

The History of Human Reason: Reply to Critics

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Introduction

I haven't seen a book like this one in a long time. It weaves together a series of ideas that many will have thought safely antiquated. For instance, the prelogical mentality of savages; a new recapitulationism—history repeats ontogeny; and the most teleological concept of history since the heyday of “philosophical history” with Hegel, Comte, and Spencer.

Allen 2006

It's a strange feeling, reading a review that says that practically the only good thing about a book is that it is relatively well written, and finding yourself shouting in your head, 'No it isn't, it's obviously very badly written!' Well, it's strange when you are the author of the book in question. However, that was how I felt on reading Barry Allen's review of my *History of Human Reason* (Robinson 2004) in *History and Theory* (Allen 2006). I had the same feeling while reading Jack David Eller's equally negative review in the *Anthropology Review Database* (Eller 2005): how badly I must have written to have made such (mis)interpretations possible. Knowing no more than what these reviewers have to say about it, I for one would not bother to read this book.

However, they *are* misinterpretations: not only did I intend no such conclusions to be drawn from *The History of Human Reason* but I do not believe that they can be reasonably inferred from the text as it currently stands - provided, that is, that it is read as a whole. That is perhaps the single largest problem with *The History of Human Reason*: that it is rather easy, in the present intellectual climate, to draw conclusions from parts of it that are flatly contradicted by the whole. That in turn seems to be the result of the fact that *The History of Human Reason* tries to dig beneath a great mass of well known but very disparate detail to find a new logic underpinning the large-scale development of human reason: an unfamiliar whole is constructed on the basis of mass of familiar parts.

My reply to Allen and Eller's reviews consists of a series of sections, each dealing with one specific criticism. These criticisms are, in brief, that *The History of Human Reason* postulates the following false hypotheses :

- The structure of history recapitulates the development of the child.
- The inhabitants of simply structured societies have simply structured minds.
- Teleology and rationalism, and a disregard for contingency, are appropriate methods for understanding history.

My reply, in summary is that:

- None of the above criticisms is correct - *The History of Human Reason* does not require or argue for any of these hypotheses, none of them is substantiated by these critics and they can all be refuted from the text itself, often with wording that could not be more explicit.
- The criticisms seem to arise from a superficial reading and a failure to treat the work as a whole. In many cases, whole sections of the work would be completely unintelligible were these criticisms correct.
- *The History of Human Reason's* own main theses remain largely untouched by these criticisms. There is nothing in them that contests the propositions that the fact that we

have a history is the product of our intelligence; that history has stages; and that the stages that characterise history are the same as those that characterise intelligence everywhere else, including not only the development of the individual but in many other areas too, from the history of the machine to the forms of knowledge in general.

Both Allen and Eller criticise a good deal more than the above brief list, but in this paper I have taken these to be the most important issues.

Finally, I must confess that *The History of Human Reason* is sometimes characterised by an expansive and occasionally hyperbolic literary style. Although my aims were entirely sober, developing the ideas it reports has been an extraordinary exciting experience, not least because their implications are so great. This has made it easy to adopt a style that sometimes makes it seem touched by a kind of *folie de grandeur*. Personally I do not believe that the text goes quite that far, but reading these reviews, especially Allen's, I suspect that its style has militated against a careful reading of the text, with serious repercussions.

A preliminary question: What shape is intelligence?

Before replying to these criticisms in any detail, I must recapitulate some of the main points of *The History of Human Reason*. They are not criticised by either Eller or Allen, but that seems to be less because they agree with them than they did not notice them. To provide a context for what follows, I repeat them here. I cannot say that, had these hypotheses been recognised, either Allen or Eller would have taken a more positive view of my book, but I do think that they would have found it a lot harder to be quite so negative.

The ultimate purpose of *The History of Human Reason* is to set out a theory of human nature and the human condition that centres on the idea that what makes human beings remarkable is our intelligence. Until the recent massive irruption into the humanities and human sciences of neo-Darwinism and 'cognitive science', this would not have been especially contentious: for at least the last two or three centuries general models of what it means to be human have been dominated, or at least taken for granted, the idea that we are intelligent (and often explicitly rational) beings. Many ancient models seem equally centred on this notion. Of course, there have always been nuances, typically concerned with which specific aspect of our intelligence should be treated as foremost. This might be a specific sentiment such as religiosity, consciousness or social solidarity, or aspects of social structure such as legal systems or class relationships determined by economic interest. Even the regular over-reactions to an overly rationalistic account, such as Romanticism and existentialism, have not denied our intelligence so much as sought to set bounds to its authority, interpret its relationship to the irrational, or emphasised its limitations.

The History of Human Reason tries to step back from this perennial anatomising to see the *corpus* of human activity, organisation and experience in its entirety. Instead of concentrating on this or that aspect of our intelligence, it tries to look at intelligence as such. To do this, it has to depart from most contemporary thinking about intelligence from the very outset. In current thought (scientific and otherwise) intelligence is generally equated with individual cognition. That is, it is all but universally treated as a psychological attribute of individuals. This attitude is hard to explain, given that intelligence's accomplishments include technological and cultural systems that span the planet, social systems that have taken billions of individuals literally millennia to construct, millennia of history that we can span with instant sympathy, economic systems that are entirely outside individual control and threaten the stability of entire ecosystems, and scientific theories of all this to which many generations have contributed. These are not things that are likely to be explained by the actions of individuals, but they are all expressions of our intelligence.

Why then have we assumed that intelligence is essentially an individual phenomenon? Ignoring the vast social and historical conditions and consequences of our collective intelligence is surely the equivalent of treating 'life' as a quality of the isolated organism, and so ignoring (or treating as secondary) the wider features of life in general such as ecology or evolution. Conversely, if the life of the organism can only be understood by taking into account the biological context within which particular organisms live, so even individual intelligences can only be understood by taking account of the full range of social and historical structures and processes through which intelligence expresses and embodies itself. What is more, as we are now well aware, there are levels of evolutionary and ecological structure and process that are wholly irreducible to the nature and activities of particular organisms, even taken *en masse*. Likewise, *The History of Human Reason*

argues that it is impossible to understand the origins, nature and significance of intelligence solely, or even primarily, in terms of individuals. It is true that, just as organisms are the only living things, so, pending the appearance of a genuine artificial intelligence, only individual human beings are actually intelligent; but that by no means entails that intelligence can be understood in such narrow terms, any more than life itself. Social systems are also the product of our intelligence, not only in the familiar sense that social relationships impinge on our individual lives or that all individuals has social sensibilities, but also in the sense that large-scale social systems such as feudalism or capitalism have a structure that is completely irreducible to individual experience and action.

In short, *The History of Human Reason* argues that, to understand human intelligence, it is necessary to understand the structure of human activity at every level, from the sub-psychic to the massively social and historic. All these structures, and not just those operating on the psychic plane, are expressions of intelligence, and the social structures can only be understood by analysing how they exhibit the same logic as intelligence on the psychological plane. This is not because the supra-psychic can be explained exhaustively in terms of the psychic, but because both share the same general logic, which is no more essentially social or psychic than the logic of life is essentially ontogenetic or phylogenetic. The only question is, what is that general logic?

