The 'Biological Turn' in History Writing[i]

Josh Patel*

Department of History, University of Warwick
*Correspondence: joshua.patel@warwick.ac.uk

Abstract *In recent history writing, there has been an acceleration of interdisciplinary projects drawing from life sciences, a movement which has been identified as a 'biological turn', taking perspectives from diverse fields such as biology, evolutionary psychology, and neurobiology to provide insights into traditional written sources. While this provides numerous new understandings, current use of life sciences is often uncritical. I argue that the biological turn in history writing uses life sciences not to create challenging insights, but to make naturalised claims of human behaviour, and carries with it the current epistemological and socio-political preferences for economically and politically 'useful' scientific knowledge. Yet the claims of the biological turn are proposed as divorced from any political context. This is at best naïve, and delegitimises alternative sources of knowledge production. Such an approach has serious implications for writing history, undermines the programme of the history of science, and should be challenged in order to assist in the creation of more helpful and introspective knowledge when engaging with interdisciplinary material. In this review article I argue that the biological turn is an unsatisfactory response to the linguistic turn, and discuss the political and institutional implications of the current uncritical usage of life sciences in history writing.*

Keywords: History, Biology, Biological Turn, Linguistic Turn, History of Science, Interdisciplinary

Peer review: This article has been subject to a double blind peer review process

Introduction

Since the 1990s there has been attraction in academic and popular history writing to a number of disciplines which can roughly be grouped together as life sciences, including human biology, Darwinism, neurobiology and evolutionary-psychology, a move which has been described as a 'biological turn' in history writing. The biological turn seeks to use the insights of these disciplines to explain culture and society across a 100,000-600,000-year history. Such an approach is appealing to many in the historical establishment, including the medieval historian Daniel Lord Smail and the cultural historian of France Lynn Hunt. Lorraine

Daston in her interview in this edition of this journal briefly noted the potential insights of 'paleogenetic evidence'. The biological turn has provided new perspectives ranging from the role of food in human societies to the destiny of civilisations and is an attractive option when written sources are scarce. History writing has a long tradition of borrowing from the insights and methodologies of other disciplines to help construct narratives and provide new perspectives, and the biological turn would seem a perfectly reasonable direction for history writing to move.

However, historians should be cautious of the current direction of the biological turn. I argue that the biological turn does offer genuine insights and provocative challenges to current history writing practices, including highlighting the lingering eurocentrism of a focus on the written word and an extension of the Subaltern project. However, much of the literature of the recent biological turn lacks critical engagement with its source material and methodologies. It often instead appeals to objective, universalist language derived from life sciences to affirm current socio-political assumptions rather than provide any new challenging insights, and makes naturalised claims of human behaviour. Many of its arguments cannot be substantiated by the evidence provided. Appeals to life sciences are often rhetorical. The absurd number of serious and ironic 'neuro-' prefixes, buzzwords and pejoratives suggests a 'neuromania' on both sides of the debate.[ii] 'Unable to persuade others about your viewpoint?' asks 'professor of cognitive neuropsychology' Keith R. Laws. 'Take a Neuro-Prefix – influence grows or your money back' (**Lilenfeld et al, 2015: online, para. 72**). The deployment of scientific jargon as shorthand for 'objective truth' is problematic. As physicist Richard Feynman wrote: 'Scientific knowledge is a body of statements of varying degrees of certainty – some most unsure, some nearly sure, none absolutely certain' (**1989: 245**). This is not always appreciated in the biological turn and ignoring it undermines the programme of the history of science to study science as culture. We find ourselves, the sociologist John Law remarks, 'in the domain of an ontological politics' (**2007: 601**). History writing gains little from the current uncritical state of the biological turn, as historical critique is replaced by a truistic reflection of current biological understandings of humanity.

This article will firstly offer tentative suggestions to the intellectual and popular context of the biological turn in history writing and consider wider epistemological movements, in the hope that this might offer a substantial critique of its methods and explore potential future pathways to better inform interdisciplinary study for general historians. It will then proceed to review the contributions made by the biological turn and the concerns of its critics in history writing, focusing on the relationship

between Smail and the evolutionary psychologist Robin Dunbar. To wider readers in other academic disciplines in sciences and humanities, I wish to provide one perspective from history writing of the impact of the success of science communication over the past three decades. I hope to stress the utility and strength of historical critique in interdisciplinary discussion, and provide a counterweight for suggestions from writers such as Steven Pinker and Brian Massumi that 'the humanities need the sciences … for their own conceptual health—a lot more than the sciences need the humanities' (**Massumi, 2002: 21**).

The Intellectual and Popular Origins of the Biological Turn

The origins of the biological turn lie in the linguistic turn and its implications for history writing. Deference to life sciences is often justified as an attempt to move beyond postmodern limitations keenly felt in history writing since the 1980s. The impact of postmodernism has been described as a 'comprehensive demolition job' on western orthodoxies, and fundamentally alters what it means to create knowledge:

> Knowledge is deemed questionable, and it is no longer the job of philosophy to provide it. The human subject is dispossessed until it seems to no longer exist (perhaps it never did), and its philosophical corollary, humanism, is unmasked as a form of covert oppression. Narrative logic is broken down […] The notion of the "real world" is permanently encased in quotation marks, and even such an (apparently) uncomplicated matter as sexual difference is rendered illegitimate and misleading, while newer, more difficult ways of theorizing gender are opened up. (**Sheehan 2004: 21**).

