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Paying the Piper: History, Humanities, and the Scientific Study of Religion

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Abstract

Here we respond to a recent article in this journal by Leonardo Ambasciano, in which he offers a high-level critique of "big data," artificial intelligence, and computational approaches in the study of religion. The main thrust of his argument is that these approaches are fundamentally problematic both because of their negative effect on the humanities and because they inappropriately rely on "neoliberal philanthrocapitalist" funding. In our response, we refer to our experience working with computational scientists and humanities scholars in collaborative teams, where they stand shoulder to shoulder in equal collaboration with one another, each side relying on the distinctive value that the other provides as they attempt to create clearer and more

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valid descriptions, analyses, and explanations of complex human behaviors. We correct several errors of fact in Ambasciano's article, focusing first on ideological and ethical issues and then on methodological and epistemological issues. We conclude by emphasizing several points on which we agree with his assessment.

Keywords

simulation – artificial intelligence – big data – digital humanities – religion

1 Introduction[1]

In a recent article published in *Method and Theory in the Study of Religion*, Leonardo Ambasciano expressed concern about the effect of big data and computational science on humanities approaches in the study of religion, including especially cognitive historiography. He argued that the influence of "philanthropic capitalism" – focusing on the John Templeton Foundation (JTF), which has funded such research – is a threat to the integrity and even survival of fields such as religious studies in the academy. Ambasciano singled out projects led by the co-authors of the current article as particularly egregious examples of what he views as a betrayal by "CSR 2.0" of the humanities-friendly vision and insights of the leaders of the first phase of the cognitive and evolutionary science of religion. The implication is that, because JTF pays us to pipe, JTF calls the tune and we meekly comply.

Here we respond to Ambasciano's concerns, several of which we share, in the context of a broader description and clarification of our approach to the study of religion. We shift the metaphor to a more explicit reference to Robert Browning's poem, "The Pied Piper of Hamelin," the moral of which is the importance of paying what is due. In this context, we highlight ways in which our approach involves paying the humanities disciplines, including history, their due.

The *single most important point* in this reply is this: we aim to shore up the foundations of the bridges already built by cognitive approaches to religion, where computational scientists and humanities scholars stand shoulder to shoulder in equal collaboration with one another, relying on the distinctive value that each one provides the other in trying to create clearer and more valid descriptions, analyses, and explanations of complex human behaviors. This is the very opposite of discarding or marginalizing the humanities within

1 Ambasciano's reply to this response (which follows it in the print version) is available at [doi:10.1163/15700682-bja10082].

the scientific study of religion. In fact, as humanities scholars ourselves, we seek to clear pathways along which the humanities disciplines can be strengthened within universities through engagement with computational and data sciences, while supporting and taking full advantage of the humanities' unmatched sophistication in interpretation and criticism.

It is also important to note continuities between specializations within history, such as cognitive historiography, and computational approaches. Cognitive historiography itself includes, at least implicitly, the idea of information processing and psychological function as relevant to historical explanation. As such, cognitive historiography – as it was founded – has a great deal in common with computational and data-science approaches to traditionally humanities subject matter. Just as cognitive historiography seeks to strengthen historical research by incorporating psychology and cognitive science, so carefully curated computational approaches can clarify theoretical issues in historical and other humanities fields of research by spelling out logical connections within a theory and thereby encouraging epistemological clarity within the study of religion, culture, and human history.

This is the main thrust of our response. In what follows, we delve into a few details, clarifying and correcting several assertions about computational approaches to religion. We do this in two sections, one dealing with ideological and ethical issues, and the other with methodological and epistemological issues.

2 Ideological and Ethical Issues

Ambasciano claims to "explain the risks that philanthropic capitalism, that is, the main force driving this alarming professional transformation within the increasingly privatized context of neoliberal academia, poses to historiographical research and free academic inquiry in general" (Ambasciano 2022: 184).