The model of intelligence from which *The History of Human Reason* proceeds is adapted from that of Jean Piaget, the great theorist of 'genetic epistemology'. I must emphasise that this model of intelligence is *adapted* from Piaget, not *adopted*. In starting from this particular model I am not claiming that history is simply individual intelligence writ large. The only reason for starting with Piaget's (superficially) ontogenic model here is that, of all the levels on which intelligence operates, this is the one on which it has been most fully studied - which, given the prevalent assumption that intelligence is a matter of individual cognition, is scarcely surprising. This seems to me to be a reasonable approach, but at the same time I do not think that it implies that I regard everything about intelligence as reducible to individual cognition. After all, Darwin starts *The Origin of Species* (Darwin 1888) with a chapter on 'Variation under domestication', but no one imagines that he saw nature as a giant farmyard.

Indeed, not even Piaget regarded intelligence as essentially psychological. In fact I quote him to this effect in the very epigraph of *The History of Human Reason*: '*il est fort possible que la coordination générale des actions... intéresse aussi bien les actions collectives ou interindividuelles que les actions individuelles*' (Piaget 1966). Piaget always emphasised that his studies of individual development was motivated by the need for any would-be science of epistemology to study the development of knowledge in real people. This naturally has a psychological dimension, but its purpose was still to explain *knowledge*. That is why his account of intelligence is never reducible to psychological terms. On the contrary, it is explicitly and transparently a model of the structure and genesis of knowledge as such, not the psychology of the knower. That is why, when discussing the development of knowledge, science and mathematics on the historical scale too, he was able to do so in essentially the same terms. And that in turn is what *The History of Human Reason* is designed to do, for an even wider range of phenomena.

Neither Allen nor Eller seems to have recognised this distinction (though again, other readers have), but instead assume that I do indeed intend reducing the structure of history to the stages of cognitive development. Eller's reaction is vehement and, on its own terms, understandable:

Robinson tries to build up the world system out of the concepts of 'subject,' 'object,' 'world,' and the 'activity' that adapts and constructs the others. The Piagetian attitude is immanent. However, he ends the chapter with a claim that should make anthropologists gasp: that he sees, and is going to show us, how the major cultural-historical transformations are transitions from one cognitive stage to another. Namely, 'the historical form of the transition from intuitive to concrete reason was the Neolithic revolution...; and that from concrete to formal reason seems to have taken the form of the industrial revolution' (75). If one doubts that he is really serious about this, the ensuing chapters remove all doubt.

If intelligence could be equated with individual cognition, this would of course be preposterous. But even the words Eller quotes does not say that: it refers to reason, not cognition. If the significance of this distinction is not obvious, Allen rightly summarises it in these terms: 'Reason is a force of its own... not so different from what Hegel called *Geist*, the Spirit'. I doubt that anyone would mistake Hegel's *Geist* for individual cognition. If, on the other hand, one accepts my earlier point, that intelligence is the totality of structures of intelligent activity at every level (social, economic, political, ideological, cultural, technological, etc) rather than just individual

cognition, then I'm not quite sure why this should 'make anthropologists gasp'. Does this (as Eller fears) imply the reduction of anthropology to a branch of cognitive psychology? Conversely, is there any reason why there should *not* be a General Unified Theory of the various facets of intelligence activity (social, psychic, and so on)?

The impression that neither Allen nor Eller has noted this basic premise of *The History of Human Reason*, that intelligence has many non-psychic dimensions, is reinforced by Eller's otherwise odd remark that 'His discussion of formal reason takes a strange turn into a critique of capitalism—welcome by some, no doubt, but not really germane'. Why is a critique of capitalism not germane to a general theory of human activity? Is there any more powerful structure of contemporary human activity, both to enrich and to bind? Has any structure of human activity *ever* exercised such overwhelming power? At the same time, doesn't an account of the systematic character of capitalism exemplify how the most powerful forms of intelligent activity operate at a completely different level from individual cognition?

Hence the approach adopted on *The History of Human Reason*, which tries to define a single methodology that is as applicable to social systems and historical epochs as it is to the individual psyche, yet makes no attempt to reduce either to the other. Just as organic life as a whole forms a unified matrix, yet organisms resemble ecosystems and evolution only on the most abstract plane, so individual cognition and history, considered as the product of intelligence, must be linked, but as *The History of Human Reason* itself illustrates, the resemblances are restricted to the most abstract level. Indeed, the text makes explicit the mutual independence of the social and the psychic. For example, Chapter 1, *The Nature of Intelligence*, includes the following:

Given that, for reasons already mentioned, the social and the psychic part company quite early in this history and remerge only at its conclusion, there are in fact two quite different, if tightly interwoven planes and forms of intelligent activity to be produced and superseded by the history of human reason. The social and psychic series are inextricably bound to one another, but never is there any sense in which the social and the psychic can be reduced to one another, the one determines the other exhaustively, or the one provides an adequate model of the other.

Of course, there are interactions between the various facets and levels of intelligence that create shortcuts and obstacles to development, many of which I mention explicitly. Some of these structures, especially complex social systems, are much more extensive, powerful and enduring than others, and create asymmetrical, violent and overpowering relationships, but that is by no means the same thing as a one-sided determination: social determinists, fatalists and reductionists are as misguided as methodological individualists. In fact the whole of the last chapter of *The History of Human Reason* is one long refutation of the reducibility of one aspect of intelligence to another.

Going by these reviews, plainly *The History of Human Reason* does not make these points clearly or compellingly enough. And I suspect that it is largely from my failure to communicate these points that a great deal of these reviewers' criticism derives. But it cannot be said that they are not made; on the contrary, they are made very explicitly. Nor is it easy to see how the book's overall argument can be understood without seeing intelligence in such multi-faceted, multi-dimensional, and above all non-psychological terms. What is the point of explicitly discussing the inconsistencies between the formal heights reached by Aristotle's logic in a social system where so many other structures where demonstrably pre-formal? Or indeed of noting that, whereas Aristotle's logic was the acme of reason for two millennia, nowadays his physics would embarrass a modestly well educated teenager? If there isn't a unitary level of intelligence even inside Aristotle's head, how has either of these reviewers detected the crashing, lumpish annihilation of all distinctions they seem to think is there? Allen's response is that this is simply a fudge - an interpretation that says more about Allen's analysis than about this book.

Does history recapitulate ontogeny?

Eller and Allen agree that *The History of Human Reason* argues that phylogeny (Eller) or history (Allen) recapitulates ontogeny. In Eller's case this is an extremely serious shortcoming:

In this case, the phylogeny of all of human cultural history recapitulates the ontogeny of individual human cognitive development in a manner that will disinterest, alarm, or offend anthropologists depending on how tolerant they are of grand theories from one discipline being fairly uncritically and totally non-ethnographically imposed on our own.

Allen is equally critical, saying that *The History of Human Reason* offers 'the most teleological concept of history since the heyday of "philosophical history" with Hegel, Comte, and Spencer'. I can sympathise with Allen's distaste: this is not the kind of company I would normally want to find myself in.

