Big Data, Cognitive Biases, Horror Tropes, and Think Tanks: The Future of Historiography between Bold Cross-disciplinary Experiments and Scientific Reductionism

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Abstract: The present introduction is designed to offer a quick walkthrough of the various scholars' contributions to the present issue of the *Journal of Cognitive Historiography*. Among the articles included, two are related to our Extended Open Call for Papers on the topic of "Toxic Traditions: Pathological and Maladaptive Beliefs, Biases, and Behaviours throughout Human History", i.e., an analysis of the maladaptiveness of theistic beliefs in the Anthropocene and a neuroanthropological examination of the ancient cult of Cybele and Attis. Other articles cover the presence of religious-based cognitive biases and logical fallacies in Scottish philosopher Thomas Reid's works and the neurocognition of the Stoic silent prayer as recorded by Roman philosopher Seneca. An entire section is dedicated to the critical discussion of both method and theory of Seshat: Global History Databank. The issue also includes a thought-provoking and interdisciplinary conversation on horror studies, a précis, a commentary, and four cutting-edge book reviews. The background to the topic of the call for papers is herein available as an appendix.

Keywords: Anthropocene; Big Data; Cognitive Historiography; Religious Studies; Philosophy of Science; Stoicism.

If the logic and epistemology of historical thought are to be understood, if historical and logical and epistemological thinking are to be refined, then historians, logicians, epistemologists, and others must work together in a spirit of mutual

cooperation. Each of these proud disciplines has much to teach the others – and much to learn as well. (David H. Fischer 1970: xii)

It is with great pleasure and equal anxiety that we introduce the fifth volume of the *JCH*, a double issue which packs diverse and – in many respects – innovative material. Our decision to proceed with a double issue was mandated by the backlog the journal had suffered before our editorial tenure. Given that we are already working on volume six – yet another double issue – we are confident that by the end of 2020 we will be in a position to bring the journal to a temporal harmonization. This has been our primary aim ever since August 2017, along with a revamp of the editorial board and management which has made the journal more flexible and effective.

However, such an effort would have been in vain without the eagerness and dedication to our new vision of many scholars and colleagues who have submitted their work, evaluated articles, written book reviews, and engaged in debates relevant to the past, present, and future of historiography in general and cognitive historiography in particular. Hence, the present volume brings five sections that deal with various issues, topics, and elements of the broad historiographical picture. Each section deals with the most significant challenges to the current study of historiography while introducing each time a specific set of skills, approaches, and tools. As such, the reader of the volume will encounter in its pages topics and perspectives that are often either neglected or overlooked (or, worse, scorned) in mainstream historiographical research. From maladaptive behaviours, cognitive biases in the history of philosophy, silent prayers as mental imagery and mindfulness exercises, and eunuchs in antiquity, to Big Data approaches and scientific reductionism, this double issue of the *JCH* aspires to draw attention to topics that have extreme relevance to the study of history.

We are extremely happy to open the volume with five papers that cover persisting issues in historiography past and present – including two papers related to our call on the topic of “Toxic Traditions: Pathological and Maladaptive Beliefs, Biases, and Behaviours throughout Human History-” One of our ambitious aims was to create the “foundations for an archive of historiographical case studies focusing on the epidemiology of toxic traditions”, intended as the intergenerational sets of belief-behaviour complexes (BBCs) that can cause (un)intended damage to the health and wealth of individuals and entire communities. Nonetheless, we acknowledge the sheer complexity of such a potentially controversial topic, and, for the sake of context as well as to extend the original invitation to anyone willing to contribute, we herein include as appendix a slightly revised version of the background to the topic we presented when we first issued the call for papers online. Suffice

it to say here that when we thought about this particular set of issues, we felt that many current debates about the potentially negative role of these BBCs in human history have been somewhat weighed down by an excessive and narrow reliance upon “feel good” narratives in the forms of prosocial and adaptationist approaches. The close and multifaceted historical study of cultural and evolutionary mismatches of traits once adaptive in ancestral ecological niches but maladaptive in posterior social and natural environments could probably help readdress this research bias (cf. Lents 2019).

