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2

In defence of evolutionary epistemology

by
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1

IN TWO RECENT ARTICLES Barry Stroud has attacked naturalised epistemology in general, and evolutionary epistemology in particular. In this paper I counter his arguments. In [8] (henceforth SNE) Stroud seeks to press traditional sceptical doubts upon the whole enterprise of naturalised epistemology – or at least to show that these doubts have not been allayed. In [9] (henceforth ENT) he tries to show that evolutionary epistemology in particular inadequately accounts for necessities of thought. His arguments merit detailed response, and I shall have to quote them at length in places.

Perhaps a preliminary word is in order about the conditions for this engagement. One could take a radically Quinean line and refuse to acknowledge any clear distinction between necessary and contingent truths, and thereby rescue evolutionary epistemology from the inadequacy Stroud alleges. But I shall not do this. I shall acknowledge at least the modal status of logical and mathematical truth.

By way of stage setting, I give a brief and impressionistic summary in the next section of evolutionary epistemology, to expose the two flanks vulnerable to Stroud's attacks. Sections 3 and 4 then deal with SNE and ENT respectively.

2

Imagine the model of random variation and selective retention adopted for the whole field of epistemology. Then no apodeictic knowledge claims would be left. On such a model all is approximate, because adaptively lagging. Theories are adjusted and dis-

carded; just as, in our evolutionary past and even now, genetic mutations change organs of perception and thought, allowing natural selection continually to overhaul cognitive design. At best we have reliable beliefs, gained through rough-ground lenses on the world. Complete veridicality is probably not, in evolutionary terms, cost-effective. Organisms that must act to survive must process information. They must do so reasonably well, and reasonably fast. Quick computing cuts corners. Under pressure of time we round out, before the world rounds on us. Both physiological and cognitive adaptation is asymptotic; the residual gap, however small, renders all 'knowledge' uncertain. Perception is purpose-relative. Purposes are directed to survival (or, in gene-selectionist terms, to maximising inclusive fitness). Survival is niche-relative, a simple matter of more or less. There is slack all the way. It is phylogenetic snobbery to claim privileged access to a world as it really is, or as the builders of any other cognitive empire would have to rough it out to be.

Evolutionary epistemology is concerned not so much with an account of the 'evolutionary' progression of scientific theories as with the origin and development of cognitive structures and abilities, in a long phylogenetic line stretching from amoeba to man. For the philosopher, the main interest it provides is not the task of biologising Kant.¹ Rather, it is to find a congenial framework for the consequences just sketched of taking seriously the view that our cognitive structures are evolutionary products. Among these consequences are of course the interesting view that Kant's individual *a priori*'s are phylogenetic *a posteriori*'s (cf. Lorenz [4]). But there are many more. And to accommodate them one follows a path through the philosophy of Quine, Ramsey and the later Wittgenstein.

With his account of innate quality spaces, behavioural conditioning, physicalism as efficient positing, sensory bombardment, and piecemeal and pervasive theory revision, Quine extends a standing invitation to the evolutionist.

Ramsey is relevant for an important reason. I suggested in an

¹ This is the main concern of Austro-German writers on evolutionary epistemology. See, for example, Lorenz [5], Vollmer [13], and Riedl [7].

earlier paper, for the sorts of reasons above, that evolution should be regarded not as an “*erkennnisgewinnender Prozess*” but as a “*glaubensgewinnender Prozess*” (Tennant [11]). For desires and intentions form a teleological pyramid with survival and reproduction at its apex (cf. Woodfield [14]). And the actions a creature undertakes result from its desires and intentions when they engage with its *beliefs* about the world within which it must act, and its fate within which those desires concern. Once evolution has produced creatures that have beliefs and desires, ontogenetic epistemology – or better, doxastology – is decidedly Ramseyan. Intersubjective disagreement is a matter of being at odds about the odds; and internal consistency is our adaptive response to Nature’s Dutch book.