Postmodernism reveals 'the hubris of wordmakers who claim to be makers of reality' (**Toews, 1987: 906**). For many, this critique paralyses the creation of historical knowledge. Historian of science Roger Cooter cites a personal email correspondent who argued that with the rise of poststructuralism 'traditional structures within history as a discipline specifically, and the humanities more generally, simply no longer seem to provide useful or pertinent insights', then 'the task now is […] to figure out how to produce such knowledge' (**Cooter, 2014: 150**).

To overcome the postmodern challenge, one route to creating new knowledge is articulated most clearly in the pragmatism of the philosopher Richard Rorty, who proposes 'edification', the 'project of finding new, better, more interesting, more fruitful ways of speaking […] to aid us in becoming new beings'. This allows both an acknowledgement of the concerns of postmodernism and an investment in whatever

programme that is most fruitful and which can 'aid us'. However, Rorty's solution offers no set direction for edification and therefore no definition of usefulness. The role of knowledge creation is 'poetic' (**Rorty**, **1979: 360**). Rorty's edification allows for various, conflicting definitions of 'useful' and what useful projects might be. 'Fruitful', I argue, has therefore been understood as most productive and useful to the individual creating knowledge. Simultaneously, postmodernity has dismantled the boundaries of Cartesian dualism between humanity, animal, and the environment. Disciplinary boundaries, particularly between the sciences and humanities, become more porous, and insights and criticisms can be exchanged. The biological turn therefore can realise Michel Foucault's proposition of the figure of 'man' as balanced between 'epistemological regions' of economics, biology, and philology, and 'if those arrangements were to disappear as they appeared, then one can certainly wager that man would be erased, like a face draw in sand at the edge of the sea' (**1970: 387**). The dialogues created through edification and the collapse of disciplinary distinctions produces an ongoing dialogue between postmodernism and 'useful' producers of practical knowledge in empiricism, generating ongoing debate and new perspectives. 'The tides of psychological and sociological reductionism', as the historian John Toews conceives, rather than being damned with the rise of poststructuralism continue to flow (**1987: 906**).

For many proponents of the biological turn in history, life sciences provide 'useful' knowledge in the wake of the postmodern challenge. Hunt, writing in the *American Historical Review*, argues that neuroscientific resources offer 'new approaches to such perennially vexed issues such as agency, experience, action and identity', 'the mind, the self, and human behaviour' (**2014: 1576**). Similarly, the art historian Barbara Stafford in *Echo Objects* argues that new neurobiological insights could challenge 'traditional cultural assumptions' in the arts, cultural and literary studies (**Stafford, 2007: 175–176**).

Science in Culture, as Culture

Extrapolating claims based on or made by scientific conclusions is, however, often problematic. Throughout life sciences, difficulties lie in the sheer volume of understandings produced, disagreements, obsolescence, the vast amount of which is unknown, and concerns over publishing practices articulated by John P. A. Ioannidis in the widely referenced 'Why Most Published Research Findings Are False' (**2005**). Law argues that 'the largest part of the world is: messy, unknowable in a regular routinized way. Unknowable, therefore, in ways that are definite and coherent.' Social scientific theory is by nature reductionist and

unable to fully represent 'reality'. Despite this, Law highlights the tendency of methodologies of social science to provide an unrepresentative normativity of their subjects by repressing 'the very possibility of mess' (**2007: 595**). The psychiatrist Salley Satel and the psychologist Scott O. Lilenfeld point out that in neuroscience tools such as fMRI (Functional Magnetic Resonance Imaging: a technique to measure brain activity by monitoring blood flow) can only prove correlation in brain function and not any form of causality (**2013: 16**). Extrapolations of conclusions often do not take into account experimental design when drawing conclusions, and statistical analysis is never value free. The clinical neurologist Peter J. Whitehouse poses the question – 'how have epistemological traditions encouraged scientists and journalists to display diametrically opposed images to make their point? […] How often have neuroimagers been frank about the challenges of reliability associated with their techniques?' (**Whitehouse, 2012: 206**). This criticism does not attack scientific enquiry but highlights the need to be critical of the production and articulation of scientific knowledge. The problem lies in the refusal to recognise or the ignorance of the politics of knowledge production.

