

# Towards a historical comparison framework

Brendan Case · Tim Lomas

**Abstract:** The recently proposed Global Comparison Framework (Lomas, 2023) lays out a rich array of dimensions of flourishing and their determinants on which the nations of the world might be compared. Despite its capaciousness and comprehensiveness, however, the GCF's reliance on a contemporary snapshot of global diversity still presents scholars engaged in cross-cultural studies of flourishing with a relatively narrow field of inquiry. The GCF's focus on contemporary indicators is understandable, but the roots of many of the differences among nations today – whether considered in terms of psychological profile, economic development, political and cultural norms, or, ultimately, overall flourishing – frequently lie in the distant and long buried past. This paper provides notes toward a historical supplement for the GCF – a historical comparison framework (HCF) – by sketching a set of indicators which, while no longer operative or at least salient for most of the world today, were at various points highly significant determinants of cultural, technological, or economic change, with effects which are still evident today in cross-cultural differences in flourishing or its determinants. We group these indicators under three broad headings: geography, migration and conquest, and religion.

**Keywords:** Global Comparison Framework; historical psychology; cross-cultural psychology; flourishing

## 1. Introduction

The recently proposed Global Comparison Framework (Lomas, 2023) lays out a rich array of dimensions of flourishing and their determinants on which the nations of the world might be compared. The GCF documents the striking degree of variation in indicators of flourishing both within and among countries. As such, it can help researchers avoid the dangers of narrowly focusing on single indicators – GDP per capita, quality-of-life-adjusted life-years, life evaluation – in comparing countries around the world; widening the zoom using the GCF can allow scholars to consider potential tradeoffs among flourishing domains or determinants, or to assess areas of real strength within relatively languishing countries, or areas of real weakness within relatively flourishing ones. More broadly, it can help complexify and enrich the way scholars conceptually “carve up” the world, going beyond the standard well-worn categorical groupings, which center on a handful of geographic (e.g., North-South), cultural (e.g., individualistic-collectivistic), economic (e.g., low, middle, and high income), and political (e.g., capitalist-communist) distinctions.

### 1.1 *The historical turn in psychology*

Despite its capaciousness and comprehensiveness, however, the GCF's reliance on a contemporary snapshot of global diversity still presents scholars engaged in cross-cultural

studies of flourishing with a relatively narrow field of inquiry. The GCF's focus on contemporary indicators is understandable, but the roots of many of the differences among nations today – whether considered in terms of psychological profile, economic development, political and cultural norms, or, ultimately, overall flourishing – frequently lie in the distant and long buried past. As Muthukrishna et al. (2021) rightly note, in calling for a historical turn within psychology, “understanding present-day psychology requires understanding the past processes, environments, and constraints that led to that psychology” (p. 1).

The authors rightly insist that “societies in the past can be as culturally distant as societies in another place. The same argument for geographical variation in psychology also applies to temporal variation. What we measure as cohort effects are a sliver of the cross-temporal variation we would expect in a culturally evolving species. History serves as a kind of psychological fossil record” (2021: p. 4). If “psychology [is] to develop a full theoretical understanding of human behavior,” they insist, “it needs to also be a historical science” (2021: p. 1).

It is now well understood and accepted that a comprehensive understanding of humanity cannot be limited to – as was essentially the case in psychological research during the 20<sup>th</sup> century – scholars and participants from societies which Henrich et al. (2010) influentially labelled as “WEIRD” (Western, educated, industrialized, rich, and democratic). Consequently, considerable efforts are now being made to undertake research that is more global and cross-cultural, as for instance exemplified by the forthcoming Global Flourishing Study (Johnson & VanderWeele, 2022). Significantly, having essentially “won” this argument and persuaded the field of its merits, these same authors have now extended the case with respect to time: scholarship must not only be cross-cultural but cross-temporal, encompassing people across not just diverse global contexts but historical ones too.

