THINKING REEDS AND THE IDEAL OF REASON: OUTLINE OF A NATURALISED EPISTEMOLOGY

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Pascal described human beings as 'thinking reeds', weak in flesh but magnificent in mind. While it is a poetic image, it is also an ambivalent one and may suggest an inappropriately dualist view of human nature. It is important to realise that not only are we thinking reeds but that we are thinking *because* we are reeds. In fact, rationality is reed-like itself, very much of a kind with the rest of human nature. It is now more than two and half centuries since David Hume first pointed out the lack of an argument that would fully justify claims about matters of fact. Being neither made evident by our observations nor arising out of the mere consideration of relations of ideas, claims such as that the turkey will be fed dinner tomorrow – rather than being had for dinner (to use Russell's famous example) have remained problematic ever since. Many attempts have been made to show that something of the beauty and certainty of reasoning about relations of ideas could be recaptured in our dealings with matters of fact, but all attempts have remained mere shadows of what we tried to grasp. Hume's argument stands. An infinite being might watch countless sun-sets and yet should witness each new sun-rise with surprise, always withholding its judgement regarding what will follow.

Famously, Pascal described human beings as 'thinking reeds', weak in flesh but magnificent in mind.[1] While it is a poetic image, it is also an ambivalent one and may suggest an inappropriately dualist view of human nature. It is important to realise that not only are we thinking reeds but that we are thinking *because* we are reeds. In fact – while being every bit the marvel that Pascal wondered at – rationality is reed-like itself, very much of a kind with the rest of human nature.[2]

It is now more than two and half centuries since David Hume first pointed out the lack of an argument that would fully justify claims about matters of fact.[3] Being neither made evident by our observations nor arising out of the mere consideration of relations of ideas, claims such as that the turkey will be fed dinner tomorrow – rather than being had for

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[1] Pascal, B. (1660): *Pensées* 347.

[2] My approach fits into a well-developed tradition of biologically-informed naturalised epistemology with Sterelny (2003) being just one recent example.

[3] Hume, D. (1739/40).

dinner (to use Russell's famous example)[4] have remained problematic ever since. Many attempts have been made to show that something of the beauty and certainty of reasoning about relations of ideas could be recaptured in our dealings with matters of fact, but all attempts have remained mere shadows of what we tried to grasp. Hume's argument stands; if anything, made stronger by the attempts to bring it down. An infinite being – the very epitome of reason – might watch countless sunsets and yet should witness each new sun-rise with surprise, always withholding its judgement regarding what will follow. Wise to the possibility of error and the availability of further evidence, it would sit Solomon-like, but without reaching any judgement. Endless leisure would lead to endless cogitation.

Like Marvell's lovers, however, we are not granted 'world enough and time'.[5] Instead, we must bring our inquiries to a hasty end, if we are to bring them to an end at all – the grave's a fine and private place, but none, I think, do physics there. What is more, we do not reason to just satisfy an idle curiosity but to settle matters of pressing import. When being chased by a lion, one shouldn't stop at a crossroads to consider one's options. Failure to act in time is an act, just not one that we have chosen. Not surprising, therefore, that we should be in the habit of making what Hume saw as hasty and unjustified predictions.

Nothing has been gained, it may be thought. With even less reason than the leisured ideal of a reasoner might hope for, we throw ourselves into precipitous action. We're like a trapped animal that might thrash about, unable to find a clear way out of its predicament, and with just about as much cause to expect success. Given the lack of proper insight into our milieu – the matters of fact upon which the success of our actions rides – any success we do achieve must be fortuitous and nothing more.

There's something here that must give us pause. When one first hears of Hume's line of reasoning one usually seeks to turn it aside with a gesture to the successes of the past – 'But we have landed on the moon, untwisted DNA, built a communications network that spans the globe.' All irrelevant, of course, if one thinks that past success is sufficient grounds to expect the future to unfurl continued success. However, what if the force of that thought is turned around? What if Hume, himself, was as-

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[4] Russell (1912).