Ambasciano never presents evidence in support of the claim that philanthropic funding of research is the "main force driving this alarming professional transformation within the increasingly privatized context of neoliberal academia" (2022: 184). We believe that single funders risk concentrating power. But the main driving force? Focusing just on big data and religion, the US government funnels billions of dollars into big-data and religion every year, dwarfing the entirety of the JTF endowment. Countless scholars in universities and think tanks depend on that government funding for economic survival and career advancement. And the US is not alone: many governments do the same, which helpfully distributes ideological perspectives. To us, Ambasciano's critical eye would more relevantly be cast on the biasing effects

of government investment in research related to big-data, artificial intelligence (AI), and religion.

Still, focusing now just on research funded by private philanthropy, Ambasciano doesn't demonstrate that there is a bias toward computational and data-science approaches to religion, away from history and humanities. What do we find when we dig into real data? The Dimensions database archives one of the world's largest corpora of peer-reviewed publications.[2] We searched titles and abstracts of published works, searching for 'religion AND "big data" OR 'religion AND "artificial intelligence"' and found 127 texts returned. However, when searching for religion AND historiography, we find that there are 926 publications returned – many quite recent. If we search for religion AND Roman NOT theology (to exclude theological work, or work focusing on this) we see 3,927 texts returned, and for religion AND Greek NOT theology, we return 2,623 texts – again, many quite recent. Many of the key research topics that ought to be suppressed if Ambasciano's argument were well founded are more represented in publications than work on AI by an order of magnitude.

While the claim that philanthropic capitalism is the main force driving research on religion neglects the fact that governments of the US and other nations are the largest funders, it also neglects the role of universities. According to the National Center for Education Statistics, "degree-granting postsecondary institutions in the United States in total spent $632 billion (in current dollars). Total expenses were $401 billion at public institutions, $219 billion at private nonprofit institutions, and $12 billion at private for-profit institutions" (National Center for Education Statistics, 2020a); there are 274 universities (National Center for Education Statistics, 2020b)[3] in the United States with over 4 billion worth of tuition costs per year. 4-year institutions in the US spend between 21 and 66% on "Academic support, student services, and institutional support" and at most 16% on research and public service, as well as between 26 and 30% on instruction. Generally, these costs cover the salaries and expenses of researchers in CSR 2.0, if there were CSR 2.0 researchers specifically hired for such work (to date, only one person, Claire White, has a fully tenured position in CSR). And they certainly determine where research efforts are focused within universities generally. In fact, "Instruction, including faculty salaries and benefits, was the largest single expense." (National Center for Education Statistics, 2020a). This complicates Ambasciano's claim about

2 https://www.dimensions.ai/.

3 Public or Private, 4-year institutions, offering a Bachelor's or Advanced degree without a religious affiliation or preferred "mission", but offering a religious studies program.

philanthropic capitalism. Universities themselves are far more important in deciding what gets studied.

Effectively, the universities are the largest funders of academic research in CSR, while the government is the largest funder of research in big-data, AI, and religion, while "philanthropic capitalism" is no better than a very distant third. *Data* makes a difference. Assertions in absence of data are often mere provocations, and in this case, they mislead.

The question of *why* this philanthropic funding of religion research occurs is still valid, from our perspective. It would be interesting to ask JTF why they devote a tiny fraction of their funding to religion research using computational and data-science methods. We have asked this question. The answer we received struck us as sensible: JTF supports potentially fruitful novel methods alongside established research methods, in hopes of generating new insights into religion. As methods prove their value, funding priorities may shift.

Similarly, it is worth asking why universities are *not* funding research in CSR (refer to the dearth of positions, above). We agree with Ambasciano that historians of religion do significant and important work, which is why we include historians, religion scholars, philosophers, and social scientists in research teams working on projects using computational and data-science methods. Despite this, the plain truth is that universities are not funding this kind of research into religion. A full discussion of the reasons why lies beyond the scope of this response, but a couple of observations may suffice.

On the one hand, if the financial motivations were as Ambasciano suggests, universities should be drawn to CSR to get their hands on philanthropic funding. But research universities will complain that they lose money every time they accept funding from private foundations because the indirect cost rates paid are so far below what is required to recover the university's real research costs. Research universities accept private-foundation grants in order to support faculty, and they do so at a considerable cost.