Muthukrishna et al. (2021) offer two related but distinct motivations for this call for psychology to reconstitute itself as a branch of history: first, to develop a genuinely universal science of human cognition, one must test one's theories against a genuinely universal range of data, rather than artificially restricting oneself to the tiny slice of humanity who happen to be alive at present. But second, we cannot even construct a causally adequate account of the psychological present without reconstructing the past states of affairs which served as its sufficient causes, any more than Louis Agassiz could have constructed a causally adequate account of Alpine moraines and glacial erratics without reconstructing the Ice Age which had given rise to them (cf. Irmscher, 2013: Kindle loc. 761-1447).

For a particularly salient instance of “historical psychology” as Muthukrishna et al. (2021) understand it, consider the key thesis of Henrich's 2020 book – *The WEIRDest People in the World: How the West Became Psychologically Peculiar and Particularly Prosperous* – which argues that Europe and its offshoots became “WEIRD” above all because of the particular ideas and policies pertaining to marriage and family that were enforced by the medieval Western (Latin) Church. Outside the modern West – including about 85% of all societies for which we have records – marriage norms have typically focused on cementing and extending relations of kinship, including polygamy, easy divorce and remarriage, and cousin-marriage (Henrich, 2020: p. 162-63). These practices reinforce kin networks and increase the odds that the leading figures in a particular lineage will produce an heir. Kin-intensive societies also tend to favor marriages to relatives, which “channels people's investments into a distinct and largely inherited kin-group”

(Henrich, 2020: p. 27); the logic is literally, “keeping it” – wealth, descendants, prestige, power – “in the family.”

This structure, which is now the subject of jokes about so-called “backward” regions in the developed world, is in fact the historical human norm; even today, about 10% of marriages worldwide are to relatives (Henrich, 2020: p. 157), a figure that rises to over 50% in parts of Afghanistan and Pakistan (Saadat & Tajbakhsh, 2013). Such observations lie behind the subtitle to Henrich’s book: although contemporary psychology focuses on people in Western societies, and moreover presents their characteristics as a universal norm, from a global perspective such societies could be deemed “psychologically peculiar.”

As Henrich shows, the global decline of polygyny, cousin-marriage, and (until relatively recently) easy divorce and remarriage was in large part the result of the late-ancient Western Church’s efforts to enforce a “Marriage and Family Plan” (MFP) for its members which, e.g., insisted on lifelong monogamy with little scope for remarriage after divorce; banned marriages between even distant relatives, including in-laws and god-siblings; and eroded customary inheritance laws (2020: 193). Over time, both through the spread of Christianity and the (later) political and cultural dominance of European models, “WEIRD monogamy” spread over the globe, so that today, only about 2% of marriages are polygynous (Kramer, 2020), and only 10% are consanguineous (Henrich, 2020: p. 157).

The diffusion of the MFP had long-lasting effects on the economic and political organization of European societies – replacing tribes and other extended kindreds with cities populated by strangers relating to one another through voluntary associations and impersonal legal and economic frameworks (2020: p. 311-12) – and through them, on European psychology, which became increasingly individualist, less deferential to authority, and more committed to uniform fairness and other forms of “impartial pro-sociality” (2020: p. 204, 304). In short, the MFP catalyzed the process by which the world has become increasingly “WEIRD” (Henrich et al., 2010; Henrich, 2020; Ghai, 2021).

The gradual spread of the Western Church offers a natural experiment which Henrich exploits for testing the hypothesis that the MFP *caused* WEIRD psychology, rather than merely preceding it. (This indeed is a great strength of Henrich’s scholarship; rather than merely describing forms of cross-cultural difference in the present, as most cross-cultural research is limited to, he articulates numerous specific hypotheses – which furthermore are usually empirically derived and testable – as to *why* these differences emerged historically.) The spread of bishoprics in communion with the Pope acted “as a time-release dosage of the MFP, measured in centuries of exposure to the Church...The stronger the MFP dosage ingested by a population,” Henrich shows, “the weaker their kin-based institutions,” and the WEIRDer their psychology today (2020: p. 200), whether on experimental measures of individualism (2020: p. 234) or indicators of pro-sociality, such as blood donation (2020: p. 245-46).