The two articles we present in this issue just scratch the surface of the many diachronic and diastratic topics that still needs to be covered in depth, and yet both contributions are already able to deliver some thought-provoking results from this preliminary historiographical core drill. Reflecting a recent critical trend in historiographical research (cf. Martin and Wiebe 2016), F. LeRon Schults suggests that “theistic credulity and conformity biases, which may well have served some adaptive functions in the Upper Paleolithic, have now become toxic and are generally maladaptive in the Anthropocene.” According to the author, these prejudices “exacerbate some of the most pressing global challenges our species faces, including extreme climate change, excessive consumer capitalism and escalating cultural conflict.” As a corrective, Schults proposes some interesting psychological “debiasing strategies” to tackle effectively the most pressing logical fallacies. However, as recognized by the author himself, this work is extremely difficult *in vivo* and, in our current sociopolitical post-truth environment, it remains to be seen whether or not these psychological approaches to reduce anti-scientific and potentially toxic prejudices can really be effective in reducing biases. In the second contribution, Panayotis Pachis looks back to ancient Graeco-Roman times, and focuses on the admittedly mind-boggling cult of Cybele and Attis. This cult is particularly renowned among ancient historians for its bloody rituals, during which the worshippers flagellated and castrated themselves to honour the Great Mother Cybele by imitating the life story of her companion Attis. While no other cult could provide as powerful a textbook example of maladaptive toxic behaviour as this, Pachis takes great care to highlight the surprising other side of the coin through a painstaking examination of ancient sources, stressing the neuroanthropological background to the cult as well as the unexpected psychosocial gains deriving from such an extreme practice. The Roman institutionalisation of this foreign cult from Asia Minor, the author explains, can be understood as the end result of a top-down need for political and imperialistic legitimization and a bottom-up quest for social recognition by a marginalized subculture and community (whose members are labelled *cinaedi* in some of the sources) within a society largely

dominated by the “oppressive androcentrism and patriarchal [...] control of subordinates.”

As mentioned above, the research section also includes three additional contributions. Echoing some of the topics of the “Toxic Traditions” call, an insightful analysis of the religious-based cognitive biases and logical fallacies in Scottish philosopher Thomas Reid’s (1710-1796) works, penned by Ryan Nichols, contrasts Reid’s accommodationism with fellow Scottish philosopher David Hume’s critical and sceptical approach and argues that Reid’s philosophy rested on a *a priori* defence mechanisms ultimately based upon theological commitments. By offering this interesting foray into cross-disciplinary analysis and successfully merging the history of philosophy and science with cognitive historiography, Nichols hopes that,

one day a history of Western philosophy will be written that approaches the subject with new, critical eyes, having canvassed cognitive science for renewed understanding about mechanisms for the non-rational cultural transmission of ideas. Only in this new history could one hope to account for the movement through time of the mishmash of culturally-embedded intuitions, religious beliefs, critical thinking, and social and cognitive biases that wrongly pass for disinterested philosophical reasoning. This paper is a small contribution to that effort.

A provocative discussion written by Maik Patzelt engages with the neurocognitive analysis of Stoic silent prayers by Roman philosopher and writer Seneca, recontextualizing this practice as “a body techniqu[e] of sensory deprivation and solitude, which manipulate the agent’s body and nervous system to the end of producing an altered mental state” (in particular “through sleep deprivation, fasting, and work” as well as relaxation through meditation), in some cases akin to mindfulness and modern CBT (cognitive-behavioural therapy). While this is only hinted at in Patzelt’s contribution, in the light of Ander K. Petersen’s commentary published in the previous issue of the *JCH* (Petersen 2017), it is striking to note that Seneca’s attitude towards silent prayers and mental imagery appears to be just one among many Axial Age anxiety-decreasing responses in the wake of the development of ultrasocial urban life (i.e., the historical development of urban settlements characterized by complex divisions of labour and accumulation of economic surplus where thousands or millions of genetically unrelated and anonymous people live side by side, a situation inevitably conducive to stressful experiences; see also Turner *et al.* 2018).³

This section is concluded by a multi-authored presentation of the current work done by the team behind Seshat: Global History Databank (<http://seshatdatabank.info/>). As recently recapped in a newspaper article written

by Laura Spinney, Seshat (established in 2010 at Oxford University and whose name honours the ancient Egyptian “goddess of record-keeping”) is a daring “approach to history, which uses software to find patterns in massive amounts of historical data” mined by statisticians and analyzed by a core interdisciplinary team of biologists and anthropologists with the help of “expert collaborators” including historians and archaeologists (Spinney 2019). The aim is to create a “database of historical and archaeological information” against which “historical theories will be tested [and] the ones that do not fit – many of them long-cherished – will be discarded. Our understanding of the past will converge on something approaching an objective truth” (Spinney 2019). Rather than a certainty, though, this may be understood as the underlying long-term aim of the whole endeavour, because science never comes without strong debates. Indeed, as Spinney herself notes in her article,