On the other hand, our discussions with a number of high-level university administrators suggests no specific objection to CSR. Such appointments are controlled by religion *departments*, where there is widespread resistance to CSR, and by other departments, where there is often resistance to making religion a focus of research. But why would humanities-dominated religion departments be resistant to CSR or to computational and data-science approaches in religion research? This seems to be in part a side effect of decline of the humanities since the post-modern turn: the humanities struggled to produce interpretative value as they began to embrace postmodernist interpretive frames. For example, postcolonial criticism of the very idea of religion as an object of study recommends only the dissolution of religion departments and

offers no advance in the understanding of lived human religion. Humanities departments of religious studies may well be tempted to double down on their existing humanities and interpretative-social-science approaches to defend themselves from what they see as the existential threat of a scientific juggernaut. The existential threat, we believe, is associated with the response of humanities departments to scientific approaches to religion, not with the scientific approaches themselves.

In fact, we have seen again and again that these kinds of conflicts, while experienced as all too real within humanities departments, are overblown. Computational and data-science approaches can be highly consilient with cognitive-historiographic, literary, and other humanities approaches. Indeed, one of the first conferences on cognitive historiography – tellingly hosted at the Institute of Cognition and Culture in Belfast, Northern Ireland – resulted in a volume precisely on this subject: *Past Minds: Studies in Cognitive Historiography*. The editors of that volume thank the "European Office of Aerospace Research and Development, Air Force Office of Scientific Research, United States Air Force Research Laboratory, for their generous support and for their contributions to the success of this conference and this volume" (Martin & Sørensen 2014: xi). This shows that governmental organizations, which are the most influential funders in the field of religion and big data, can indeed be interested in funding scholars in cognitive historiography. Note that not one of the chapters in that volume is dedicated to the study of extremism, counterterrorism, surveillance, signals intelligence, or any form of kinetic-operations research, the topics that usually attract government funding.

Ambasciano also asserts that the influence of JTF leads to implicit theological biases in the computational study of religion and CSR 2.0 in general. We know this domain as well as anyone and haven't seen such bias, but let's set that aside. If there are implicit theological biases in the products of our JTF-funded research, we encourage Ambasciano to highlight them. After all, in part to expose our research to maximum criticism, the code and data for all our JTF-funded work has been public for years, freely available at https://github.com/orgs/centerformindandculture/repositories. One of the great virtues of computational modeling is that, due to the nature of creating a model in a computational language, all biases are present and exposed in the code, all logic is clearly implemented. If someone were to find evidence of a crypto-theological bias, it will be in lines of code and the way parameters operate. Such things can be found, highlighted, and critiqued, after which a request can be openly made to adjust the model, or the model can be reprogrammed independently of us. To date, we know that no attempt has been made by Ambasciano or anyone else to do this, because we (and everyone else) can see the number of code-forks in the repository.

As much as we love the humanities, we do admit that we often see conceptual mist obfuscating the terms of debate through polysemy and additive rhetorical flourishes. Indeed, we see this in some of Ambasciano's evidence-free assertions, as well as in how they collapse so quickly when considering the relevant data. Scholarly debate can, and should, take place in the open, and computational and data-science approaches to religion research really help with this. In particular, the extent to which the involvement of any specific entity introduces biases is necessarily explicitly represented in code, if it is to be found at all.

Moreover, the research teams highlighted by Ambasciano were largely made up of non-Christians, and much of the project was run by a scholar who is well-known as an atheist (Shults). So, the particular type of bias Ambasciano has in mind is unclear to us. If the assertion of bias is limited to the fact that JTF funds certain research, and this may create blind spots in the field, then we agree in principle. But such bias still needs to be demonstrated. Most importantly, if it is demonstrated, it can be accommodated, and corrective steps taken.

The work that we have undertaken is always done with the utmost consideration for ethics. We regularly publish on these issues (Diallo, et al., 2021; Lane 2015; Shults & Wildman 2019, 2020a; Tolk, et al., 2021) and are at the forefront of sponsoring discussions of ethical issues within conferences related to computational and data sciences. And we're not the only ones. One of the few AI researchers to engage in the humanities and computational simulation in the CSR 2.0 framework is Joanna Bryson, who is an expert in ethics, was picked for Google's ethics board, has been helping the EU draft their ethics legislation, and has been involved in some of the research projects at institutes discussed by Ambasciano (Lane 2021; Whitehouse, et al., 2012b, 2012a).