[5] Marvell, A.: *My coy mistress*.

ked to reply how this state could have come about? The best way for him to respond would be to claim that these successes were self-fulfilling prophesies of a sort. But, then, this would not explain our past failures and, therefore, could not be seen as an adequate explanation overall. Perhaps it all has been a chance miracle, then? A fortuitous happenstance where we have picked and picked again the right conclusion with a lucky hand? Not an option that Hume would look gladly upon, I think. Indeed, all that he could do is refuse to reply, except to say that it is not for him to make any claims, just to show the folly of ours. Still, even that reply ought not satisfy. His claim would be to be able to stand aside and watch our credulity; yet the truth of his argument would entail something still more incredible. Why should Hume disown his own entailments while expecting us to be responsible for ours? At best, he would end up in as much a difficult situation as we do, leaving us with no more reason to accept his views as to reject them.[6]

Maybe, however, Hume should not be seen in such a sceptical role? His argument is only aimed against the idea of there being an argument for discovering matters of fact alike that used in understanding relations of ideas. He is happy enough to allow that we have the habit of predicting. Surely, how sceptical Hume's conclusion is depends upon what this habit turns to be like.

Let us then look again at our habits. How is it that we come to claim to know what will happen next? Are our habits like the universal justifying principles that have been sought after ever since Hume's work fell from the presses (the claim that it was stillborn having been greatly exaggerated)? In its presumptuous hubris, any universal principle is sure to fail somewhere – perhaps, the next time one looks upon an emerald. But that is not what we are finding our habits to be like.[7] Far more modest, our habits are just rough and simple heuristics only meant to be employed within a constrained context, both to make predictions and to decide how to act. As such, our heuristics work well enough so long as

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[6] Talmont-Kaminski (2000).

[7] For an example of recent work on real examples of human reasoning see Kahneman – Slovic – Tversky (eds.) (1982). The correct interpretation of their work is still a controversial issue. For example, Piattelli-Palmarini (1994) sees them as investigation human irrationality rather than rationality. That view, however, assumes that formal methods can constitute a perfect rationality. In giving a more optimistic view of human heuristics I am following Gigerenzer (2000).

we do only use them in the right situation. We may well be unaware of their constrained utility and only be kept from straying due to the wrong contexts being sufficiently out of the way for us, or due to them being rare enough not to matter too much. Of course, there is a price to be paid for this simplicity. The moment we do stray, though the line may be imperceptible to us, the heuristics we use lead to systematic errors. However, such errors may just as readily be patched up again with the addition of yet another heuristic; each adequate to the new, limited context. The overall effect is that our rationality does not resemble the flawless form of perfection that was dreamt of but looks to be a jerry-built wonder that seems to be constantly barely staying afloat.

What do these heuristics look like? One, often used by architects to make people think a building is taller than it actually is, is to assume that the apparent tapering of a tall object is due to perspective and, thus, to judge the object to be very tall. Another, similar, is to judge objects that we see without a blue tinge – caused by the Earth's atmosphere – to be relatively close: a problem for future explorers of Mars and other planets lacking in atmosphere. A different, more general, kind of heuristic used by us is called anchoring – the working assumption that the future will remain pretty much like the situation today.

What kind of justification can such heuristics hope for? For them to be effective, much of our picture of what the world is like will have to be correct, as they assume that the context we are in is the particular context they were created for. Therefore, our knowledge about our world must enter into whatever justification we might offer for a heuristic – not that they are normally expressly justified rather than being merely used and, possibly, discarded if found to be grossly inadequate. The worry that in seeing a heuristic as justified we must be begging the question comes readily. Yet, as we have seen, those who would deny the effectiveness of our heuristics are in the same straits as we are.