The history of science studies 'science in culture as culture', contrary to claims of objectivity in the production and application of scientific knowledge (**Cooter, 2014: 147**). A large body of historical writing has explored the Victorian Liberal and Malthusian context that informed Charles Darwin's Evolutionary theory and the bourgeois mantra 'survival of the fittest' which reciprocated and defended capitalist society by gerrymandering the definition of 'fittest' back to fit social and imperial elites. The palaeontologist and historian of science Stephen Jay Gould explores science as culture in *The Mismeasure of Man* (**1989**) in the reification of intelligence in nineteenth- and twentieth-century America to delineate who should be allowed to reside and breed for the good of the state. More contemporaneously, once key advisor to Tony Blair's Labour government Matthew Taylor has launched a 'social brain' project, to ensure social policy is informed by the latest findings from the 'neuro-lab'. The writer and clinical neuroscientist Raymond Tallis points out that Taylor's findings are just 'common sense' conclusions, for example that 'schoolchildren work better if the school feels part of a community', which did not need a 'lick of neuroscientific paint' to prove (**Tallis, 2011: 9, 278-279**). Hillary and Steven Rose have argued that 'Radical science' reciprocated the ideology of the 'new right' of the 1980s. 'The technosciences and today's neoliberal political economy are not separate entities: they are coproduced'. There are obvious parallels between evolutionary psychology's individualism, determinism, and competitiveness and neoliberal discourses. Rose and Rose argue in

Britain today, the promises of neuroscience engage with the public in ways that emphasise 'self-reliance, aspiration and the will to succeed'. Neuroscientific insights are used to explain social failures and poverty by locating it in faults of children and their parents rather than institutional failings or 'unrestrained capitalism' and support further dismantling of the welfare state (**Rose and Rose, 2016: 5, 152-154**). Science reciprocates moral and political beliefs. By reapplying political and cultural beliefs under the objective vogue of science, the biological turn naturalises and self-confirms that cultural and political dimension.

Life Sciences, Politics, and Popular Science

If scientific evidence is perceived problematically in much of the history of science, why does the biological turn possess such an attraction to many historians? The 'biological turn' cannot be understood as an isolated intellectual phenomenon and must be related to wider cultural understandings of human nature. Historians themselves cannot be considered non-participants in popular culture and wider epistemes. Since the 1990s, parallel to the postmodern turn, there has been a significant rise in popular science and science communication evidenced in the huge popularity of authors and celebrities such as Richard Dawkins, Steven Pinker, E. O. Wilson, Matt Ridley, and Jared Diamond. These authors, writing for popular audiences, often operate outside rigorous academic criticism and present human nature as biologically determined, a belief which has been described as amounting to 'Biologism' or 'scientism': an 'attractive secular superstition' (**Casper, 2014: 131**). While easily dismissed (there is considerable silliness, as the historian Richard Hamilton (**2008: 113**) points out, in 'saying that W. S. Gilbert had an evolved propensity to write musical comedies or that politicians have an evolved propensity to dissemble'), it has long been a concern of critics that this knowledge lends support to agendas which are objectionable politically, or morally concerning.

Using science to explore potential new directions of enquiry in old subjects is not new or limited to academic history writing. In popular science, Robert Wright in *The Moral Animal* (**1996**) asks 'Can a Darwinian understanding of human nature help people reach their goals in life?' 'Can it help in deciding which goals are worthy? That is, does knowing how evolution has shaped our basic moral impulses help us decide which impulses we should consider legitimate?' Wright emphatically believes that it can (**Wright, 1996: 10**). Wright's optimism is misplaced if we believe that science reciprocates political and moral understandings – using them to define 'goals' and 'morality' is therefore self-confirming.

The malleability of scientific evidence supports a range of contradictory political agendas outside of history writing. Capitalism is 'grounded in assumptions about human nature', 'that are far more realistic than their competitors', argues the political scientist Francis Fukuyama (**2002: 106**). According to the journalist Matt Ridley, communism failed because it attempted to place an imagined universal human community above what Ridley argues is a natural human instinct to put family above others. Karl Marx 'designed a social system that would only have worked if we were angels; it failed because we were beasts'. Socialism, Ridley argues, is incompatible with human nature as formed by evolution, though chimpanzees with highly authoritarian social structure would be more suited to it. 'If we are to build back into society the virtues that made it work for us', Ridley writes, we should 'reduce the power and scope of the state.' (**Ridley, 1997: 259, 264)** Science writer Marek Kohn disagrees, and argues that evolutionary psychology has 'already identified as key themes fairness, co-operation, differences of interest between the sexes, and equality. Those who want a fairer, more co-operative and less unequal society should gain confidence about what is possible as they become used to handling tools that sociobiological studies make available' (**Malik, 2000: online, para. 20-26**).

This malleability of scientific evidence is particularly acute in neurobiology and evolutionary psychology. Randy Thornhill and Craig Palmer in *A Natural History of Rape: Biological Bases of Sexual Coercion* (**2000**) received widespread criticism for arguing that rape is a natural adaptive strategy by which otherwise unsuccessful males propagate their genes. They support this claim by drawing on examples of forced sex among animals despite the rejection by mainstream socio-biology of anthropomorphising the forced sex by mallard ducks or scorpionflies. Their claims attracted broad rebuttal as gerrymandering the definition of rape and comparisons to animals as being unhelpful in a non-human context both because of difference in practices of forced sex and forced sex among animals occurring with fertile females. This is not the case with human rape, involving women of non-reproductive age, male rape and other forms of rape. Instead the naturalisation of rape allows Thornhill and Palmer to propose under certain conditions all men are 'potential rapists' and advocate compulsory anti-rape training for men to control their 'evolved' propensity, and stress responsibility of women to appear 'unattractive' in order to avoid 'situations conducive to rape' (**Thornhill and Palmer, 2000: 179, 181, 198-199**).