Which makes it fortunate that, as far as I am aware, there is nothing in *The History of Human Reason* to substantiate these views. It is true that each of the chapters on the stages in the development of intelligence traces the unfolding of both social and psychic levels of intelligence. Perhaps these reviewers are inferring that I meant to equate the two levels from the fact that Piaget's model of intelligence is usually construed as a psychological model. On that basis, I must presumably believe that historical development recapitulates its psychological model, with social and psychic levels of intelligence developing simultaneously.

However, nowhere is it claimed that either that one level drives the other or that social and psychic levels develop in strict parallel. Had there been, it would have contradicted the whole purpose of the book. As I have already argued, Piaget's model is one of knowledge in general, a global function of intelligence with social and historical as well as psychological dimensions (e.g., Piaget and Garcia 1989), and *The History of Human Reason* is designed to extend this model to other areas of intelligence. Piaget worked with developing children because the psychological level of knowledge is easy to tackle experimentally, but none of Piaget's theories and few of his publications are narrowly psychological, and the same model reappears in both his historical, his logical-mathematical and his more strictly philosophical writings. So it is only by virtue of a superficial interpretation of Piaget that my parallel presentation of social and psychological descriptions could be taken to support the assumption that phylogeny or history recapitulates ontogeny, or *vice versa*.

If, that is, that is why these reviewers draw this conclusion in the first place: both treat their conclusion as obvious enough to require no explanation. Perhaps they believe they can read this directly from *The History of Human Reason*. If so, I do not believe that this book can be legitimately interpreted in that way, once the text is understood in its entirety. The basic distinction between social and psychic levels is introduced in the global methodological considerations set out in Chapter 1 (especially pp. 57-61), where it is explicitly noted that the social and psychic levels of intelligence are quite independent. Then in each of the next four chapters the specific social and psychic forms that characterise each successive stage of intelligence's development are analysed in parallel.

This parallel argument may be a cause of some confusion, especially if the assertion that intelligence has independent social and psychic planes is not noticed. In that case, it may be assumed that when I write about the social and psychic aspects of intelligence I am referring to the social sensibilities of individuals rather than the structure of the social system as a whole. Perhaps, despite the endless discussion of industrial development and capitalist economic systems as classic exemplars of (formal) rationality and as the most massive forces in history for human development, Eller and Allen can still only read this discussion of intelligence as reducing all aspects of intelligence to individual cognition. If so, I am at a loss to know what more I need to write to be understood!

An especially unfortunate aspect of how this might then be misinterpreted will be addressed in the next section. But any such interpretation is surely difficult to square with the start and endpoints of the book as a whole: the introductory section on the relationship between the social and the psychic referred to above is complemented by an even more extensive series of arguments on the complexities of intelligence set out in the final chapter. There, not only are various examples of the independence of the social and psychic given but a still more radical hypothesis is argued, namely that *all* aspects of intelligence have their specific developmental trajectory. This is a complicated question that cannot be answered in any detail here, but from the present point of view the implication is perfectly clear: that any derivation of the development of social systems from cognitive structures (or from any theory of cognitive structure) is entirely out of the question.

Applying this distinction hopefully makes it clear why the following kind of criticism (from Allen) is misguided:

He claims that people at the intuitive stage are so deficient in their grasp of space that they have difficulty to 'account for or maintain distances, angles, or even shapes in the face of quite elementary distortions generated by changes of perspective or action' (89). This is a boggling

claim. The neurology that ensures all of these corrections to vision is one of the oldest parts of our brain, and was up and running long before *H. sapiens* came to the age of intuition.

Indeed, at a neurological level it is completely commonplace for a seeing organism to be capable to the various forms of constancy to which Allen refers. But this section of *The History of Human Reason* is explicitly about intelligence's lack of *objective* knowledge and insight of spatial relations and the tendency of a relatively undeveloped to imbue objective relationships with social and subjective elements. It is not about the visual abilities we inherit from our non-intelligent ancestors. Many non-intelligent organisms are capable of considerable *perceptual* constancy, but not of the *cognitive* constancies to which I refer here. This distinction is a commonplace of both cultural anthropology and developmental psychology, and I am astonished by Allen's interpretation.

Much the same applies to this remark of Allen's:

It was boggling again to read that "an entire plan of campaign, with all its estimates and schedules and priorities... is beyond concrete reason" (108); that is, beyond humanity prior to the industrial revolution. The phase of world history in which an "entire plan" is beyond us includes the construction of the Pyramids, the Athenian Acropolis, the ceremonial city of Rome, and the Hagia Sofia and Chartres cathedrals. It seems to me that this can only be true if "entire plan" is given so *ad hoc* and Pickwickian a meaning as to make the claim a tautology...

First of all, nothing prevents a concrete rational *social* system from having many formal rational *inhabitants*, and in the case of societies with clear elites, it is probably commonplace. So it may well be that the *architects* of some of these edifices were individually at a formal level, cognitively speaking, even though the social means needed to build them (essentially methods of joint planning, delivery and organisation) apparently existed in only very simply, informal forms. I would certainly have been surprised if *Hagia Sophia* had gone up on the basis of less individual ability than is implied by formal reason, but that was not the point I was making; rather, it was that a concrete rational social system cannot construct formal systems for its own management, such as systematic site plans for multiple interacting systems, comprehensive budgets, disciplined architectural, design and engineering methods, operational strategies, plans and organisations, or truly formal bureaucracies. As *The History of Human Reason* illustrates at some length, there were concrete precursors of many of these in this period, such as patrimonial bureaucracies (Kamenka 1989) or 'plans' for great cities (which actually consisted of the imposition of religious or mythological abstractions) (Chant and Goodman 1999), but the result remains strictly pre-formal in both form and content.

Under these conditions, an 'entire plan of campaign' is only possible where a competent leader (or a small cadre of able leaders) is in a position to direct the concrete 'tools' at their disposal to a larger end such as a cathedral or a pyramid. It is not provided by the systems and methods provided by such a social system, which is the point I was making. The magnitude and aesthetic glory of an achievement are not an especially good clue as to the sophistication of the underlying social processes: the Great Wall of China required only a concrete technology, economy, planning and resource management processes, and we have no evidence that anything more was ever used. But a microchip requires true formal rational capabilities such as advanced science and technology, formal design and planning methods and tools, engineering, measurement and production control processes of a strictly formal type, and so on. This demands an altogether different - and higher - plane of accomplishment. As for Chartres cathedral, Allen might like to consult Radding and Clark (1992), which illustrates this distinction between the abilities of a society's intellectual elite and the support its social system provided with a detailed analysis of exactly this example.

Likewise for this comment, in which Allen refers to early hominid toolmakers:

The problem is that those forebears were just as grown up as we are. I was reminded of an interesting archaeological find, one that has been fairly well known for most of a century. Achulean hand-axes, stone-age tools of an elegant, highly symmetrical tear-drop shape, made by human ancestors from about 1.5 million years ago, are found with a high degree of standardization in material as different as flint, sandstone, quartz, and lava, and at sites as distant as the African Cape, Madras, and England, over a period of hundreds of thousands of years. The congruence of form is no casual matter, as these materials respond very differently to percussion. More than a million years before Robinson's program allows, hominids (not *sapiens*) were very deliberately and accurately recreating a form in the most heterogeneous materials, in a way that could not have been accomplished without experimentation and a clear idea of the desired outcome, other intellectual qualities Robinson excludes from this stage.

