... Lakatos' philosophy appears liberal only because it is
     anarchism in disguise. And his standards which are abstracted from modern
     science cannot be regarded as neutral arbiters in the issue between modern
     science and Aristotelian science, myth, magic, religion, etc."