Here we are, transient evolutionary products with five sense modalities and possibly more mouths to feed. Is ours the only way to cope with the world? Evolutionary epistemology of course answers negatively. It offers a wholly non-anthropomorphic perspective on intentional behaviour on the part of any species of organism. It enjoins us to take seriously the philosophy of life form after Wittgenstein.² We are but one among many species of social creature enmeshed in certain practices and institutions, contingently equipped with certain organs of sense and systems of communication based on them. Phylogenetically we occupy no privileged position. But for us it is our only position (pending only that differentiation of life form that cultural relativists might foist upon us). An abiding enigma for evolutionary epistemology is how or whether we can make sense of the implied relativity of conceptual scheme, or of access to reality, while not *ourselves* being able to form any intelligible conception of how the world is to a radically different kind of organism, one endowed with different sense modalities and leading a totally alien life. If evolution sets limits to how we can cognise, how can we imagine those limits to be set differently for other beings with different forms of life? Does bat sonar produce secondary qualities for them, with variation in colour or tone or pitch or what? Do frogs, which supposedly ‘see’ only moving objects, at

² For this idea, and the associated emphasis below on actions and interactions, I am much indebted to Derek Bolton’s [1] and to stimulating conversations with him.

least ‘see’ them as having the same shapes as we do? Do these sorts of question make any sense at all?

Evolutionary epistemology views mind as constituted by the exercise of categories and concepts in forming from sensory experience beliefs of varying degrees; and by the coupling of those with desires of varying degrees, so as to produce *actions*, or *interactions* with others and the environment. A system of communication may have many uses of varying survival-relevance. Of these, it may be assumed that informative assertion is very important. Assertability conditions must be detectable, whether consciously or not. That is, they must be able causally to influence one’s behaviour even if only mediately and unconsciously, through adjustment of beliefs and desires. (Even this relaxed publicity postulate will commend an anti-realist semantics, but that is a topic for another paper.) We accord no sense to any conception of the world as it ‘really’ is, independently of our ways of perceiving, apprehending and organising it. Nor can we communicate any conception of the world’s being thus-and-so, if this transcends our available means, perceptual and conceptual, of achieving public agreement as to its being thus-and-so. And we cannot conceive of features’ of the world being independently and objectively *necessary* as opposed to assertions’ turning out necessarily true because of conventions that govern our speaking and thinking. These conventions are products of social evolution, and help to set the limits of our world.

3

Often the problem with a philosophical problem lies in its formulation. So it is with Quine, and with Stroud on Quine. Stroud quotes from ‘Epistemology Naturalized’, pp 82–83:

The human subject is accorded a certain experimentally controlled input – certain patterns of irradiation in certain frequencies, for instance – and in the fullness of time the subject delivers as *output a description* of the three-dimensional world and its history.
(My emphasis)

And he echoes this way of stating the problem in SNE, p 461:

We observe a human being and we observe his environment while also observing the "output" he produces in the form of *utterances we understand to be* about the world around him ... We see that his "output" is, generally, speaking, accurate, and our only reason for saying he is "positively" or "projecting" at all is that what he says about bodies goes well beyond the meager physical stimulations science tells us he is receiving at his sensory surfaces.
(My emphasis)

The emphasised notions are misplaced; the problem is mislocated. The pairs "irradiation – description" and "stimulations – understood utterances" pose the problem by disguising part of its solution. I suggest that the appropriate pair is "input-action", and indeed action of a broadly survival relevant kind. Some of that action will be linguistic – or, at least, we hypothesise from time to time that it is so. By means of further hypotheses we seek to interpret and understand it. The subject may well "deliver a description" as Quine describes; but it in turn delivers us content only after interpretative effort on our part. Likewise, the "utterances we understand", as according to Stroud, should not be thought of as too casually and immediately invested with content. We have to recover content *after* our observational record concerning the subject's inputs and outputs is complete.

"We see that his output is, generally speaking, accurate ..." (SNE, p 461)
From what vantage point do we see this? The internal (empirical) Moorean one, or the 'philosophical' external one from which the traditional problem of the justification of knowledge is generated?