This provokes a number of responses. Firstly, I have never argued that only human beings (i.e., *Homo sapiens*) qualify as intelligent (on the contrary, see p.7 or Robinson 2005), so the apparently telling reference to pre-human hominids is irrelevant. Secondly, I have expressly argued that members of an extremely simple society of the kind all anthropologists believe early hominids possessed are not necessarily simple-minded (see below), so Allen is again confusing individual cognition with social systems. Thirdly, I would never argue that pre-formal cognition excludes a grasp of symmetry, practical experimentation or having a clear idea of a desired outcome, since all three are commonplace of concrete operations. So, finally, the ability to chip stone into regular shapes does not prove that a flint-knapper is 'just as grown up as we are', if this means that it shows that they have achieved the same level of cognitive development as philosophers at McMaster University (Wynn 1979, 2002). Well, I hope it doesn't. In the absence of any plausible evidence one way or the other, I have no opinion about how advanced individual hominids were in any prehistoric period, though I would be very surprised if they often achieved formal operations.

Do the inhabitants of simple societies have simple minds?

Both Allen and Eller read *The History of Human Reason* as saying that the inhabitants of simple societies have simple minds. As Eller puts it, 'Robinson does not reference Levy-Bruhl in his bibliography, but perhaps he is channeling his spirit'. But again, not only is this point never made in *The History of Human Reason* but the text explicitly contradicts it:

But the members of a society whose social structures are intuitive are unlikely to be limited to intuitive levels of cognition. In fact they could not be: childish intelligences could not sustain a society of any kind without the constant support and guidance of much more advanced caretakers. So I have no doubt that cognitive testing of members of Sahlins' 'Stone Age economies' or Levi-Strauss' 'savages' would quickly dispel any idea of simple societies being populated by individuals with simple minds. So does the simple fact that their technology is strictly intuitive, yet they often have a well-articulated taxonomy of literally hundreds of species and are generally sensitive enough to the internal order of their natural environment to avoid over-harvesting or over-hunting it at least as well as we avoid despoiling our more artificial environment. None of these achievements would be open to cognitively intuitive individuals. (p.308)

Nor is this the only place or way in which this aspect of Allen and Eller's reading is contradicted by *The History of Human Reason*. Perhaps the real error is that the above statement comes on page 308, whereas the 'intuitive' stage (the level of intelligence to which Eller and Allen refer) is analysed in Chapter 2, which ends 200 pages earlier. But again, surely a book should be reviewed as a whole, and both the author and the reviewers' audience are entitled to a commentary that accounts for such explicit contradictions to the reviewers' conclusions.

However, the problem goes a lot further than a simple (if completely explicit) contradiction between the text and the reviewers' interpretations. In suggesting that *The History of Human Reason* argues for at least a strong parallelism between social and cognitive complexity, both Allen and Eller seem to ignore a huge range of arguments that emphasise the independence of different aspects of intelligence. Leaving aside the many instances that crop up in earlier chapters, Chapter 7, 'The Bounds of Reason?', is largely about the dissociations between different aspects and dimensions of intelligence. These include the mutual independence of the social and the psychic; the independent development of a variety of non-social, non-psychic structures such as technologies and scientific problematics; and even the possible dissociation within a single individual that places different aspects of their ability at quite different stages of development. For example, 'Aristotle's logic stood for two millennia as a paragon of formal reasoning, yet his physics can be refuted by a pre-formal school child' (p.15). More generally:

Each aspect and product of intelligence is a structure in its own right. An art form, an idea, a belief, a technology, a method, a theory, an institution, an estate or a class, a practice, a value: each has its own necessities, its own possibilities, its own proper logic, its own propensities, its own dynamics, its own internal order, its own residual contingencies. It must therefore be developed in its own right - Nature no more makes leaps here than anywhere else (p.305).

Not that I intend a kind of developmental monadism - *The History of Human Reason* also shows that there is a great deal of interaction and mutual influence between the various aspects of intelligence, not to mention a universal logic that binds them all, so the development of one aspect can be affected by the relatively maturity, specific properties and outright power of the items by

which it is surrounded. But one can never assume a very close correlation between different kinds of structure.

That is not to say that there is *no* connection between social and psychic level. After all, activity and development of all kinds are influenced by their content and context. On the other hand, the development of intelligence is not a naturally imposed fate through which all human beings must pass on some kind of pre-arranged schedule, but rather an activity each individual performs for itself. As a result, it is always more or less sensitive to the conditions in which it takes place, which can influence the specific demands and opportunities for development that arise, the complexity of the social relationships and wider world that any participating intelligence must comprehend, the specific methods (e.g., formal training) for acquiring and organising insight and experience that are available to the individual, and so on.

On the largest scale of all, society is indeed a 'social fact' of sorts: a reality that not only precedes, embraces and transcends every aspect of individual activity and experience but actively constitutes it in a huge variety of profound and systematic ways. It is true that the individual is only influenced by this social content and context to the extent and in the sense that it construes it one way or another; however, there is a fundamental disproportion and imbalance in this relationship. So it would be very surprising if complex societies that not only trained individuals in and routinely required them to exercise a high level of literacy and numeracy but also embroiled them daily in highly formalised systems such as modern bureaucracies did not also find that a high level of cognitive capability was also routinely achieved. By the same token, more simple societies actively demand less sophistication. But they by no means exclude it, and *The History of Human Reason* cites a number of cases where relatively low levels of social complexity are accompanied by reason of the most advanced kind. Perhaps the most familiar example for a western audience is that of classical Greece:

Of course, Greek society and culture as a whole were not formalised in the manner of, say, capitalism - too many of their key features, from their popular religions to the administration of justice and even ancient Greece's vaunted approach to reason and natural science betray a pre-formal order - but large sweeps of the Greek intellect were. (p.163)

Regardless of its extraordinary intellectual accomplishments, classical Greece was in fact a relatively simple society, only recently emerged from tribalism. So how did Aristotle and his fellow philosophers develop anything but equally simple minds? Allen's response is to accuse me of 'fudging' history. I think it is clear that it is not *The History of Human Reason* that fudges history but rather Allen who fudges *The History of Human Reason*.

Nor is this issue limited to simple societies. Despite the ampler opportunities for cognitive development, there is no guarantee that the inhabitants of complex societies will necessarily have complex minds. The evidence on this subject is sparse and contentious (which is why none is quoted in *The History of Human Reason*), but a recent informal discussion of specialists in cognitive development (via the Jean Piaget List, March-April 2006) confirmed the formal cognition is far from universal in highly formalised social systems such as ours. Although Piaget's formal operational stage seems to be the median for complex industrial societies, that is still perhaps as little as 30-35% of the adult population (Kuhn, Langer, Kohlberg and Haan 1977). Given the immense formal systems through which industrial capitalism is structured, this again hardly seems consistent with the view that there is a direct connection between the social and psychic planes of intelligence.