### 1.2 Anticipating historical psychology (I): Dilthey’s “critique of historical reason”

Muthukrishna, Henrich, and Slingerland’s recent call for a turn to “historical psychology” is strikingly convergent with the philosopher Wilhelm Dilthey’s proposal, in the early twentieth century, that an adequate theory of the “human sciences (*Geisteswissenschaften*)” requires a “critique of historical reason” (2002: p. 213). Dilthey argued that knowledge consists either in “explanation (*Erklärung*)” or “understanding (*Verstehen*).” His paradigms for the former are

drawn from the natural sciences' bid for reduction: in physics, the mechanics or chemistry of medium-sized dry goods are explained in terms of interacting elementary particles, and appeals to such obscure entities are justified by their adequacy in simplifying both theory and description (2002: p. 107).

The reductive accounts offered by the natural sciences explain a great deal – but not everything. Indeed, much that lies closest to the heart of human life is screened out entirely by “explanation,” which Dilthey opposed to “understanding (*Verstehen*),” an incommensurable and equally important mode of inquiry concerned with “spiritual (*geistlich*, mental) objects” which are grounded in “lived experience (*Erlebnis*)” and which are proper to the human sciences (2002: p. 91, 107, 140). For Dilthey, “the procedure of understanding is grounded in the realization that the external reality that constitutes its objects is totally different from the objects of the natural sciences. Spirit has objectified itself in the former, purposes have been embodied in them, values have been actualized in them” (2002: p. 141).

But – and here is our principal interest in Dilthey – if the proper scope of the human sciences encompasses “everything in which human spirit has objectified itself,” then, in order to achieve a comprehensive outlook within their domain, the human sciences must take the form of a complete historical account of human – or rather, *geistlich*, mental or spiritual – existence (2002: p. 170). As Dilthey puts it, “Our resulting task is to conceive the world of human spirit as a productive nexus or as a totality constituted by its enduring products” (2002: p. 175). The present which we experience is only intelligible as the outcome (to-date) of processes set in motion in ages long-past; for social scientists to treat what lies on time's surface as sufficient for its own interpretation is a bit like geologists taking no interest in what lies more than a few inches below the Earth's surface.

### 1.3 Anticipating historical psychology (II): The Annales school

Two decades after Dilthey's call for an historical turn within the social sciences, the founding of the journal *Annales d'histoire économique et sociale* called for a social-scientific turn within history, and so launched one of the most influential and durable schools of modern historiography. In their note “To our readers” in the inaugural issue in 1929, the journal's editors, Lucien Febvre and Marc Bloch, lamented the “divorce” between historians who “apply their good, old, proven methods” – namely, narrative history emphasizing politics, war, and “great men” – to “documents of the past,” and those who “dedicate...their activity to the study of societies and of contemporary economies: two classes of worker...who, ordinarily, rub shoulders without getting to know one another” (1929: p. 1). They further lamented the galloping sub-specialization among historians, and insisted that there is “nothing better [than]...if each one...laboriously cultivating his own garden, makes an effort nonetheless to follow the work of his neighbor” (1929: p. 1-2).

Febvre and Bloch were calling, in short, for an approach to history which was both interdisciplinary – “Historians, be geographers,” Febvre wrote; “Be jurists too, and sociologists, and psychologists” (quoted in Burke, 2015: p. 20) – and which took seriously the idea that the roots of present developments often lie in social, economic, or cultural changes which occurred gradually in the distant past, and which thus require with attention to what Fernand Braudel – Febvre's and Bloch's disciple and successor within the *Annales* movement – called the *longue durée* (Braudel, 1958). An *Annales* historian, as Braudel put it, “will always want to see the whole, the

totality of the social” (quoted in Burke, 2015: 88), an ambition on ample display in Braudel’s multi-volume *The Mediterranean and the Mediterranean World in the Age of Philip II* (1972-73).