Jim Penman produces astonishingly bad science and history in his *Biohistory* (**2015**) in pursuit of nationalist and eugenicist agenda. Drawing together 'history, cross-cultural anthropology, and zoology', Penman's research covering animal behaviour, physiology and epigenetics' has

'confirmed key aspects of his theory' in 'peer-reviewed journals' (**Penman, 2015a: online, para. 3**; **Penman, 2015c: online, para. 3**; **Penman, 2015b: 4-8**). The book received media coverage in the 'Science News' of *The Telegraph* bearing the headline 'Britain 'is experiencing the same decline as Rome in 100BC' in the decline of 'genetic temperament' (**Knapton, 2015**). Penman's argument rests and draws inspiration from new ideas in the study of genetics of 'Epigenetics', whereby the environment has an impact on what genes are expressed, as opposed to exclusively genetically deterministic models of 'hard' inheritance. Penman's presentation of epigenetics is at best simplistic, arguing that the 'personality of Adolf Hitler' and the 'Versailles Treaty' initiated a 'permanent epigenetic change' that made infants born at the end of World War One 'more aggressive' and once they 'reached their early twenties they bought about amore militaristic tone to society which helped launch another war' (**Penman, 2015b: 3-4**). Penman's 'scientific' conclusions are extrapolated from research in calorie deficiencies in rats, which can hardly be usefully expanded to human society, let alone universally as Penman claims. Penman challenges his opponents 'and there will be many,' to 'do the science and prove us wrong' (**Penman, 2015b: 604**). Yet regardless of the scientific merit of his research, his use of 'scientific' 'peer reviewed' research is entirely rhetorical. Penman was praised in racist and white-supremacist journals such as *The Occidental Quarterly* and *Mankind Quarterly*. Penman's work amounts to little more than cultural pessimism using the objective rhetoric of scientific study to naturalise and bolster its claims.

That such directions towards deference to life sciences from popular writing to academic history writing are occurring contemporarily suggests related and underlying causes, beyond simply the challenges of postmodernity, including funding arrangements and the political climate, an area which is 'undertheorized so far' (**Meloni, 2016: 7**). An exploration of the causes of this epistemological shift requires further study. The remainder of this article will return to the biological turn and its consequences for history writing within this wider socio-cultural climate.

The Biological Turn in History Writing

Hunt uncritically acknowledges the methodological problem of borrowing from life sciences, remarking that critics have accused those using neuroscience of 'looking for a universalizing, anti-representational and anti-intentional ontology to bolster their claims' (**Hunt, 2014: 1576**). Yet the rhetoric of Hunt and others is to use neuroscience precisely as an 'appeal to authority' – an objective other which confirms. The strength of the authority possessed by the culture of neuroscience and scientific

community is demonstrably readily abused. Tallis cites a study where undergraduates given results of fictitious studies were more likely to judge results based in the forms of brain scans rather than as bar charts or words as of high scientific merit (**Tallis, 2011: 280**). If the conclusions drawn from neurological resources and other biological sources cannot fully substantiate arguments made, then their inclusion in historical and other narratives can only be seen as rhetorical. Such an understanding is critical in the biological turn, which produces narratives and histories which are not recognised as implicitly political. It is irrelevant that the knowledge produced in the biological turn's account remains 'empirically unproven' or 'untrue' if they are 'useful'.

The pervasive influence of contemporary understandings of human nature and 'popular science' epistemologies in history writing can be explored through the relationship between the writings of Dunbar and Smail. The evolutionary psychologist Dunbar writes for both academic and popular audiences and Smail is perhaps the most prominent example of a historian attempting a project of history writing actively using life sciences to provide new insights rather than only engaging in methodological and theoretical debate.

In *A Pelican introduction: Human Evolution* (2014), Dunbar asks 'What is it to be human (as opposed to being an ape)? And how did we come to be that way?' and concludes that the human evolution has been a story of finding 'novel solutions to the problems of social bonding and nutrient demands of large bodies and brains' resulting in 'a complex series of adjustments to the basic hominin physiological, social and cognitive design' (**2014: 3, 344**). Dunbar uses paleoanthropological methodologies: social group sizes, mating preferences, eating habits, and energy requirements of primates and monkeys to predict the behaviour of early hominids, in the absence of communicative documentation historians typically reply on. This is then paralleled with other factors in human and primate bodies, which Dunbar extrapolates to form hypothetical conclusions about the character of biological and social life of the earliest hominid species and anatomically modern humans, often supported with contemporary anthropological evidence. Dunbar argues that the body, humans, and the brain as objects of evolutionary pressures have come about to secure the survival of the organism and the replication of its genetic material universally dictates human behaviour (**Dunbar, 2014: 332-335**).