So why would *The History of Human Reason* dwell on this distinction if, as Eller and Allen insist, its principal import is that there is *no* differentiation between the social and the psychic levels of intelligence? Plainly it could not, but it does, and at some length. So presumably *The History of Human Reason* does not imply that the inhabitants of simple societies have simple minds. On the contrary, it makes it quite clear that the relationship between the two sides is never better than indirect. There are many reasons for this, and they are worth dwelling on. I must admit that I did not dwell on them to any great extent in *The History of Human Reason*, but then I did not know that it would be subject to such fundamental misinterpretation.

Firstly, in the simplest societies, personal experience and inter-personal relationships can both be more complex than the social system within which they take place. Indeed, as I have already argued, it is practically impossible in the simplest forms of society for the forms of activity and experience that are available to and demanded from its individual members to be as simple as the society itself. So a social system that is so simple that there are few explicitly articulated relationships (roles, disciplines, rites, relationships, and so on), which *The History of Human Reason*

describes as an early form of 'intuitive' social system, could not possibly be effective if its inhabitants were cognitively intuitive too. They would, as Eller rightly argues, have the minds of toddlers and small children. This is an impossible basis for any social system. But that is exactly what *The History of Human Reason* itself says (p.308, quoted above)!

Secondly, there are many paths to development, especially the development of the most general and abstract capabilities that provide human beings with their greatest power and knowledge. These can be arrived at by any number of routes. For example, it may be that maths classes are a good way to drive the development of formal cognition, but it by no means the only one. Learning to construct electronic circuits, with their elaborate gate logic and (to the outsider) curious inversions of relationships and partitions of effects is another. Working in a formally structured organisation bound by formal rule, technique and procedure, may also be a good method, though only if the formality of its processes and objectives is explicit. None is perfect, but all lead to the same general outcome. Likewise, it is perfectly possible that members of a quite simple social system should arrive at more complicated cognitive capabilities.

On the other hand, although an organisation may be formally structured as a whole, it is likely to contain plenty of niches where applying a simple practical rule or procedure to a more or less fixed empirical content and context is all that is required. This is of course the very definition of concrete operations. It is even quite possible that a fair proportion of jobs could be carried out at a pre-concrete level. In other words, as well as there being many channels to development, there are many niches where activity leads not to change and development but rather goes round and round in circles for years, if not decades and centuries, on end. In addition, formal systems are of course very good at reflecting on themselves. That is why they can be explicitly designed, taught, maintained, improved, in a way that concrete operational 'systems' cannot (or at least, not by concrete rational individuals). That is why there is at the moment a strong trend towards simplifying how people engage with formal systems - 'plain English' campaigns, step-by-step instructions, graphical user interfaces, and so on: it takes a lot of formal reasoning to arrive at a really concrete interface.

From the point of view of cognitive development, this has the paradoxical effect of ensuring that comprehension of the whole is unnecessary for a successful performance. The corollary of this is that, just as a simply structured society is unlikely to be inhabited solely by cognitively somewhat undeveloped individuals, so a formally structured society need not be exclusively inhabited by individuals who are spontaneously capable of formally structured thoughts and ideas. After all, the demand for formality in a social system such as industrial capitalism is a demand upon the system as a whole or by key elements of it only, but not generally upon the individuals who operate it. But that does not detract from the idea that, broadly speaking, a complex society affords both more opportunities and more obligations to develop psychologically.

Thirdly, there are many occasions for individuals to act at a higher level than is required by the prevailing social system. As I have already noted, Aristotle and his contemporaries were able to construct intellectual systems on a cognitive level that substantially exceeded the sophistication of the surrounding social systems. But their ability to do this was not unlimited. Rather, their strictly formal accomplishments were focused on areas such as geometry, mythology and logic that are accessible by narrowly intellectual means, by discourse between individuals or perhaps a patch of dust and a pointed stick. In areas such as physics, Aristotle's views were demonstrably sub-formal. This is because, as *The History of Human Reason* argues at some length (p.315ff), solving the latter kind of problem requires the development of means (e.g., experimental apparatus, quantitative methods, clocks, and so on) that were simply unavailable in a society of such limited technological capabilities.

I hope the reader will understand now why I find it hard to understand how Allen and Eller could conclude that *The History of Human Reason* propounds the idea that 'savages' have simple minds. Surely the many examples it gives of cases where this is not the case were enough? Or was the assumption that intelligence equates to individual cognition so seductive that that was all I could possibly have meant, regardless of the many examples that point in precisely the opposite direction? Certainly that seems to be true for Allen, who cites some these very examples as something between intellectual sleight of hand on my part and failing to see that my own examples contradict my argument.

Teleology, rationalism and contingency

Allen's interpretation of *The History of Human Reason* also addresses a much higher level of argument: that of the philosophy of history. As everywhere else he finds *The History of Human Reason* severely wanting. In particular he takes issue with what he regards as its teleology, its rationalism, and its disregard for contingency. As everywhere else, his analysis is mistaken.

Historical teleology

Allen claims that *The History of Human Reason* presents 'the most teleological concept of history since the heyday of "philosophical history" with Hegel, Comte, and Spencer'. I am not sure in what sense *The History of Human Reason* is supposed to be teleological. As far as I am aware, it exhibits none of the vitalism, design, mentalism, functionalism or other symptoms of teleology, and it certainly does not argue that history has a goal that explains its course or towards which it is inexorably moving. It does suggest that history is the sum of everything intelligence has done and that, as the product of intelligence, it has a structure that, left to its own devices, would take it through predictable stages in a definite direction. But that no more justifies his accusation of teleology than, if I claimed to be able to predict where a dropped brick will fall, he could legitimately say that I must believe that the brick has a goal.

There is a kind of teleology in *The History of Human Reason* of a quite different (and I hope inoffensive) type. As intelligent beings, we are able to plan and map out our future actions, taking into account various kinds of obstacle, including human foibles, and quite often end up quite near where we intended. If that is teleology, then millions of people do it every day - everyone who has ever said 'I think I will go home now', or planned (or just intended) to do something, or striven to maintain a value, or performed any of a million other normal human actions. I would add that, the more developed intelligence becomes, the easier it finds it to do this, partly because the insight and experience available to a more developed intelligence are naturally greater, and partly because the prior development of human intelligence as a whole has created a world of economic, political, scientific and ideological ideas, institutions, systems and geographies that ensures that the forces that in a less developed period would have been insuperable are deflected, nullified and even co-opted to intelligence's purposes. But if that's teleology, it surely isn't something I need to worry about. On the contrary, it is so basic to human activity that a theory of history that ignored it would be even more lacking than Allen claims *The History of Human Reason* is.

(None of this explains how intelligence acquired such talents, of course; for that readers should consult Robinson (2005), though they should be warned that they won't find any teleology there either: just an entirely respectable (though innovative) application of Darwinism.)

Historical rationalism

Allen is particularly scathing about what he regards as *The History of Human Reason's* rationalism. Again I am not sure what he means by this. Allen does suggest a number of symptoms, but as far as I can tell *The History of Human Reason* suffers from none of them. Here is an example:

Robinson calls it a 'basic premise' of his argument that Piaget overlooked a step, that 'there must be a yet higher, post-formal stage in the development of intelligence' (206). Must be, because the alternative is intolerable to reason. It would be irrational to leave reason stranded in paradoxical, abstract formality. It would be wrong, and ought not to happen. So it won't. This elegant reasoning is the core of all rationalism. Reason requires it (whatever), therefore it is, must be, even if there's no 'merely empirical' evidence.