3 Methodological and Epistemological Issues

Ambasciano charges us with lack of engagement with historians and the humanities. Yet our team is largely humanities scholars and has written entire volumes demonstrating precisely this kind of engagement (Diallo, et al., 2019). Much of our effort, including in consulting on grants, has also included historiography as a critical component, such as the GEHIR project (in which Ambasciano himself was tangentially involved).

It is easy to see this kind of engagement in the published results of our research activity, funded and unfunded. We've regularly published about how we have engaged historians and explained that historians and other scholars from the social sciences and humanities are critical components of our simulation teams (Diallo 2021; Lane 2019a, 2019b; Tolk & Wildman 2018; Wildman,

et al., 2017). We have, in fact, never written a grant where the PI was not trained in the humanities, and a great deal of interest and research in integrating computational and data science methods with the humanities study of religion has been driven through our research teams.

The abstract of Ambasciano's article makes several claims that are difficult to defend. For example: "The recent digital turn has had an unprecedented impact on the identity of the academic disciplines that study religions. Expectedly, this shift has brought about a dramatic change in the power dynamics between the main research actors and funders. In particular, historians and humanist scholars have taken the brunt, mostly replaced by data scientists, software engineers, statisticians, psychologists, anthropologists, and biologists alike" (2022: 182). Again, we turn to data to penetrate beyond the rhetorical flair. There are *no tenured full-time data scientists or software engineers at any religious studies department* that we are aware of. As such, the influence of this new research has arguably been effectively null in the field of religious studies at large. Moreover, psychologists, sociologists, and anthropologists have always been part of the academic study of religion, working alongside humanities scholars and historians. If religion departments were to change and start welcoming into their professorial ranks a few experts in the application of computational and data-science methods to religion, we're at a loss to see why this would be any more challenging.

Ambasciano asserts without evidence or example: "Consequently, multimillion-dollar projects aimed at testing historical hypotheses and massive agent-based simulations have been implemented on shaky methodological and epistemological grounds" (2022: 182). Given how computational and data-science methods work, any shaky methodologies can be criticized explicitly, and we welcome such engagement. Indeed, methodological debates are extremely common in our research teams, with humanities sensitivities fully represented.

The abstract states: "Concurrently, in the aftermath of the 2008 financial crisis, private religious bodies have increasingly replaced public funding, raising important but still unaddressed moral questions about transparency, independence, and potential conflicts of interests" (2022: 182). But the vast majority of funding into AI and religion or big data and religion is still public, as we've noted above.

He summarizes: "The present article explores the ethically troubling relationship between the boom of Big Data and computational approaches to the study of religions past and present and the infiltration of religious philanthrocapitalism in contemporary neoliberal academia" (2022: 182). However, there is not a single instance of big data applied to the study of religion cited in

Ambasciano's paper. SESHAT isn't big data. This point has been made in the past (Lane 2021), but SESHAT and even the Database of Religious History are very far from big data. They are databases that can basically be opened as spreadsheets and are orders of magnitude smaller than what is required to use the term big data (though the term is sometimes abused by people who haven't consulted a definition). Thus, there is a fundamental unclarity in the very scope and focus of Ambasciano's critique.

Ambasciano also misrepresents our epistemological approach. "The general *modus operandi* of such MAAI [multi-agent artificial intelligence] simulations is not very different from other projects aimed at the digital study of the past" (2022: 189). On the contrary, when the idea of MAAI was first introduced into the study of religion, clear contrasts were drawn with big-data approaches, and further exploration of the relationship between MAAI, the extant current socio-historical databases, and big-data methods have also been clearly delineated elsewhere – including in papers cited by Ambasciano (Lane 2013). None of the MAAI approaches discussed in the paper by Ambasciano involved systems that integrated with SESHAT or the Database of Religious History.

Ambasciano further argues that "the modellization of ancient societies does not pose an immediate risk to contemporary societies. MAAI simulations do" (2022: 189). We agree that there are contemporary ethical issues associated with the development of MAAI, but we think this is true for *every kind of modeling*. Machine-learning AI models of the content of ancient texts such as the New Testament and the Qur'an exist, and it doesn't take a ton of imagination to see how they could be bent to serve ideological purposes in ethically problematic ways. From our perspective, the ethical issues are very real, and even more pressing than Ambasciano allows, since they implicate both the methods he endorses as well as the methods he rejects.