For Dilthey, the *Annalists*, and contemporaries such as Muthukrishna et al. (2021) alike, history is, in a sense, the queen of the human sciences, tasked, at least aspirationally, with achieving a complete, synthetic perspective on the entirety of human experience. Or, put otherwise, the social sciences mature *as sciences* – as bearers of genuinely causal accounts of human cultures and societies rather than mere psycho-social philately – precisely to the extent that they become historical. Historical synthesis is, of course, no enemy to minute specialization, not least because the spinner of grand theories and bold narratives would have little to synthesize if not for the labors of his specialist colleagues. Nonetheless, in society and culture as in living bodies, the whole is in fact prior to the part, and those who labor myopically over the parts forget this at their peril.

But really, Faulkner perhaps put the point best: “The past is never dead. It’s not even past” (2011: p. 73).

#### 1.4 Towards a historical comparison framework

The core insight shared among these three convergent approaches to integrating history and the social sciences is that variation in factors that influenced psychology or culture in the past can still shape them in the present, even if those factors are no longer salient, recognizable, or even operative today. For example (as it happens, the example that inspired the present paper), consider the economic and cultural significance, in a world without rail, automotive, or air travel, of the density of navigable waterways, understood as the ratio of overall surface area to the length of navigable rivers, canals, and natural harbors. This distinction is obviously less salient today than it was in the eighteenth century or earlier, but it goes some way to explaining the different cultural, technological, and economic trajectories of, say, the continents of Europe and (sub-Saharan) Africa.

Thomas Sowell makes the overall point well: “The many deep and slow-moving rivers of Europe are a sharp contrast to the relatively few rivers in Africa, with the African rivers also being beset with rapids and waterfalls. Given the importance of water transport, how could that fail to affect the economies and cultures of the two continents? Is it sheer coincidence that the poorer parts of Europe have been areas lacking these geographical advantages – regions more remote from the sea and with rivers frozen a substantial part of the year (as in Russia), or regions with low-volume rivers and meager rainfall (like the Iberian peninsula), or regions culturally and economically fractured by mountain barriers (as in the Balkans)?” (1990: p. 13-14) Notice that Sowell not only stresses the importance of this geographic indicator in explaining contemporary variation between “the West and the rest,” but also its importance for explaining intra-regional variation, as among the nations of Europe.

This paper provides notes toward a historical supplement for the GCF – a historical comparison framework (HCF) – by sketching a set of indicators which, while no longer operative or at least salient for most of the world today, were at various points highly significant determinants of cultural, technological, or economic change, with effects which are still evident today in cross-cultural differences in flourishing or its determinants. (For “flourishing” as “a state in which all aspects of a person’s life are good,” cf. VanderWeele (2017), as well as Lomas, et al.

(2024)). We group these indicators under three broad headings: geography, migration and conquest, and religion.

Our aim here is to be illustrative rather than exhaustive. To be genuinely comprehensive – as our list of indicators assuredly is not – such a historical comparison framework could not limit itself to one timepoint in the past. Rather, it would need to indicators that have been significant determinants of contemporary flourishing at various points over the *longue durée* of human history, beginning with our species’ prehistoric rise to dominance over other hominids, and taking in the geographic features of the great continental landmasses. It would need to consider various factors relevant to the rise of agriculture, the growth of cities, the rise and spread of the “world religions.” A complete HCF would need to consider the influence of differences – themselves influenced by the earlier factors – in the development and stability of political and religious forms, and in norms around marriage, property, and exchange.

Several indicators highlighted for inclusion in the HCF exhibit dose-response effects for duration and intensity of exposure. We’ve already seen an instance of this above, in Henrich’s discussion of the effects of the MFP on the psychology of WEIRDness. Even in cases in which an institution of practice has achieved virtually global cultural saturation – as for non-consanguineous monogamy today – the time since its adoption in a given region will affect the extent of its influence in reshaping the psychology and behavior of people living there. It would be valuable for cross-cultural research in flourishing to take account of this sort of dose-response effect whenever it might reasonably be thought to obtain, as in the other examples we explore below.