The reason I actually give for why there will be a post-formal stage to the development of intelligence is that formal reason (the predominant mode of contemporary intelligent activity, organisation and experience, including its scientific methods, its bureaucracies, and so on) is a victim of the classic conflict of thought with thought and of thought with things (p.23 n.5). Basically, its unprecedented powers notwithstanding, formal intelligence is full of contradictions, which has always been the basis of past development. As there seems to be little reason to think that these particular contradictions are insoluble, it seemed reasonable to try to think through what might happen next. This is what *The History of Human Reason* does, with a long and very detailed explanation of how the next stage might come about, including some evidence that this is a practical, if risky, proposition. *The History of Human Reason* never argues that a higher stage must happen because any failure to do so would be 'intolerable to reason'. If there is anything that *The History of Human Reason* argues is 'intolerable to reason', it is the suggestion that the

contemporary level of reason (whatever it is) is fundamentally flawed or it might soon be superseded - the very opposite of what Allen claims. This is after all the other meaning of 'rationalisation' - to cover up failures and omissions with pseudo-rational arguments, and *The History of Human Reason* covers this topic in Chapter 7. The problem is more that, formal reason is simply unsustainable, both internally and externally, but there seems to be little reason why intelligence should not supersede its current limitations and mistakes by much the same process as it has in the past. This has nothing to do with rationalism.

(Incidentally, Allen offers no reason for thinking that the solution *The History of Human Reason* offers is incorrect - except that he simply can't believe it. This is a curious response for a professor of philosophy, about which more will be said later.)

One corollary of this approach is that, far from being guilty of rationalism, *The History of Human Reason* rejects the idea that rationality is as stable as it seems to be, and that its future forms may well be as remote from formal reason as formal reason itself is from magic. This is not an idea that Allen (who seems to be wedded to formal reason - a symptom of rationalism, I would have thought) can accept. Hence, I suspect, his rejection of my suggestion that the paradox Gödel discovered at the heart of arithmetic is a sign of formal reason's inconclusiveness, not an ineluctable limit on reason as such. From this I infer that the translation of formal reason onto a yet higher stage will resolve this difficulty through the synthesis of systems. Allen replies (as I understand his argument) that this ignores the fact that any such system of systems will be as incomplete as any of its precursors, and in any case my 'solution' relies on an entirely hypothetical future solution for which we have no evidence. The latter argument is valid, but I am not sure what alternative there is: what would empirical evidence of the future look like? As far as the former argument is concerned, however, Allen's riposte misses the point. I have not suggested that a sort of 'even higher' higher mathematics will resolve the limits of mathematics as we currently understand it. Rather, I suggest that the incompleteness Gödel so convincingly saw in formal mathematics exists because of the isolation of mathematics from intelligence's other systems of knowledge and action. When that isolation is resolved (through my projected dialectical systematisation of systems), it may be that Gödel's incompleteness theorem will fall away. This will not be because mathematics taken in isolation suffers from no such limit, but because mathematics ceases to be taken in isolation.

On the other hand, there *is* a sense in which *The History of Human Reason* does offer a rationalistic account of history. As I have already said, the book assumes that history is the sum total of everything that has been done by intelligent beings, and that it is only by virtue of our intelligence that fundamental historical notions such as heritage and lineage are possible. A non-intelligent being would be incapable of apprehending other subjects as subjects (and *a fortiori*, as *fellow* subjects) or of appreciate that objects are organised into a meaningful world that places one in social and symbolic relationships with other subjects, past, present and future. On the other hand, for any intelligent being such relationships are not merely natural but inherent in the very nature of intelligence (Chapter 1).

The corollary of this argument is that, at least at the highest levels of abstraction, all aspects of intelligence will share a single developmental logic that is consistent across the full gamut of intelligent structures - social, psychic and otherwise. Although any resemblances between such radically different aspects of intelligence are likely to be limited to an extremely high level of abstraction, they are likely to include, on the one hand, the basic structures of intelligence (which I suggest are subject, object and world) and a basic developmental process. Although the only really compelling example we have of the latter is that of the development of individual cognition, I believe that *The History of Human Reason* enough evidence for its application to social, historical, cultural, technological and other aspects of intelligence to treat this as a serious hypothesis.

At the same time, if such a developmental logic constitutes a programme, *The History of Human Reason* is still no more rationalistic than any other theory that assumes that there is a structure to things, and that if that structure is able to function unobstructed then it would be possible to say where it was going. It happens that intelligence is unique in the radicalism and universality of its particular programme, and that naturally raises doubts, but allaying those doubts takes up a good deal of *The History of Human Reason*. If the sequence is wrong then no one will have any difficulty coming up with counter-examples. But once the complexities of the developmental process are acknowledged (and I accept that they are considerable), I do not believe that either Allen or Eller has shown that the sequence is incorrect.

This notion of a single developmental logic brings me to an aspect of *The History of Human Reason's* apparent rationalism that Allen seems to find especially offensive: my claim that 'The development of reason makes no appeal to external forces of any kind'. Only by being taken completely out of context could this possibly be taken to imply that, as Allen puts it, 'It's as Ishmael Reed wrote in *Mumbo Jumbo*, it *jes grew*'. Like any other structure, the development of intelligence is largely determined by an internal logic that defines it as that structure. As far as the development of intelligence is concerned, the control exercised by this very abstract logic is complete, at least at the highest level, to the point where only a certain sequence is possible. It is also true that the sense in which intelligence takes external forces and factors into account depends wholly on the sense and extent to which it construes them, but here too the same could be said of any material structure whatsoever, from a sub-atomic particle to an ecosystem. And as I put it in the very next few sentences:

That is not to say that biological conditions in which intelligence develops make absolutely no impression or that there is something immanent in reason that ensures its successful completion of a predetermined programme. On the contrary, without a pre-intelligent infrastructure and substrate, intelligence would be as impossible as an organism without a chemistry - whatever that might mean! Similarly, with no empirical opportunity to act, intelligence would simply wither away. But by the same token, almost any opportunity to act suffices for the development of intelligence, and so does almost any organic substrate and infrastructure that is capable of supporting sensorimotor reflexes and the rudiments of sensorimotor development. (p.285-286)

And of course, the corollary of the previous argument, that the development of intelligence depends on having opportunities to develop, also points in exactly the opposite direction to Allen's conclusion. As ever, there is nothing in *The History of Human Reason* to suggest that intelligence unfolds in a manner that is completely oblivious to anything but its own logic, and I am not sure how Allen could have arrived at any such conclusion without ignoring whole swathes of argument and example.