He criticizes Wildman regarding the 2018 Cambridge Analytica scandal based on a reporter's gloss of a complex interview. Cambridge Analytica accepted Facebook user information shared by a researcher in violation of the terms of use to which that researcher had agreed with Facebook – *for research purposes only*. Sharing that data was an illegal action by that researcher and, regardless of how much Cambridge Analytica knew about the source of the data and conditions of its use, sufficient ethical reason for the corporate collapse that followed. The comments to which Ambasciano incautiously refers pertain to the *analytical methods* employed by Cambridge Analytica (which, despite the framing of Ambasciano's comments, are methods unrelated to the MAAI approach as proposed and utilized within religious studies today), and to their *intentions* to help politicians influence voters. At that level, what matters is transparency, to enable the voting public to decide what they're willing

to tolerate in terms of political campaigns trying to manipulate their votes, and what they're willing to tolerate in terms of social media companies providing access to their personal data. Manipulating voters is as old as elections. *Transparency* about analytics methods and data use is the key to having that public conversation about election practices and manipulation.

Ambasciano writes: "As highlighted by Open University Emeritus Professor of the Public Understanding of Technology John Naughton, at best, this sort of computational research should be severely regulated and licensed like the few labs actually able to safely manage highly toxic materials or viruses; at worst, given the ease with which such projects can be weaponized in favor of the populist swaying of undecided voters and other anti-democratic projects, these MAAI simulations should be outlawed" (2022: 190). At this point, colorful rhetoric passes over into distortion, as Naughton's piece was not talking about MAAI (original comment here: https://www.theguardian.com/commentisfree/2019/dec/07/lost-my-faith-in-tech-evangelism-john-naughton).

Ambasciano also neglects the positive effects of our modeling approach, the results of which he fails to cite. MAAI models developed through our international collaborative efforts with humanities and social science scholars have aimed at discovering solutions to real-world challenges such as mitigating xenophobic anxiety and intergroup conflict (Shults, Gore, et al., 2018; Shults, Lane, et al., 2018), finding more progressive and culturally sensitive ways to solve immigration crises in Europe related to Refugee camps in Lesbos (Padilla, et al., 2018; Paloutzian, et al., 2021), analyzing the effectiveness of anti-child-sex-trafficking policies (Alizada & Wildman, 2019), simulating processes that enhance minority integration in urban areas (Puga-Gonzalez, et al., 2019), addressing problems related to ethnocentrism (Lemos, et al., 2019), responding to global challenges related to the United Nations Sustainable Development Goals (Shults & Wildman, 2020b), reducing radicalization and violent extremism (Shults & Gore, 2020; Ottman, et al. 2022), uncovering ways to help change the Dutch immigration system to be more culturally compatible with Syrian Refugees (Boshuijzen-van Burken, et al., 2020), offering support for universities and other organizations struggling to set policies to slow the spread of COVID-19 (Wildman, et al., 2020), providing insight for therapeutic interventions for PTSD nightmares (McNamara, et al., 2021), illuminating the dynamics that promote prosocial attitudes and behaviors (Galen, et al., 2021), and preventing the spread of misinformation and anxiety in the wake of a pandemic (Antosz, et al., 2022). We welcome whatever assistance Ambasciano or other historians of religion, regardless of their previous participation in CSR 2.0, have to offer to help us address these critical social issues using the kinds of tools that policy makers are interested in engaging.

4 Conclusion

Finally, it is important to highlight several of Ambasciano's key points with which we wholly agree.

1) There should be more active funders in computational and data-science approaches to religion.
2) Current database approaches are still works in progress and should (continue to) engage historians as carefully as possible about data as well as how data is analyzed.
3) There is no theory-free historiography. Databases that are collecting and coding data are doing so with implicit or explicit theoretical assumptions.
4) Ethical issues surrounding AI should be discussed openly and frequently, always considering the changes and capabilities of the technology and weighing the social and moral costs and benefits.

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