Dunbar's conclusions are cited and expanded by Daniel Lord Smail in *On Deep History and the Brain* (**2008**) and with Andrew Shyrock and others in *Deep History: The Architecture of Past and Present* (**2011**). In the chapter 'Bodies' Shyrock and Smail locate culture as an evolutionary

adaptation. Hormones 'dopamine, and serotonin, along with oxytocin' are produced by grooming, which encouraged social cohesion in early hominids. 'Mirror neurons', cells in the brain which activate when one animal perceives another animal performing the same action. These are activated during laughter, language, and gossip, which functions to the brain as 'grooming at a distance' prompting the same hormonal response. Social bonding through 'grooming at a distance', Shyrock and Smail argue, has led to the development of more complex human social lives, human emulation and eventually culture itself. The result is that human communities are 'not just ideas' but communities bound by 'the capacity of brains to connect over space' – the idea of 'distributed bodies'. With human bodies forming 'a bridge between the present and deep human time', such an insight has significance for 'both ancient and modern political communities'. This 'may generate a new approach to political science in which power' is located in 'the adroit manipulation of the nervous system of others' through 'bread and circuses' (**Shyrock and Smail, 2011: 58-66**). Such an extrapolation from evolutionary psychology creates a system that provides answers to all questions concerning the human sciences, humanities, and arts through portraying culture as an evolutionary adaptation.

New Insights of the Biological Turn

The biological turn does provide new insights and criticisms of history writing. The biological turn points towards the continued expansion of human historical agency. The focus on deep time overcomes what Smail describes as the 'unwillingness' of history to accept humanity's 'deep history' as not just biology or anthropology. This entails the rejection of a narrative which still begins, Smail argues, at the Garden of Eden secularised as the rise of civilisation 6000 years ago. There is implicit Eurocentrism remaining despite abandoning the Genesis chronology. The 'sacred was deftly translated into a secular key: the Garden of Eden became the irrigated fields of Mesopotamia, and the creation of man was reconfigured as the rise of civilisation' and written sources. Challenging the notion of 'prehistory' further challenges the abstract 'humanity' of history writing and challenges essentialist concepts of progress and history. By questioning these assumptions Smail argues that this extends the subaltern project and attacks the idea of 'Palaeolithic stasis' of prehistorical humans. Few would deny historicity to the Incans, 'to Great Zimbabwe, or to the illiterate slaves and peasant societies of past and present merely because they failed to generating writings', Smail argues. Paleolithic towns and villages with populations numbering in the thousands strongly suggest complex political structures do not require

writing (**Smail, 2008: 1-4**). As Colin Renfew puts it in his 2012 review of *Deep History,* Smail and Shyrock set out to rediscover the 'mute inglorious Miltons in the Palaeolithic era.' (**Renfew, 2012: online, para. 11**)

The dominance of written documentation in history is therefore severely problematised in the biological turn, rendering 'suspect the claim that writing has a catalysing effect on culture' (**Smail, 2008: 4**). To achieve its aim to expand historical agency the biological turn embraces interdisciplinary cooperation, responding to the criticism that history is often accused of being oblivious to scientific understanding of their subjects. Smail and Shyrock's volume draws together a broad number of fields from history to anthropology, linguistics, primatology, genetics, and archaeology. This allows the biological turn to draw on the resources of everyday material life, 'tools, containers, structures and objects' rather than a narrow focus on writing (**Amato 2014: 1101-1102**). It allies itself with the appreciation of consumption, oral testimony, and social memory. By dismantling the lingering Eurocentrism in historical practice and by willing to enquire into new historical source material, and expand agency, the deep view offers a global narrative of shared origins, purpose, and membership of a whole human species.

Smail's argument of the Eurocentric nature of historical enquiry is extremely pertinent. However, his proposed solution to instead draw from life sciences does not resolve his original criticism that historical methodologies of enquiry into the past are coloured by their European intellectual socio-political environment. It instead reflects contemporary socio-political concerns and epistemes which value science as creating 'useful' knowledge. Smail, Cooter argues, 'utilizes the tools and findings of neurobiology as if they were value free and not already bleached by the ideologies and the normative and epistemic virtues of the scientists involved' (**Cooter, 2014: 152**). Smail's and Dunbar's work undermines the understanding of science as culture, perpetuates uncritical understandings of scientific programme, and only contributes a self-confirming, naturalising echo of socio-political beliefs. The project was mistaken if it thought genuine access to the past might be possible through any methodology. Similarly, Hunt never engages with criticism that neuroscientific resources cannot be entirely un-problematically universal and objective: 'These debates notwithstanding […] recent developments in neuroscience can stimulate new ways of thinking […] just by shaking out new metaphors that help us make sense of human identity and action' (**2014: 1576-1568**). Knowledge production is never as innocent as Hunt hopes. Her argument amounts to admitting that even if neuroscientific evidence used is unsubstantiated, the agenda it supports warrants exploration without any introspective criticism.