In sum, *The History of Human Reason* presents a 'rational' model of history - a 'program' as Allen describes it - only in the same sense that the theory of gravity presents a 'rational' model of attraction, or indeed any other model that assumes the existence of interacting structures. If it is not interfered with, a falling body falls in a straight line, because the law under which it acts results in a linear motion. In practice, almost nothing falls in a straight line because almost nothing is not interfered with as it moves, so this is very hard to see. So one could well say of Newton's theory of gravity, as Allen says of one of *The History of Human Reason's* most important conclusions, 'I could see how he got there, respect the reasoning, ... while at the same time wondering to myself, *how could anybody really believe that?!*' In fact, if science relied on such a simple model of believability, it is hard to see how one could ever end up recognising that empirical reality is a synthesis of many structural components that, left to their individual devices, would present a very different picture. Indeed, it took genius of the calibre of Kepler, Galileo and Newton to see this. All that *The History of Human Reason* suggests is that, left to *its* own devices, there is a similarly rigorous yet flexible logic and 'program' controlling how intelligence develops. So why, three and a half centuries after Newton, is it problematic to suggest that, notwithstanding the supreme messiness of the world, there is a simple logic behind it?

Contingency

Yet another aspect of *The History of Human Reason's* to which Allen takes grave exception is what he takes to be its disregard of contingency. This follows directly from his misplaced accusation of rationalism: 'It is predictable that a rationalist won't tolerate contingency, explaining it away as mere appearance'. So presumably anyone who not only tolerates contingency but insists on it is not a rationalist. What then is the significance of a developmental process that is vulnerable to any number of limitations and constraints and may come out in any number of forms, if not that they are subject to a high level of contingency? This point is made more than once. For example:

In fact it is extremely difficult to circumscribe the contingent: after all, what is there outside the realm of pure abstractions such as logic and mathematics that is not contingent to some degree? Isn't some degree of contingency intrinsic to the concrete? Indeed, isn't there a powerful case for seeing logic and mathematics themselves as necessary for us but contingent on the conditions of human existence (at whatever level), and so as contingent in themselves? (p.199)

Or again, when speaking about the limits of formal reasoning:

...it does not really know what 'human' means, but instead seeks the abstract, the formal, the immutable, and so on – all those things a real human being is not. (p166)

Indeed, whatever the consistencies in the development of intelligence as such, they could not determine an individual's personality or a society's cultural qualities in any but the most general manner. What is more, until the overall development of intelligence (on any plane) is completed, contingency from intelligence's point of view is not simply a matter of not understanding what is going on (although a gradually receding ignorance naturally plays a large part in its activity and experience). Each of the four chapters on the developmental stages (Chapters 2-5) details aspects of existence, including intelligence's own activity, organisation and experience, that intelligence is not only unable to comprehend but over which it exercises no power whatsoever and which it has no means of identifying, organising or controlling in any sense. These forces, events, and so on are truly contingent, not simply in the sense that intelligence does not understand them but also in the sense that they come out of the blue as contingently as the most random event. For example, when discussing Europe's disastrous 14th century, with its massive demographic collapse and then plague, I concluded that:

...feudalism was chronically lacking in effective command of its context. It was not that it lacked the practical power to do the job; it simply had no idea what the power it needed was, and no means of obtaining it even if its leaders had been able to make a good guess. So even at this level there remains a deep residue of irrationality at the heart of reason.

True, I go on to argue that the subjective forms of contingency (ignorance, immaturity, pathology, and so on) that plague formal reasoning (most importantly, the simple actuality of things) can be overcome by raising cognition to a higher level, and that the objective contingency of things can be radically reduced. But that does not at all imply that contingency is imaginary or merely a simple failure of comprehension. It implies only that it can be mastered.

As for contingency within intelligence itself, Allen quotes *The History of Human Reason* as follows:

From Gilgamesh to the Winter Palace, 'all these societies—the societies that make up the bulk of written history to date—are indeed characterized by a single logic'.

In other words, the relentless logic of intelligence squeezes every possible contingency out, leaving a single uniform society at each stage. An arresting thought, and I recognise the quote as mine, but unfortunately not the context into which Allen places it. Whereas Allen's interpretation is clearly that five thousand years of social systems is bound by a single iron logic and reducible to just four kinds of society (one for each stage), the only mention of either Gilgamesh or the Winter Palace in *The History of Human Reason* is in the context of an explicit contradiction to just this kind of analysis, where I say of this sort of argument that:

At the very least it implies that practically the whole of human history from Gilgamesh to the Winter Palace can be explained by a single concept. This is a proposition that, were I confronted with it for the first time, I would not criticise but simply laugh at...

Or again:

Even more advanced forms of intuitive social and political organisation, such as 'Big Man' societies, though clearly verging on regular structure and organisation, still rely on the personal powers and charisma of individuals to coordinate and direct the activity of society as a whole, especially in war, trade and inter-clan and inter-lineage politics. They are still vulnerable to the whims and vicissitudes of personality...

Conversely, while a recognised Big Man may wield recognised powers, his tenure is informal and limited by personal performance, not by any notion of birthright, legitimate authority or social contract. Furthermore, in contrast to the pre-defined and inherited status, office and powers of the highest forms of intuitive polity (the chiefdom), a Big Man's position depends on personally amassing the necessary resources and following. (p. 94-5)

This sound very contingent to me, and certainly not reducible to cognitive status or stage. More generally:

Explaining so many social systems in terms of concrete reason no more implies that all such societies are somehow 'the same' than the Piagetian claim that everyone can be (broadly) located at one of a small number of *cognitive* stages implies that all people have pretty much the same *personality*. Likewise, one should certainly expect considerable differences between Hopewell, Babylon, republican Rome and Tsarist Russia.

Or yet again, there is the constant threat of irrationality erupting from within rationality itself:

History is often portrayed as a tale told by an idiot, as a comedy of manners concealing an inner core of folly, cunning, bestiality and darkness. Although this interpretation scarcely seems to square with the present account of history as the progress of reason, not only are these views compatible but any account of the progressive development of reason positively predicates a history of unreason as its corollary... So if history is the history of reason, for most of it there must be significant vestiges and dark pools into which intelligence can neither see nor reach, where 'unreason' prevails by default. At some point, in trying to deal with these aspects of existence, intelligence will be forced into some kind of ultimately non-rational compromise, from idiosyncrasy and pragmatism or convention or eclecticism to a savage impulse to force the world into an acceptable shape by the most violent means. (p.327)

Likewise, the text refers repeatedly to the different forms of uncertainty to which the different stages of intelligence are vulnerable, and so on.

Whether all this is contingency in the sense that Allen requires is another matter. If Allen's definition of contingency requires that history be made up of (or at least be constantly interrupted by) events and phenomena that have no causation or structure whatsoever, then he is welcome to his idea of contingency but I cannot think of any reason why not allowing for it should be regarded as a shortcoming. His claim that 'Everything in modern science confirms the stochastic, indeterminate, contingency-ridden nature of physical events' is one-sided to say the least: one could just as well say that everything in modern science confirms the enormously structured nature of events of all kinds, especially *human* nature. After all, the principle forms of human science - anthropology, psychology, economics, sociology, and so on - are all products of 'modern science'. Of course, contingency, uncertainty and indeterminacy have received all the press, but if they were truly universal then the only possible outcome would be chaos. We can only tell that such things as indeterminacy arise because of the deterministic context within which they take place.