There is the following mistake, akin to anthropomorphism. It is to take linguistic understanding as anchored, to take the facts of linguistic life as fixed, and pose the problem as one of getting from stimulations to those theoretical descriptions thus supposed to be unproblematically understood. We would not make this mistake when studying, say, bee dance. We would not point to the gap between the meagre irradiations suffered by a forager and the rich, projective deliverances of dance whose function, we now presume, is to say back at the hive how the world is out there. The reason why we don't do this is because we have to make such a scientific interpretative effort to break into the bee code. If that code sat as

naturally and happily upon us as does our mother tongue, we might (absurdly) have raised a philosophical problem about the justification of bee knowledge, parallel to the traditional philosophical problem about the justification of human knowledge.

Stroud's problem for Quine's conception of naturalised epistemology depends on an alleged possibility described as follows (pp 462–3):

We are restricted to *what is happening* in the subject himself and to his "output" ... Given only what we would have access to in that situation, we could not go beyond saying, "He projects (or posits or believes or puts it forward) that ..." We could not assert the much stronger conclusion, "He correctly believes (perhaps knows) that ..." and so we could not see his view of the world as anything more than a mere "projection" or construction from certain stimulations ...

The possibility here is supposedly that of blocked passage from saying that the subject merely projects that *p*, to saying that the subject correctly believes that *p*. But for Stroud, remember, the subject's "output" is wholly linguistic – indeed, it consists in the very "projecting" attributed.

This attribution of propositional content on the evidence of such "output" alone is illegitimate. Stroud helps himself too easily to content projected. He then has to toil for content correctly believed. But the suggestion I made above dissolves this difficulty. The suggestion, I repeat, is to recognise that to break the code in which the assertions are made we *must* be observing an *agent*. This entails, among other things, that we must also see the environment within which he behaves and from which he receives his "impacts". We must work out his non-linguistic intentions and desires just as assiduously as we work out his meanings: for the former are the bedrock of the latter. Thus when Stroud goes on to say that he raises the possibility above

as an illustration of the truism that we could not explain how someone's knowledge, or even true belief, is possible unless we could *observe that* person's assertions on the one hand, and observe or otherwise know about the world they are about on the other, and thereby ascertain independently of his asserting them, whether those assertions about the world are true we can reply thus: We cannot simply *observe* someone's assertions

and thereby generate the alleged problem. We must observe *and understand* those assertions (or at least, provisionally, *interpret* them) before assessing their correctness. The traditional skeptic or challenger of our claims to knowledge keeps his problem alive by continually retreating to a perspective *outside* any hypothetical web, or stage of theory construction involving interpretative hypotheses about the subject's linguistic behaviour. Naturalised epistemology can meet this challenge by pointing out the conceptual impossibility of such a retreat on the part of anyone who wishes at the same time still to lay claim to an *understanding* of the very assertions (projections, descriptions) whose justification or ground is to be called into question. Nor is the passage, on this view of the matter, from ascription of content projected to attribution of correct belief rendered frictionless by a mere shift of methodology. There is still rough ground underfoot. An adequate theory will no doubt find room for, and even corner, the flippant, the deceitful, the hallucinating and the superstitious.

I shall end this section by clearing up two other points before moving on to examine Stroud's argument against evolutionary epistemology. The first point concerns the correct interpretation of a passage in Quine. Stroud's complaint (p 464) is

if we follow Quine's instructions and try to see our own position as "just like" the position we can find another "positing" or "projecting" subject to be in, we will have to view ourselves as we view another subject when we can know nothing more than what is happening at his sensory surfaces and what he believes or is disposed to assert.

Now the Quine quote in full ('Epistemology Naturalised', p 83) was

We are studying how the human subject of our study posits bodies and projects his physics from his date, and we appreciate that *our* position in the world is much like his. *Our* very epistemological enterprise, therefore . . . is *our* own construction or projection from stimulation like those we were meeting out to our epistemological subject. There is thus reciprocal containment, though containment in different senses: epistemology in natural science and natural science in epistemology.