On the other hand, one obvious disqualifier for inclusion in the HCF is an indicator’s evident contemporary salience. In the section on geography, for instance, we do not devote attention to a region’s density of arable land or its exposure to deadly pathogens, such as malaria, not because these were not crucial determinants of flourishing in the past, but rather because they remain so today. Our interest here is in compiling an admittedly partial list of factors which, while either invisible or at least relatively inconspicuous in the present, still importantly influence flourishing today through the lingering effects of their earlier operation on human cultural (*viz.*, psychological, economic, technological) development.

### 1.5 Anticipations of the historical comparison framework

Happily, many resources already exist which facilitate the creation, and in some cases approximate aspects of, a comprehensive HCF. Among the most important of these is the Database of Global Cultural Evolution (DGCE) developed by researchers at Harvard University, which links data on “cultural practices for 1,291 pre-industrial societies around the world...to all [7,651] contemporary languages using language trees of Glottolog 4.0” (Bahrami-Rad, et al., 2021; Hammarström et al., 2019). With just a few clicks, the DGCE can generate a detailed color-coded map displaying pre-industrial variation in the principal types of domesticated animals (<http://dgce.fas.harvard.edu/EA040>) or the sub-types of permissible cousin marriages (<http://dgce.fas.harvard.edu/EA024>), to take just two of the dozens of tabulated indicators.

Even this remarkable resource has significant limitations as an approximation of the ideal-typical HCF, however. For one thing, given its restriction to *cultural* variation, the DGCE screens out the significant geographic differences which frequently underlie cultural differences. And for another, the DGCE’s data on cultural practices derives from the Ethnographic Atlas (EA), 97% of

whose data is based on observations made after the year 1800, by which time several waves of global transformation – e.g., the spread of Buddhism, Christianity, and Islam, or the rise of European colonialism – had already effaced many historically significant cultural differences which still exercise profound, albeit largely invisible effects today. This temporal bias is presumably the source of such oddities as the EA’s (and so DGCE’s) assertion that “Spaniards” and “New Englanders” “never practiced slavery” (<https://d-place.org/parameters/EA071#1/30/153>), or that the “domestic animals” of the Americas and Australia include cattle (<http://dgce.fas.harvard.edu/EA040>), despite their having arrived on both continents only with the advent of European colonization.

As such, the HCF would complement and augment efforts like the DGCE by offering a wider range of indicators, branching out beyond cultural variables to also encompass other factors that assuredly had a significant influence on human development, such as geographical dynamics. That said, to re-iterate, our framework is intended as illustrative rather than exhaustive. Indeed, such are the complexities of the world and the causes impinging upon human history, as alluded to above, we doubt that a truly exhaustive framework is indeed possible or perhaps even desirable (given how conceptually diffuse and unwieldy it could become). As such, we are content to offer a framework that at least gives a good account of the incredible *scope* of factors that are likely to have shaped human flourishing – and human psychology more broadly – over the centuries.

In what follows, we begin with indicators that were significant for enduring differences that emerged within human populations already in prehistoric times, and gradually move forward in time to take in later significant developments. We have chosen indicators which are, in principle, amenable to quantitative assessment, even if such data are not available at present. Ideally, researchers hoping to understand the causes of contemporary cross-cultural variation flourishing would control for the background influence of these historically significant factors, or, failing that, would recognize them as potential important sources of unmeasured confounding.

### 1.6 An objection forestalled

Before we turn to the candidates for inclusion in a historical comparison framework, we should consider and forestall an important potential objection to this project as a whole. Some readers might worry that any effort to construct a historical account of the differential development of the world’s cultures is intrinsically and chauvinistically Eurocentric, implicitly amounting to a justification for colonialism or even racism. We are sensitive to this concern, but think it misses the mark in at least two ways: first, cross-cultural variation on many of the historically significant indicators we consider below was a matter of luck rather than any innate resources or superior willpower: to the extent that differences in geography (navigable waterways), resources (coal beds), or even culture (as in the date of adoption of the MFP, discussed above) conferred lasting advantages to some regions rather than others, that undermines rather than strengthens the case for the intrinsic desert of the societies that are economically, militarily, and culturally dominant today.