Seshat has come in for criticism of the kind that has been directed at big data more generally. Just because there is lots of it, critics say, does not mean that the data is more reliable. On the contrary, such a database risks amplifying the interpretative biases of those who initially recorded the information, while stripping it of its context. Seshat’s founders counter that bias is a problem in history generally, and only the analysis of large quantities of data allows a signal – something approaching the truth – to detach itself from that noise. (Spinney 2019)

We acknowledge that such disciplinary discussions are too important to be left to interviews, newspaper reports, and instant online sensationalism, because, despite the despicable Twitterization of academia (Fraser 2019), science needs to allow the slow, in-depth evaluation of claims and methods by the community of scholars. Therefore, we open the second section – aptly titled “Discussion” – with a critical reply to the most recent article by the Seshat team, “Complex Societies Precede Moralizing Gods Throughout World History” (Whitehouse *et al.* 2019), offered by another team in the Big Data interdisciplinary sub-field, the Database of Religious History (DRH), based at the University of British Columbia (<https://religiondatabase.org/>; see Slingerland and Sullivan 2017). A response by the Seshat team is also included. While from a personal perspective we may have professionally informed opinions on the matters at hand,⁴ as editors we hasten to add that in this particular contention the *JCH* does not endorse, warrant, or represent any particular point of view nor does it support any side of the debate. Rather, we aim at offering equal space and visibility to both teams for a frank debate open to the whole of the research community of peers and we welcome the opportunity to provide a place for an in-depth methodological and epistemological discussion between competing research programmes

in the field (Lakatos 1979). We deem this sort of confrontation as crucial for a healthy science and fundamental to avoid echo chambers, detect mistakes and errors, and steer clear of research stagnation, and we welcome any additional reflections on such relevant aspects from any interested scholars – including, and it goes without saying, any counter-reply from the two teams featured in this issue – in the next *JCH* volume.

The third section, “Conversation,” includes a riveting discussion on a topic that rarely – if ever – finds space in scholarly journals dedicated to historical studies despite its utmost relevance for socio-cultural and religious discussions, namely “horror.” However, the field of horror studies can be like an impenetrable jungle (or, should we say, a meandering gothic castle?) for any explorer bold enough to venture farther in such a fearsome field. As recalled in this conversation,

[t]here is a bewildering number of theories out there that have tried to make sense of horror as a collection of tropes and as a genre. From Todorov’s fantastic hesitance before that unexpected something that violates the common-sense rules of nature to Freud’s repressed and projected *Unheimlich*; from Jung’s irrational and unconscious shadow to Lovecraft’s ancestral fear before the cosmically unknowable; from socio-cultural systemization of the role of purity and impurity to evolutionary analyses of storytelling devices as a mental exercises to practise moral decision-making and alert against potential existential risks in a safe environment; from the experience of the sheer thrill of (others’) pain and suffering (whether as a consequence of the 1950s palaeoanthropological “killer ape theory” or as the experiential element of Aristotelian catharsis) to the cognitive appeal and memorability of counterintuitive violations and breaches of our innate understanding of how the natural and the social worlds function... and the list could go on almost indefinitely.

In order to see this more clearly, we invited two of the most respected scholars in their own fields, Mathias Clasen (biocultural literary studies) and Darryl Jones (literary studies and history of English literature), to take part in a virtual roundtable on method and theory in horror studies. Accompanied by a rather unconventional and stimulating reciprocal review of their books, Clasen and Jones engage in a lively conversation on the cross-media study of horror, expanding the reach of their disciplinary research and offering extremely valuable insights in regard to the study of horror, cognition, historiography, and the humanities by and large. We sincerely thank both scholars for their passionate exchange, and we can only hope for future instalments, open dialogues, and occasions of interdisciplinary learning and confrontation as brilliant as this one.