(My emphases)

This is no royal plural on Quine's part. It is a *collective* "we". Cannot then the convergent pluralism of scientific consensus or

communal knowledge prevent Stroud from making out that *our* position is simply a multiplication of those individual predicaments seen from a third person point of view? Stroud is preoccupied with the *first* person predicament. But even to the extent that I credit myself with *beliefs* (whose correctness has to be established) I must see myself as *acting in a world*. And insofar as I claim (bereft and alone) to be *making assertions* (whose correctness has to be established), I must people my world with others. My warrants for my assertions cannot be essentially and wholly private. Deprived of his private language, the asserter is responsible to his public; the limits of their agreement are the limits of any accessible world.

My second and final point in closing this section concerns Stroud's claim

(If science is true) then from what it tells us about perception we can see that we can never tell whether we are perceiving the world as it really is.

Does science (or our claim to scientific knowledge) imply that we ever perceive the world *as it really is*? All belief (knowledge) is representational, not reproductive in all details. Scientific explanations of illusion identify certain circumstances that produce it, and to that extent should increase our confidence, in other circumstances, that our perceptions are reliable. Here Stroud's skeptical doubt is actually a *scientific* doubt. As such, science may be used to allay it.

4

And now to necessity. Stroud's concern in ENT is

with the general condition that must be fulfilled by an evolutionary explanation of our beliefs that does not detach us from those beliefs and represent them as no more likely to be true and therefore no more worthy of our assent than the products of comfortable hallucinations or congenial dreams.

(a) He suggests a means:

(Such an evolutionary explanation) will employ a notion of the truth of what is believed independently of its being believed, and it will somehow show that the truth of what is believed is implied or rendered probable by the evolutionary explanation of our acceptance and retention of the beliefs in question . . .

Indeed it will employ a notion of truth: but not one wholly independent of what gives the belief its *content*. That is to say, the theorist will have to take into account the agent's perceptions and actions connected with holding the beliefs. Moreover, Stroud's requirement is acceptable only in the case of entrenched beliefs, beliefs with a higher grade of apriority or otherwise less immune to revision than the belief, say, that this is a dagger before me or that there are milestones on the road to Dover. For fashions in paper knives or cigarette lighters, and the whims of local authorities when the great day of metrification arrives, are hardly permanent features of the selective environment. But the matter is very different with basic beliefs about substance, causality, space and time; about the relationship between our bodies and our perceptual world ("That this is my hand before me"); about certain movements being actions; about computational facts; and so on and so forth. Not all these beliefs, for their significance in the present context, need be innate in the strong sense of our being born already explicitly or implicitly holding them. The only innate capacity required here is that of tending to acquire these beliefs in the fullness of time as we mature and learn: learn, that is, both from our experience and from reflection on certain features of our thought and language. The latter is especially important in the case of logic and mathematics; but more of that presently. For present purposes it is enough to note that the evolutionary explanation Stroud is concerned to discredit need only address itself to the origin and entrenchment of certain stable and pervasive beliefs within our species.

(b) He then makes a complaint that alleges a central defect in the evolutionary account:

it does not even seem possible to fulfil that condition in explaining our ascribing *necessary* truth to some of the things we believe . . . An evolutionary explanation of our thought about necessity will explain how and why we have a notion of necessary truth as something objective and independent of its being believed; and why we ascribe it to some things and withhold it from others.

Yet the defect is only apparent. It results from too strong a demand, a demand that the genesis and correctness of beliefs be explained in

only one, rather limited, way. I am now concerned to map out what I take to be a satisfactory explanation, in evolutionary terms, of necessarily true beliefs.