The Ramifications of Knowledge Produced in the 'Scientific' vogue for History Writing

There are concerning consequences of producing history in this 'scientific' vogue. It delegitimises historical knowledge as a means by which it is possible to understand what it means to be human, and replaces it with biology. As the sociobiologist E. O. Wilson argues, 'sociology and other social sciences, as well as the humanities, are the last branches of biology' (**1975: 4**). But rather than providing new insights, the biological turn makes truistic claims. This produces a biologically deterministic world of 'posthumanism' in which power 'interpreted as the adroit manipulation of the nervous system of others' as proposed by Smail and Shyrock in a fully deterministic system provides little room for agency and informs nothing new of how this power was experienced or operates in culture (**2011: 65**). The task of the posthumanist historian would be, and is, complicit in producing knowledge providing self-confirming accounts of a biological definition of humanity rather than its critic. By explaining in a 'scientific mode' rather than through historical analysis, Smail, Shyrock, and other 'biohistories' lack 'places, actors, and their intents' as eyewitness descriptions of contexts are more or less inaccessible. There are no 'beginnings, developments, turning points, decisive moments, and culminations', as Joe Amato laments in his review of *Deep History* (**2014: 1103**). Providing positivistic answers instead provides a contingent law constructed and appealed to for political purposes.

The least convenient of the strengths of historical critique is demonstrating the historical contingency of biological knowledge which is otherwise 'useful'. 'Conference organisers, journal editors and referees, and grant-giving bodies […] don't much care for the vague, the imprecise, the multiple', Law notes (**2007: 603**). Hillary and Steven Rose concur: 'Increasing corporatism in universities is hostile to dissent, and controversial ideas that might stir thought are unwelcome' (**Rose and Rose, 2016: 4**). Yet the scientific project is, returning to Feynman, a 'satisfactory philosophy of ignorance' (**1989: 248**). Humans are 'biological beings, and under the purview of biological and physical laws. But we are also conscious beings with purposes and agency, traits the possession of which allow us to design as to breaking the constraints of biological and physical laws' (**Malik, 2000: online, para. 15**). However, 'we have at present no conceptual framework within which to consider such an ontological peculiarity' (**Malik 2006: 170**). Gould suggests that much of the capacity of the brain may be 'consequences of structural design, not direct adaptations' giving rise to a 'terrifying array of additional capacities – including […] most of what makes us human' (**Gould, 1996: 361**). But this is not as useful for a deterministic, naturalising, and therefore politically potent narrative. It is more 'useful' to sidestep these difficulties

as Steven Pinker does when he argues 'our incomprehension of sentience does not impede our understanding of how our mind works', rather than provide no 'useful' knowledge at all. (**Pinker 1997: 147-8**).

It is not just that biologism challenges but that it supplants alternative sources of understanding. The popular author Sam Harris in *The Moral Landscape: How Science Can Determine Human Values* (**2010**) completely ignores almost all philosophical and historical literature on the relationship between facts and values, claiming that he does not wish to engage 'more directly with the academic literature on moral philosophy', he explains in a footnote, as he is 'convinced that every appearance of terms like 'metaethics', 'deontology', 'noncognitivism', 'antirealism', 'emotivism', etc. directly increases the amount of boredom in the universe' (**Harris: 2010: 111**). *The Moral Landscape* reached ninth in *the New York Times* Hardcover Nonfiction Best Sellers list in 2010, demonstrating the popularity of such an understanding. Cooter fears that '[i]n a context in which biology is taken as *the* way to understand the self, who needs historical study as a means to an end?' (**2014: 148**). Knowledge that cannot contribute to a useful programme is dismissed and the benefits of these methodologies forgotten or delegitimised.

Conclusion

'Historians have long been allergic to physiological forms of explanation,' Hunt laments, 'so it seems unlikely that many will be eager to jump in the bandwagon of neuroscience or neurohistory' (**2014: 1576**). Opposition perhaps seems contrarian. Is this a bitter retort to history's loss in the 'two cultures' war, now systems of knowledge production no longer favours historical critique?[iii]

The objections I have raised do not come from a position of disciplinary partisanship. The primary problem, I have argued, is not that knowledge produced by the biological turn utilises the insights of life sciences. Instead, the problem is that the new knowledge produced by the biological turn is construed as simply objective, and not politically, socially, and economically useful rhetoric. The attempt to move beyond the linguistic turn by the biological turn gets nowhere. Incorporating life sciences and other interdisciplinary sources without the same degree of criticism and caution as other sources, particularly the written sources, is to lose sight of the purpose of critical history to 'unveil such contemporary enchantments' (**Cooter, 2014: 154**). The history of science has demonstrated that scientific progress does not entail or enable moral process, that the dialectics of the Enlightenment linger pertinently, and that the Holocaust 'remains a ghost at our feast' (**Ignatieff, 1999: online,**

para. 23). Gould concludes *The Mismeasure of Man* with the personal tragedy of Doris Buck Figgins, unknowingly sterilised by having her Fallopian tubes severed, which was justified because she was identified as an 'imbecile' by 'scientific' intelligence testing in Virginia (**Gould, 1996: 365-366**). But Smail misses the point when he concedes that '[o]ne is free to object to the idea of applying biology too freely to history and to raise the spectre of a time […] when some historians considered it vital to explore the emergence and spread of the "master race"' (**Smail, 2007: 11**). Without carefully acknowledging and interrogating any knowledge we produce for the socio-political purposes and contexts it was created in and perpetuated by, we only maintain an echo chamber.