We are also glad to continue the special section of the journal entitled “Précis,” which we deem extremely important to keep our fingers on the

pulse of the editorial situation. Thus, in this issue we present a précis by Massimo Pigliucci of his *Nonsense on Stilts: How to Tell Science from Bunk*, currently on its second edition eight years after its first publication (Pigliucci 2018). Entitled *Science Wars, Scientism, and Think Tanks*, Pigliucci's account presents the general points and the main updates of his book, retraces the history of the “demarcation problem” in the study of pseudoscience, and touches upon probably the most tragically relevant theme that has been characterizing these last years – “the paradox of the Internet age: everyone has access to electronic platforms such as blogs and video channels, which has turned the promise of a broader and more diverse democratic discourse into the current nightmare of misinformation wars fostered by governments and corporate entities.” As a potential corrective to prosumerism and the parallel distrust towards science and academia in general, Pigliucci proposes a “*virtue epistemological approach* to science popularizing” complete with handy and much needed bullet-point lists to assess both the trustworthiness of authors and the epistemic reliability of their sources. A complementary “Commentary” also signed by Pigliucci explains why philosopher of science Alex Rosenberg's view of history and historiography, most recently exposed in *How History Gets Things Wrong: The Neuroscience of Our Addiction to Stories* (Rosenberg 2018), appears to be epistemologically compromised by a form of extreme scientific reductionism based on a peculiar view of neuroscience.

This double issue is concluded by four book reviews on cutting-edge works related to historiography and science in the broadest sense possible. We have been extremely lucky to have two historians (Greg Woolf, Tyson A. Retz), a geneticist (Mauro Mandrioli), and a palaeontologist (Kevin Padian) willing to collaborate with us. All these scholars, coming from remarkably different academic backgrounds, reflect on an equally remarkably diverse set of issues: respectively, the science behind the end of the Roman Empire; recent theoretical approaches in historiography; cognitive biases behind our own intuitive conception of humans as *non*-animals; and the philosophy of palaeontology as historical science. As ever, we are thankful to the scholars who find time to deliver such important contributions to the broader scholarly community, and we are looking forward to receiving even more such contributions in the future.

Appendix: “Toxic Traditions” – Extended Open Call

“History – as expressed by preservation of signs from the past – provides the only sensible explanation for modern quirks, imperfections, oddities, and anomalies”.
(Stephen J. Gould 2002: 111)

Human beings excel in devising astonishing ways to cause (un)intended damage to their own health, their wealth, their kin, and their kith. Intuitive biases that shortcut rational examination, lack of sufficient (scientific) knowledge, the influence of unwarranted beliefs, and prestigious templates ready for blind imitation, provide preferential avenues that lead to the adoption of maladaptive behaviours, thus apparently contributing to self-sabotage one's own wellbeing, culture, or fitness (i.e., one's contribution to the genetic pool of future generations).

Cultural transmission of folk explanations and schemata concerning social, technological, and natural environments – supported and boosted by indoctrination, prestige, or emulation – allows the survival of unhealthy practices or post-truth beliefs, whose outcomes and (un)intended consequences might go unnoticed for months, years, decades, even centuries and millennia – thus affecting individual life-histories and future generations alike. In a society dominated by strong religious precepts, ultimately, critical thinking is trumped: if it is God's (or the gods') will, then so be it. Even in ancient and modern societal sub-systems dominated by rational and critical approaches to understanding (e.g., ancient philosophical schools, early modern academia and royal societies), unwarranted, sub-optimal, or damaging traditions and political interventions have prevented a smooth and steady progress in the advancement of science.

Sometimes, the positive value of folk knowledge is overwhelmingly evident, such as Andamanese geomorphological records concerning how to behave in case of a major tsunami, the alimentary process of nixtamalization in ancient Mesoamerica, or the mnemonic power of mythological storytelling to keep track of seasonal animal migrations through environmental clues (e.g., constellations). However, toxic traditions are kept alive either in bad faith for the economic, political, and social benefit of key stakeholders (e.g., the tobacco, sugar, and oil industries keen on minimizing or withhold the lethal effects of their products) or in good faith as the outcome of the social diffusion of cognitively appealing – and outstandingly toxic – cultural representations. A couple of examples will suffice:

- past and present religious justifications for political activity and violence: *circumcelliones*, *parabolani*, Taliban, Aum Shinrikyo, etc.;
- interactions between cognitive predispositions, technology, and psychosocial wellbeing – from ancient writing, sedentism, and agricultural innovations causing psychophysical mal-adjustments to current smartphone addiction and the disruption of the human microbiota as a consequence of the consumption of ultra-processed food.