At the same time, if it is the case that modern science confirms the stochastic, indeterminate, contingency-ridden nature of (some levels or aspects of) physical events, then a completely rational grasp of that fact would simply recognise this fact and work through its implications. There is nothing in *The History of Human Reason* that requires that the world be radically deterministic at every level; only that, to the extent that it is, it is recognised as such, and to the extent that it is not, then that is recognised too. *The History of Human Reason* is optimistic about how far this can be taken, but expressly notes the limits set by quantum indeterminacy. It is not a shortcoming in reason that something cannot be known or mastered; only to imagine that it can when it cannot - or *vice versa*.

In the mean time, the argument that is actually put forward in *The History of Human Reason* is that a good deal of history consists precisely of human beings 'rationalising' the less irreducible contingency of the physical, chemical and biological (not to mention intelligent) dimensions of the world around us. Whether one considers agriculture, medicine, science, technology or any of a hundred other changes and advances, this is surely about as trivially obvious a generalisation about history as one could want.

Is *The History of Human Reason* merely stupid?

Finally, these reviewers make a few simple but important errors that imply that *The History of Human Reason* is not just wrong but stupid - an altogether greater deterrent to potential readers. I hope the reader will bear with me while I get a couple of these off my chest.

Just 400 million years to go

400 million years. That is how long, according to Allen, *The History of Human Reason* predicts it will take to complete the development of intelligence. If so, then I am impressed by my truly visionary talent for prognosis. But unfortunately I am not blessed with quite such godlike foresight: what *The History of Human Reason* actually says is:

And our ability to comprehend finite amounts of structure, no matter how large, is surely not in question. Given the progress we have made in four centuries of serious science, it seems short-sighted to imagine that any finite set of structures that may determine how the universe works will not be understood in, say, the next four million centuries - a timespan that would itself take us less than one per cent of the way to the universe's earliest expected end. My own expectation

is that it will all fall into place a little sooner than that - four more centuries, perhaps four millennia, is probably a little closer.

I don't think I have to explain the discrepancy or the point of this comment, but I would say that, if I read a review where a book was said to make such a ridiculous claim, I would have to have very compelling reasons to go on and read it: an author who was capable of such nonsense would almost certainly be wasting my time. I wonder how many people have decided on the strength of this single claim of Allen's that *The History of Human Reason* is not for them? Perhaps Professor Allen would like to hazard a guess.

Capitalism saves the environment

Allen has an equally radical interpretation of my view of the future. After a certain amount of stress and strain, all will be well. Guaranteed. As a 'clear-thinking, clear-writing rationalist, with a rationalist's trademark enthusiasm for following [my] assumptions to their uttermost implications', I apparently believe that capitalism will save the day. Guaranteed. The impending ecological crisis will not engulf us, and all will be well. Allen is incredulous, and I am guilty of 'freshman Economics'.

I found it especially interesting that I am supposed to have said all this, given that I expressly argue that capitalism is not capable of pursuing anything other than its own interests - 'not social agreement, not moral right, not technical efficiency, not environmental sanity, and certainly not human need' (p.176) - except when it is able to exploit them to make a profit. I would also have thought that the approving section on Karl Marx in the Introduction would have signalled a fundamental scepticism towards capitalism's pretensions, but apparently not. I do argue that capitalism is likely to go a long way towards learning to manage the environment (though only because, in Willie Sutton's apocryphal words, that's where the money is), but I then add that the very process or subordinating profit to such ends would lead to the elimination of capitalism itself:

Of course, the more entrenched capitalism becomes, the easier its ecological impact will be to identify and criticise. Even now it is so large as to be inescapable. However, the greater the sheer scale and intensity of that impact becomes, the harder it will be to develop less harmful methods of carrying out elementary ecological functions such as feeding, protecting ourselves from natural disaster or just keeping warm, without simultaneously deranging the basic economic mechanisms without which capitalism in its cruder forms cannot operate. (p.206)

In the long run it will even raise the question of whether the commodity relation is itself a fundamental obstacle to the consumer's ultimate pleasure, and whether the role of 'consumer' is a suitable vehicle for human satisfaction. (p.210)

In fact I go on about this at some length, so I assume I must have written that part spectacularly badly for Professor Allen to have misconstrued it quite so completely. So much for the 'clear-writing rationalist'. It is true that I have nothing much to say about what comes after capitalism, except an analogous kind of resolution of contradictions through which capitalism replaced feudalism. On the other hand, if Professor Allen thinks this is freshman economics, then they are teaching something quite radical in McMaster's Department of Economics.

So why does Allen believe that I think capitalism will save the day? I suspect that it is because he finds it impossible to let go of the idea that I am a rationalist, and prefers to deduce his conclusions from that 'fact'. For example:

You've got to admire the logic in a passage like this: 'The larger the scale of capitalism itself, the larger the proportion of the natural environment it incorporates directly within itself and the more forcibly it is obliged to acknowledge and attend to the ecological systems it engages' (214). In paraphrase: what needs to happen to save us will happen, because otherwise we wouldn't be saved, and that's irrational. Too bad for reason, one wants to say.

I can't see how the latter follows from the former. I would have thought that the quote from *The History of Human Reason* was little more than a statement of the obvious: the greater the extent of industry, state apparatuses, globalisation, the greater the impact we have on the environment. But it implies nothing at all about whether we will manage to do anything about it. The logic of capitalism is one thing, but there is no guarantee (least of all in *The History of Human Reason*) that it has a happy ending. On that topic, this is what I actually say on the very next page:

Just how far ... capitalism can take this process is another matter. In all likelihood it will only be up to the point where the conjunction of economic, ideological, political and scientific crises

drives us to take the next step [beyond capitalism]. Again, this is not out of any special respect for or awareness of any higher rationality: formal reason is entirely capable of destroying Nature, and so itself, first. (pp.215-216)

More freshman economics, of course.

Conclusions

And so on. And, unfortunately, on and on.

I do not really know why *The History of Human Reason* has been interpreted as Eller and Allen have done, given how explicitly and how often it says the opposite. I would emphasise that I am not alone in being surprised at their conclusions. However, given that both Eller and Allen are respectable academics who have taken the trouble to write serious reviews, it is hard to say where the problem really lies. I have the impression that the book made both these reviewers very angry very early on, which coloured their approach to the point of ignoring critical elements of the book as a whole. On the other hand, at times the results seem more like a stampede of *bêtes noires* than a critical but objective analysis of *The History of Human Reason*. In a way I can understand this, but I cannot see that such anger is ultimately justified or that the resulting reviews do anything but misrepresent this book.

Of course, this does not relieve the author of the responsibility to be as clear as possible, and there are many ways in which *The History of Human Reason* could have been a lot clearer. It is striking that neither Eller nor Allen seems to have identified any substantive mistakes in *The History of Human Reason*, which is encouraging, but at the same time I do not really feel that either of them has engaged with its core arguments either. I assume that, like any long, complicated book there are plenty of mistakes in it, including (hopefully minor) mistakes in its central propositions; but reviews conducted in this temper are unlikely to unearth them.

Finally, I would like to recall what happens to books that are substantially misreviewed: by and large, they sink without trace, regardless of their objective merits. I suspect that Allen and Eller have gone some way towards ensuring that *The History of Human Reason* shares this fate. I do not know how many good books have met this fate: more, I suspect, than is good for science, for the academy and for our culture as a whole.

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