Introspection is required in the biological turn, and historical critique has repeatedly been offered and demonstrated to be an exceptional tool for assisting in this. Moving forwards with interdisciplinary practice calls for even 'deeper', multilateral collaboration. The biological turn has so far proven itself uncritical, engaging unreflectively in politics with bad science and producing fairly optimistic narratives of shared human origins to the naturalisation of fascistic and racialist theory. It entirely fails to recognise itself as allegory. To challenge this, and engage in more introspective interdisciplinary history writing, there is consensus. Smail notes that in the future 'historians will have to become more scientifically literate, and biologists and physiologists, many of whom have ceased to be historically minded, will have to learn to think again with history' (**2007: 73**). The remedy Law prescribes is to '[e]at your epistemological greens' (**2007: 595**). Otherwise the current biological turn is part of a wider direction which, as Tallis summaries, is 'not only bad science and bad philosophy – bad enough – but also bad for humanity' (**2011: 9**).

[i] This article is based on work previously submitted to the University of Warwick in support of the author's undergraduate degree. This is the first time it has been submitted for publication.

[ii] The prevalence of the 'proliferating prefix' has not gone unnoticed (Rose and Rose; Whitehouse stands as 'A Clinical Neuroscientist' looking 'Neuroskepitically at Neuroethics in the Neuroworld'). I shall include a list of my own encounters here: neuroaesthetics, neurobiology, neurochemical, neurocognition, neuroculture, neuro-determinism, neuroeconomy, neuroeducation, neuroethics, neuro-evolutionary, neurohistory, neurolaw, neuroliteracy, neurology, neuromania, neuromarketing, neuromythology, neurophilosophy, neurophysiology, neuropolitics, neuropretentions, neuropsychoanalysis, neuroscience, neurosexology, neuro-times, neurotrash, neuro-truistics, neuro-turn, neurotypical and probably many more. This is to exclude all the other academic and pseudo-academic fields surrounding the neuro-debate (to add another to the list) including big history, bio-history, the biological turn, biologism, Darwinism, deep history, evolutionary-psychology, neo-Darwinism, the neurobiological turn, positivism, scientism, sociobiology, and so on. I have chosen to primarily use 'the biological turn' as it encompasses a large swathe of academic and popular writings in history while retaining a focus on the significance to history writing and implicating it in a wider historiographical context. To describe the scientific fields the biological turn draws on, it was suggested to me to use 'life sciences' for its broad coverage of many of these disciplines and their methodologies, a term I gratefully adopt.

[iii] The Two Cultures is a (false) dialectic often drawn between the sciences and humanities and originating in Charles Percy Snow's *The Two Cultures* (**1959**). Snow laments the mutually incomprehensible outlook of natural scientists and 'literary intellectuals' (which have roughly been equated with the sciences and humanities more generally). Snow argued the mutual suspicion and hostility fostered between the two cultures prevented the sciences, as humanity's best hope in meeting humanity's basic needs, moving towards a better future. The literary intellectuals were 'natural Luddites'. Ironically, today as I have demonstrated, with the supremacy of what are now described as STEM subjects in funding, employability, and utility, the sciences are perceived preferentially in popular and academic epistemes, and the humanities appear to have taken a backseat.

References

Amato, Joe (2014), 'Deep History: The Architecture of Past and Present', *Journal of Social History,* 47 (4), 1101-03.

Casper, Stephen T. (2014), 'History and Neuroscience: An Integrative Legacy', *Isis,* 105 (1), 123-32.

Cooter, Roger (2014), 'Neural Veils and the Will to Historical Critique: Why Historians of Science Need to Take the Neuro-Turn Seriously', *Isis,* 105 (1), 145-54.

Dunbar, Robin (2014), *A Pelican Introduction: Human Evolution*, London: Pelican Books.

Feynman, Richard P. (1989), '*What do you care what other people think?': further adventures of a curious character*, London: Unwin Hyman.

Foucault, Michel (1970), *The Order of Things: An Archaeology of the Human Sciences*, London: Tavistock Publications.

Fukuyama, Francis (2002), *Our Posthuman Future: Consequences of the Biotechnology Revolution*, New York: Picador.

Gould, Stephen Jay (1996), *The Mismeasure of Man,* London: Penguin Books.

Hamilton, Richard (2008), 'The Darwinian cage: Evolutionary psychology as moral science', *Theory, Culture & Society* 25 (2), 105-26.

Harris, Sam (2010), *The Moral Landscape: How Science Can Determine Human Values*, London: Free Press.