Indeed, to claim that we must find a solid ground for our beliefs and for our methods to rest upon is as much an error as to claim that all that is called for is that they all cohere well together. Both views assume that rationality consists in having beliefs that have the right sort of relations between them – be it one-sided and foundationalist or two-sided and coherentist. To make this assumption, however, is to fundamentally misunderstand rationality. Rationality is *for* something – there is no such thing as a pure rationality, as rationality is – at heart – applied.

When I measure out the ground to build a house, I'm being rational. When I take my sick daughter to the doctor, I'm being rational. When I use the double-blind method in a pharmacological study, I'm being rational. When I continue with university work instead of suddenly trying to become a champion athlete at age 34, I'm (most likely) being rational. The woman who believes that she will be hit by a bus unless she moves; does not wish to be hit by the bus; realises that, therefore, she should move; but, none-the-less, declines to move; is not being rational. The paranoid man who has worked out to the tiniest, consistent detail the diabolical conspiracy that everyone else has entrapped him in, is not being rational. The person who has withdrawn into a catatonic state, whatever baroque dreams they may dream, is not being rational.

Beliefs are central to rationality, but only because they stand with the information we gather about the world and the actions we undertake on the basis of that information. The way in which we interact with the world in which we find ourselves is what constitutes rationality. I am sure that my beliefs are full of contradictions, much more so than those of a paranoid man who is constantly seeking to find ways to fit everything into the omnipresent conspiracy, but these contradictions need not become troubling unless they become practical contradictions. It is only when my beliefs invite contradictory courses of action that the contradiction truly bites (and the question of the rationality of the beliefs really arises).

It is in the context of its function of contributing to our viability as organisms that exist within a particular environment, that we should look for a justification for rationality.[8] The justification to be given has to be spelled out in terms of how rationality increases our adaptability, allowing us to remain viable in a broader range of environments. Just like that of other adaptations, its value has to be understood as lacking in foresight – in no way precluding the possibility of our intellect becoming our downfall – this point being the shadow the remains of Hume's problem. Just like other evolved traits, intelligence has a history, its roots reaching back to simple stimulus-response mechanisms such as the chemotaxis exhibited by single-celled organisms or the phototaxis exhibited by plants – all of these actions being epistemic in character.[9] What is more,

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[8] Collier (2000) and in other of his papers.

[9] Plotkin (1994) or Rescher (ed.) (1990).

it ought not to be surprising that the old divide between reason and emotions has to be seen as deeply misleading in that emotions play a vital role in allowing us to act effectively and, therefore, ought to be seen as normally working in tandem with intelligence rather than against it (though the clash of the two is the stuff of tragedy).[10]

The sceptic has nothing to offer in the context of this justification. While the concerns raised by sceptical arguments may be indicative of shortcomings in our understanding of what it means to be rational, the sceptic can not offer a rational stance. This is because accepting a sceptical stance can offer no possible guide as to which actions ought to be undertaken. However, given the naturalist turn, if a stance is divorced from how we decide to act, it turns out to be vacuous.

It may seem that any notion of rationality which is based upon such concerns as our viability as organisms is just as individual to humans as our physical make-up and biological heritage. To some degree this is true as the heuristics to be used by us are highly dependent upon the particular context in which we find ourselves. However, at the same time, it is possible to make some far more universal claims. The reason is that the factors, such as our need to understand our environment in order to act effectively within it, which underlie human reason will also underlie the rationality of any other reasoning being. To see that this is the case, it is necessary to provide a characterisation of reasoning beings. This should be done within the broader context of epistemic agents, i.e. beings that act upon their environment in ways dependent upon their knowledge of that environment – this category containing everything from the paramecium up to humans.[11] This characterisation includes a number of epistemic traits such as the ability to model, at least implicitly and crudely, the environment, the ability to make some manner of observations of that environment and the ability to alter the model of the environment. These, however, give no motivation for epistemic inquiry of even the most elementary sort and have to be wedded to such pragmatic traits as being able to maintain viability in the environment, the ability to alter that environment and exhibiting goal-oriented behaviour in that environment.[12] Underlying the pragmatic traits will be the need

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[10] Damasio (1994) or Evans – Cruse (eds.) (2004).