There is no survival value in holding any necessarily true beliefs, in the way that there is survival value in the belief, say, that children need nourishment and norms, that night will follow day, and that seasons recur. There *is* survival value, however, in being equipped with those categories of thought and action which, through linguistic expression, produce the necessities in question. All we need demand of the evolutionary explanation is an account of why number-thought (counting, calculating) should promote survival. But *that* number thought should yield necessary truths when pursued and organised appropriately (through rules for addition and multiplication, the principle of mathematical induction etc) is something for which it would be inappropriate to demand a peculiarly *evolutionary* explanation. That a language allowing reference to and quantification over particulars should, through the assertability conditions of semantically complex statements, 'end up' obeying a certain logic (a certain set of inference patterns) likewise calls for no peculiarly *evolutionary* explanation. What we can perhaps legitimately demand of an evolutionary explanation is an account of why we have evolved with a conceptual scheme of particulars. The account would itself have to be given within that very conceptual scheme. Though circularity may thus threaten, a similar circularity would nevertheless beset any other *non*-evolutionary account of, say, the appropriateness of such a conceptual scheme for our transactions with an independent reality. Similarly also we employ deductive rules to establish their own soundness. These are circularities with which traditional epistemology wrestles, and should not be visited upon evolutionary explanations as their exclusive embarrassment.

Do we "have a notion of necessary truth as something objective and independent of its being believed"? Perhaps we do. But we do *not* have any notion of necessary truth as something independent of there being beliefs formulable in a certain conceptual or linguistic framework. Arguably, in the case of analytic (including logical) and mathematical truth, necessity rests on meaning, meaning arises

from use and it is use which is of use in an evolutionary sense. (Perhaps here there is even room for the creative linguistic subject who makes necessities clear through his constructions without it being the case that his constructional activity has *made* them necessary.) The use which has survival value is use of language in the widest sense to make (largely) contingent and informative claims about the world to one's fellows. There is no special usefulness, on this view, in claims which turn out to be necessarily true. But it is of considerable practical use to have a linguistic system which of necessity generates necessary truths as by-products of its internal workings – especially of the internal checks and balances seen in the introduction and elimination rules for logical operators, say. (More problematic is the necessity of a special class of necessary truths, namely Kripke's metaphysically necessary but *a posteriori* truths such as 'The Morning Star = The Evening Star', 'Water is H₂O' and 'Heat is the motion of molecules'. Here the necessity to be explained does not arise simply from the workings of a linguistic system, but rather from the way language connects with the world, and the way the world (supposedly) ultimately *is*. These, however, are not necessities of *thought* but are (perhaps even unwittingly) thought *necessities*; and presumably Stroud would not be concerned with them.)

The view I am putting forward, then, is clearly a version of conventionalism. Stroud attacks it thus (ENT p 241):

Not only does conventionalism about necessity imply the existence of alternatives to our present ways of thinking and speaking – alternative "conventions" we could have "chosen" instead – but the appeal to such relevant alternatives must be an essential part of any attempt to establish the truth of conventionalism against its rivals.

But one can be a conventionalist while yet maintaining that we cannot form any intelligible conception of ways of thinking and speaking about the world other than our own. We may thus insist on the difference between conventionalist necessity and the necessity of any 'independent objective features of *the world*'. Stroud claims that the conventionalist view 'can be made credible only if there is some way to distinguish it from the apparently rival view that necessary truths are true in virtue of the way things necessarily

are'. The distinction is easy! – the first view is intelligible, the second is not. It is difficult enough to make sense of things' being thus-and-so in themselves without demanding also that we make sense of their *necessarily* being thus-and-so. We can come no closer to a conception of how things are in themselves than by putting forward a theory – a set of assertions – in a (public) language. And the only headway we can make with how things might *necessarily* be in themselves is to consider which assertions about them we would hold to be necessarily true. In saying this, I am of course not saying that all necessary truths are *de dicto*. I allow internal necessities (*de re* necessities) such as 'a necessarily R's b' involving reference to particulars a and b in the (actual) world. But the necessity here is still, if not necessity of assertion, nonetheless necessity of predication. It is not a naked necessity attaching to any state of affairs independently of how we conceptualise and speak about it.

Stroud nicely summarises the view I am defending: (ENT, p 242)

... necessary truth, unlike truth itself, is thought to be in some sense a "creation" of ours – a by-product of our cognitive interaction with the world that is not a representation of any objective states of affairs holding independently of our thinking in certain ways.