From the most ancient times to the present, from the agentic notion of healing (i.e., an illness willed by a divine, supernatural being as a warning and a punishment for someone's wrongdoings) to the intuitive resistance against the germ theory of disease and disinfection; from macroeconomic growth models based on unlimited industrialization and unchecked capitalist consumerism to the Anthropocene combined crisis of global warming, plastic pollution, and sixth mass extinction; from religious dogmas promoting the unbridled proliferation of one's own progeny to overpopulation in a finite world-system of limited resources, the list of belief-behaviour complexes (henceforth, BBCs) that give rise to toxic traditions is almost limitless.

Paradoxically, and despite their aberrance, most BBCs can provide human agents with (in no particular order):

- a feeling of epistemic satisfaction (sometimes temporary);
- a personally meaningful and renewed sense of affective attachment to and investment in one's own identity and roots;
- a purposeful explanation of cause-effect relationships (albeit erroneous);
- a compelling way to assuage cognitive dissonance;
- an in-group means to make sense of social and individual (in)justice or theodicy (albeit questionable);
- a societal justification and a safety valve to egocentric, psychopathic, or sociopathic behaviours.

To make things more complicated, some of such sub-optimal BBCs can also show a stunning and potentially adaptive social facet (again, in no particular order):

- group-cohesion strengthening (even though individuals or out-groups might suffer);
- male intra-sexual power balance (at the cost of imposing intra-group gender subordination);
- intergenerational resource management and elite support of the family or the in-group (sometimes at the expense of individual reproduction while implementing out-group economic exploitation; e.g., monasticism, clergy);
- secured sexual access (at the expense of the partner's psychological health or long-term reproductive potential; e.g., female genital mutilations);
- costly signalling (to flag one's willingness to cooperate with the in-group).

Considering this complicated background, our current main goal is to pose the foundations for an archive of historiographical case studies focused on the epidemiology of BBCs. Thus, we welcome submissions dealing with the past and present of worldwide cultural and religious toxic traditions and able to tackle from an inter- and cross-disciplinary perspective the following basic questions:

1. When does a toxic tradition become an adaptive strategy for the group and for the individual – at what cost?
2. What are the main cognitive processes and logical fallacies behind the diffusion, the success, and the resilience of toxic traditions?
3. What are the main socio-cultural, religious, and political forces that select for or constrain specific toxic traditions?
4. When do sub-optimal BBCs backfire and develop into toxic traditions, and how do they interact with each other?
5. What is the role of mythology and theology in the preservation of toxic traditions?

Notes

1. Leonardo Ambasciano earned his PhD. in Historical Studies at the University of Turin, Italy, in 2014 with a cognitive and evolutionary analysis of the ancient Roman female cult of Bona Dea. In 2016, he was Visiting Lecturer in Religious Studies at Masaryk University, Brno, Czech Republic. He is the author of *An Unnatural History of Religion: Academia, Post-Truth, and the Quest for Scientific Knowledge* (Bloomsbury, 2019), and of various book reviews, chapters, and articles, the most recent of which is “History as a Canceled Problem? Hilbert Lists, du Bois-Reymond’s Enigmas, and the Scientific Study of Religion”, co-authored with T.J. Coleman III and published in *Journal of the American Academy of Religion* 87(2), 2019: 366-400.

2. Nickolas P. Roubekas is Assistant Professor of Religious Studies at the University of Vienna. He is the author of *An Ancient Theory of Religion: Euhemerism from Antiquity to the Present* (Routledge, 2017) and editor of *Theorizing “Religion” Antiquity* (Equinox, 2019). Among his forthcoming publications are *The Wiley-Blackwell Companion to the Study of Religion* (2nd ed.; co-edited with Robert A. Segal; Wiley-Blackwell, 2020) and *Explaining, Interpreting, and Theorizing Religion and Myth* (co-edited with Thomas Ryba; Brill, 2020).

3. To get a glimpse of just one serious downside of urban life, cf. the stressful exposure to noise pollution in ancient Rome as described in Seneca, *Ad Lucilium* LVI, or Juvenal, *Saturnae* III 193-202, and the most recent research concerning the correlation between urban noise and mental health, premature deaths, or cardiovascular diseases (e.g., Godwin 2018).

4. Full disclosure: prior to the preparation of the whole “Discussion” section, one of us had co-authored an article in which some of the most urgent epistemological and methodological issues with the current Big Data and computational approaches in historiography were identified and discussed (Ambasciano and Coleman 2019).

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