Hunt, Lynn (2014), 'The Self and Its History', *American Historical Review* 119 (5), 1576-86

Ignatieff, Michael (1999), 'Asecent of Man', *Prospect*, 45 (10), https://www.prospectmagazine.co.uk/magazine/michael-ignatieff-the-enlightenment, accessed 22 April 2017

Ioannidis, John P. A. (2005), 'Why Most Published Research Findings are False', *PLoS Medicine* 8 (2), http://doi.org/10.1371/journal.pmed.0020124, accessed 22 April 2017

Knapton, Sarah (2015), 'Britain 'is experiencing same decline as Rome in 100BC', *The Telegraph*, 26 April 2015, http://www.telegraph.co.uk/news/science/science-news/11562374/Britain-is-experiencing-same-decline-as-Rome-in-100BC.html#disqus_thread, accessed 17 April 2016.

Law, John (2007), 'Making a Mess with Method', in Outhwaite, William and Turner, Stephen P. (eds.), *The Sage Handbook of Social Science Methodology*, London: SAGE, pp. 595-606.

Lilienfeld, Scott O. , Katheryn C. Sauvigné, Steven Jay Lynn, Robin L. Cautin, Robert D. Latzman and Irwin D. Waldman (2015), 'Fifty psychological and psychiatric terms to avoid: a list of inaccurate, misleading, misused, ambiguous, and logically confused words and phrases', *Frontiers in Psychology*, 6 (1), http://journal.frontiersin.org/article/10.3389/fpsyg.2015.01100/full, accessed 15 April 2016.

Malik, Kenan (2000), *Natural Science* http://www.kenanmalik.com/essays/natural.html, accessed 14 April 2016.

Malik, Kenan (2006), 'What science can and cannot tell us about human nature', in Robin Headlam Wells, Johnjoe McFadden (eds.), *Human Nature: Fact and Fiction*, London: Bloomsbury, pp. 164-83.

Massumi, Brian (2002), *Parables for the virtual: movement, affect, sensation*, Durham, NC: Duke University Press.

Meloni, Maurizio (2016), *Political Biology and the Politics of Epistemology: Science and Social Values in Human Heredity from Eugenics to Epigenetics,* London: Palgrave Macmillan UK.

Penman, Jim (2015a), *Biohistory Explained.* https://www.biohistory.org/biohistory-explained/, accessed 22 April 2017

Penman, Jim (2015), *Biohistory*, Newcastle upon Tyne: Cambridge Scholars Publishing.

Penman, Jim (2015c) *The Research.* http://www.biohistory.org/the-research, accessed 17 April 2016.

Pinker, Steven (1997), *How the Mind Works*, New York: W. W. Norton.

Renfrew, Colin (2012), 'Bridging the Millenia, review of Deep History: The Architecture of Past and Present', *American Scientist*, 100 (1), http://www.americanscientist.org/bookshelf/pub/bridging-the-millennia, accessed 15 April 2016.

Ridley, Matt (1997), *The Origins of Virtue: Human Instincts and the Evolution of Cooperation*, New York: Penguin.

Rorty, Richard (1979), *Philosophy and the Mirror of Nature*, Princeton: Blackwell.

Rose, Hillary, and Stephen Rose (2016), *Can Neuroscience change our minds?,* Cambridge: Polity.

Satel, Sally, and Scott Lilienfeld (2013), *Brainwashed: The Seductive Appeal of Mindless Neuroscience*, New York: Basic Books.

Sheehan, Paul (2004), 'Postmodernism and philosophy' in Steven Conner (ed.), *The Cambridge Companion to Postmodernism*, Cambridge: Cambridge University Press.

Shyrock, Andrew, and Daniel Lord Smail (2011), *Deep History: The Architecture of Past and Present*, Berkeley: University of California Press.

Smail, Daniel Lord (2008), *On Deep History and the Brain*, Berkeley: University of California Press.

Stafford, Barbara (2007), *Echo Objects: The Cognitive Work of Images,* Chicago: Univ. Chicago Press.

Tallis, Raymond (2011), *Aping Mankind, Neuromania, Darwinitis and the Misrepresentation of Humanity,* Durham: Acumen.

Thornhill, Randy and Craig Palmer (2000), *Natural History of Rape: Biological Bases of Sexual Coercion,* Massachusetts: MIT Press.

Toews, John (1987), 'Intellectual History after the Linguistic Turn: The Autonomy of Meaning and the Irreducibility of Experience', *American Historical Review*, 92 (4), 879-907.

Whitehouse, Peter J. (2012), 'A Clinical Neuroscientist Looks Neuroskeptically at Neuroethics in the Neuroworld' in Melissa M. Littlefield, and Jennell M Johnson (eds.), *The Neurosceintific Turn: Transcisiplinarity in the Age of the Brain*, Michigan: The University of Michigan Press, pp. 199-215

Wilson, E. O. (1975), *Sociobiology: The New Synthesis,* Cambridge, Mass.: Belknap Press of Harvard University Press.

Wright, Robert (1996), *The moral animal: evolutionary psychology and everyday life,* London, Abacus.

To cite this article:

Patel, J. (2017). The 'Biological Turn' in History Writing. Exchanges: The Warwick Research Journal, 4(2), 280-297. Retrieved from: http://exchanges.warwick.ac.uk/index.php/exchanges/article/view/138