He attacks it by asking first

Precisely what relation is supposed to hold between our thinking or speaking in certain ways and the necessary truth of the things we now accept as necessary, exactly how is that notion of "responsibility" to be understood? Consider something that we believe to be necessarily true, for example, 'if all men are mortal and Socrates is a man then Socrates is mortal'. Does conventionalism, or indeed any view according to which necessary truth is in some sense our own 'creation', imply that the truth of that statement is due solely to our present ways of thinking or speaking in the sense that if we had thought or spoken in certain other ways, or had adopted relevantly different "conventions" then it would not have been true that if all men are mortal and Socrates is a man then Socrates is mortal?

The answer is surely negative. Conventionalism in no way implies the cited consequence in the sense stressed by Stroud. For if we *had* thought or spoken in certain other ways, it would not have altered one jot the truth (indeed: *necessary* truth) of what we mean in English (as governed by present logical conventions) by "If all men are mortal and Socrates is a man then Socrates is mortal". The way

conventions implicit in our use of English expressions are *responsive* for the necessary truth of that English statement perhaps deserves to be made more clear. The logical operators 'all' and 'if ... then' and 'and' form complex statements whose assertability conditions can be described in terms of simpler statements, as can be seen from the introduction rules:³

$$\frac{\text{---(i)}}{A(a)} \quad \vdots$$

$$\frac{\text{---(i)}}{B(a)} \quad \vdots$$

$$\frac{\text{---(i)}}{\forall x[Ax]Bx} \quad \text{where } a \dots \text{ etc}$$

$$\frac{A \quad B}{A \& B}$$

$$\frac{\text{---(i)}}{A \supset B} \quad \begin{array}{c} A \\ \vdots \\ B \end{array}$$

The corresponding elimination rules are in harmony with these, allowing us to 'unpack' from a complex statement only what we are allowed to 'put in'.

Thus the elimination in rule

$$\frac{A \& B}{A}$$

is justified because a warranted assertion of $A \& B$ requires a warrant for the assertion of A . Likewise

$$\frac{A \quad A \supset B}{B}$$

³ The rules for the universal quantifier in this form may be unfamiliar. I first proposed this grammatical analysis of restricted quantifiers in Tennant and Altham [12]. The rules of inference are from my [10].

is justified because the warrant for the assertion of $A \supset B$ is a derivation of B from A , which turns warrants for the assertion of A into warrants for the assertion of B .

Finally

$$\frac{A(t) \quad \forall x[Ax]Bx}{B(t)}$$

is justified because in order to assert $\forall x[Ax]Bx$ one must have a 'schematic warrant'

$$\begin{array}{c} A(a) \\ \vdots \\ B(a) \end{array}$$

which, upon substitution of any term t for a produces a warrant for the assertion of $B(t)$ from any warrant for the assertion of $A(t)$ (cf. Prawitz [6]).

Putting our rules into effect, we can produce a warrant for the assertion of Stroud's sentence 'If all men are mortal and Socrates is a man then socrates is mortal':

$$(1) \quad \frac{\text{---(1)}}{\forall x[Ax]Bx \& At} \quad \frac{\text{---(1)}}{\forall x[Ax]Bx \& At}$$

$$\frac{\text{---(1)}}{At} \quad \frac{\text{---(1)}}{\forall x[Ax]Bx}$$

$$\frac{\text{---(1)}}{Bt} \quad \frac{\text{---(1)}}{(\forall x[Ax]Bx \& At) \supset Bt}$$

It is clear that conventions are responsible for the logical truth of the conclusion without being antecedents of a logically true conditional with that conclusion as consequent. Stroud alleges a second difficulty in the view that all logical truths are true by convention (ENT, p 243), but one which we now see to be spurious:

Even among logical truths alone there are an infinite number we now accept, and so we could not have conventionally endowed each of them singly with the truth we now attribute to them. Our explicit conventions would have to have been general ones, *from which* the truth of individual

logical truths follows. But if one truth follows logically *from another* then the conditional with the latter as antecedent and the former as consequent is itself a logical truth, and so in attempting to render true by general convention some individual logical truth we make essential use of some other logical truth whose truth is so far unaccounted for.