[11] Campbell (1974).

[12] Talmont-Kaminski (2004).

to maintain autonomy in an environment which is unstable and capable of disrupting the internal states of the epistemic agents.[13]

What is the status of deductively valid arguments, however? Given what has been said about the biological context of rationality, does the traditional view of justification as a relation between propositions have to be abandoned? If true, this would be a very radical, quite possibly self-defeating claim to make: after all, what form should an argument to that effect take? However, there is no good reason to completely abandon validity, rather than just clarifying its significance. To see why, it is necessary to distinguish three ways in which the word 'argument' has traditionally been used.[14] Argument$_1$, most directly concerned with logic, deals with the abstract logical relations between sets of propositions.[15] Argument$_2$ generally speaking concerns the ways in which we explain something to others or convince them to believe in something and to act in some manner. Argument$_3$, most directly related to rationality, is the means we, ourselves, decide to believe in something or to act in some manner – these means not necessarily having much to do with logic, as we have seen. Each of these uses of the term 'argument' deals with a different but related phenomenon, in effect, leading to them being confused. Distinguishing between them allows us to see how they may have diverse justifications. Still, it then becomes necessary to relate them to each other to show, among other things, the relevance of logical relations between propositions to the rationality of beliefs and actions.

The key to relating these three uses of 'argument' is the central role played by truth in each case. In the case of argument$_1$, the essential characteristic of the relation is truth preservation. In the case of argument$_2$, it is of the truth of the conclusion, that we are trying to convince our interlocutors on the basis of beliefs they already accept. Neither arguments$_1$ nor arguments$_2$ reveal, however, why it is that we should be concerned

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[13] Collier (2002).

[14] An alternative way to show the relevance of validity to a thoroughly naturalised position is via a naturalised philosophy of language. This path is pursued in Collier – Talmont-Kaminski (forthcoming).

[15] I do not wish to suggest any particular positive claims regarding the philosophy of logic. In particular, I would not wish to be seen to be forced to accept the existence of abstract objects. All that seems required for my argument is that logic have a substantive objectivity independently of considerations of rational inference – a view I accept but do not argue for here.

with truth in the first place. To understand that, it is necessary to consider again arguments$_3$. For our actions to be generally effective it is necessary that our model of our environment be accurate at least to the degree to which it distinguishes situations in which different actions are appropriate – without that accuracy the effectiveness of our actions will be merely random – this is as true for people as it is for the paramecium that seeks to swim up a sugar gradient. This means that, to the degree that we base our actions upon our understanding of the world we must, on the one hand, seek its truth and, on the other hand, assume it when acting. We can afford to be agnostic about the truth of our beliefs only in so far as they do not direct any action. This immediately explains the significance of truth for arguments$_2$ – others face the same need to base their actions upon accurate models of the environment. In this context, the significance of arguments$_1$ becomes clear. An argument$_2$, to be convincing to the listener, has to begin with propositions that the listener already holds to be true. If the argument$_2$ has the form, or at least the apparent form, of argument$_1$, it will be the more convincing as it will show that the conclusion must be true given what the listener already believes. At the same time, on the individual level, arguments$_1$ play a two-fold role. Most importantly, the avoidance of logical contradictions, though not an absolute necessity, is a sound strategy due to the potential for logical contradictions to turn into practical contradictions. At the same time, logic offers an opportunity to generally understand the relations between the contents of our beliefs, these relations of ideas being significant in much the same way that matters of fact are – anyone who ignores either does so at their own risk.[16] And, I think, Hume would be happy to agree with that.

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[16] Indeed, if one accepts the view I am presenting, relations of ideas turn out to be matters of fact: logical, rather than physical, fact.

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