This embodies at best a category mistake, and at worst sleight of hand. As seen above, the sense in which the truth of individual logical truths 'follows from' conventions is *not* the same as that in which the consequent of a logically true conditional follows from the antecedent. It might perhaps be better to speak of logical truth arising from or flowing from the conventions in question. For we are interested in truth by convention, not in what follows from the truth of conventions. It may be true that a certain convention holds; but we cannot hold that a certain convention is *true and logically implies* individual logical truths. Conventions are not truth bearers. Rather, they regulate truth bearers: they are the means by which truth bearers assume, shift and deposit their loads. There is no circularity, and no uncovered case, in an account of conventions as the source of all logical truths. We must distinguish the way in which (a) evidence concerning our linguistic behaviour bears on the claim that an explicitly given convention holds, from the way in which (b) once given the convention, we work out that certain individual truths are logical truths. Neither of these passages has the character of a logical derivation of conclusion from premisses, as Stroud's criticism would have one imagine. The first passage (a) is a complicated (inductive) inference to the best description of regularities of use. The second (b) might involve deductions of conclusions from conditional assumptions *in accordance with* the conventions (rules of inference, say) that are given, *without* thereby using the conventions themselves as premisses *from* which the logical truth in question is inferred. The example above made this clear. The Socratic conditional turned out a logical truth not *conditionally upon* some (supposedly truth-bearing) conventions as premisses, but rather by means of a deduction *in accordance with* the conventions (here: rules of inference) in such a way as to render the logical truth in question *independent* of any assumptions at all.

I conclude, then, that Stroud's objections to conventionalism do

not succeed. The way is clear for a "naturalistic study of human beings" to answer his remaining pressing questions (p 244):

- 1 Why do we ascribe and withhold necessity in just the way we do?
- 2 What function has the idea of necessity for us?
- 3 What can we do in virtue of possessing the idea that we could not do without it?
- 4 Why do we have an idea of necessity at all?

It is neither flippant nor trivial to answer (1) by saying 'because it is sensible to be true to the demands of necessity once they arise'. To (2) we can reply that not every idea – even for an evolutionary epistemologist – need be shown to have a *function* before crediting ourselves with a grasp of it.⁴ The idea of necessity can impose itself upon us because we use a system of thinking and speaking that itself has important functions (from an evolutionary perspective), without the idea of necessity itself having any function. But this might be an extreme, even if easily defensible, view. More congenial is the thought that the function of our idea of necessity is to enter fixed points in our practice so as not to overstretch our conceptual net. A bold analysis of necessity would represent it as the by-product of the demand that linguistic innovation *conservatively extend* the class of assertable statements.⁵ Having a new way of putting things should not put new things our way.

On p. 247, Stroud says in closing:

Taking an evolutionary perspective, we must acknowledge the contingency and explicability of our present ways of thinking, and in particular of our present ascriptions of necessity. But if we do regard some things as necessarily true, we thereby deny their contingency and cannot countenance the possibility of alternatives to them.

This continues the mistaken conflation of truth with conventions. I understood the contingency of a way of thinking as consisting in the

⁴ The same can be said for skills we may have as a result of our anatomical structure. The ability to play the piano is a by-product of natural selection, even though there has presumably been no natural selection for that ability. Cf. Gould and Lewontin [3].

⁵ Cf. "The philosophical basis of intuitionistic logic" and "The justification of deduction" in Dummett [2].

possibility of a different way of thinking. But Stroud needs to understand it in a different, illegitimate way – namely, as consisting in the possible truth of thoughts framed within *that* way of thinking (employing *those* categories and logical operators etc), thoughts that we hold false at present. Only thus can he generate the apparent inconsistency between the contingency of conventions and conventional necessities.

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