Second, our aim here is not to justify any particular historical outcome or contemporary state of affairs, but simply to more fully understand how some aspects of the global distribution of flourishing and its determinants have come to be the way they are. We make no assumption that the WEIRD world is either history’s inexorable destination or the pinnacle of present flourishing.

Indeed, given the present fact of substantial within- and between-country heterogeneity across domains of flourishing (Höltge et al., 2022), there is good reason to expect that historical factors which promote one dimension or determinant of flourishing today might well do so only at the expense of others. (For further discussion of potential tradeoffs among flourishing domains, cf. Case et al., 2023.) And finally, though this is not our primary concern here, we also take it that policymakers and activists who hope to promote global flourishing in the future will do well to understand the past's pervasive influence on the present.

## 2. Geography

On geological timescales, geography is inconstant: the continents drift about the globe, mountains soar and crumble, oceans rise and fall. Nonetheless, since modern humans emerged from Africa fifty to one-hundred-thousand years ago (Reich, 2018), the shape, orientation, relative distances, and general climate of the Earth's landmass have remained relatively constant. The major exception to this is in the high northern latitudes, which as recently as 13,000 years ago were covered with enormous glaciers, which rendered them impassable and uninhabitable. Nonetheless, even the global warming that launched our current "inter-glacial" period has not markedly changed the world's climate, at least in comparison with conditions that prevailed, e.g., in the late-Cretaceous period, when sea levels were so high that Europe was reduced to a scattered archipelago (Jianu & Weishampel, 2011), and mosasaurs cavorted in the great inland sea which bisected North America (Everhart, 2017).

In view of the fact that many contemporary social scientists will be accustomed to tracking the outcomes of environmental or behavioral exposures across months, weeks, or even hours, it is important to keep in view just how brief a timespan the whole of human history is, even dating from our species' dispersal from Africa. As James McPhee noted, "Geologists will sometimes use the calendar year as a unit to represent the time scale" of the history of Earth, "and in such terms the Precambrian" – the period running from the Earth's initial formation 4.5 billion years ago until the Cambrian Explosion ca. 500 million years ago – "runs from New Year's Day until well after Halloween. Dinosaurs appear in the middle of December and are gone the day after Christmas. The last ice sheet melts on December 31<sup>st</sup> at one minute before midnight, and the Roman empire lasts five seconds" (1998: p. 89). The entire period under consideration here takes place during that final minute – two at the outside – of the geologist's compressed time scale. In world-historical terms, mammoths and smilodons were with us a few deep breaths ago, and Charlemagne's afterimage is still fading from our collective retinas.

Geography thus represents something of a constant, background fixture in humanity's experience of the world, as well as one of the most important influences on the trajectory and development of human technology, health, wealth, and culture more broadly. This is a thesis with a checkered past, to be sure, notably in European speculation that the mildness and abundance of equatorial climates rendered their inhabitants indolent and subservient (Montesquieu, 1995 [1748]: books 14-19). Nonetheless, recent scholarship on the role of geography in shaping and channeling human cultural evolution has put the field on a stronger empirical footing, as for example research and theory included within the emergent paradigm/discipline of "geographical psychology" (Rentfrow, 2020).



### 2.1 *The density of navigable waterways*

We have already considered Thomas Sowell's emphasis on the importance of navigable waterways for a population's cultural and economic development: broad, equable rivers flowing to protected natural harbors facilitate trade and other forms of cultural exchange; narrow rivers plunging down steep rapids to jagged coasts frustrate them. Norman Davies, reflecting on the same point, observed, "Caravans on the ancient silk route from China needed a year or more to cross the body of Asia. Yet from time immemorial any fit and reasonably enterprising traveler has been able to move across Europe in a matter of weeks, if not days" (1997: p. 98). (Of course, these riverways also facilitate invasion, as the Anglo-Saxons, Franks, and other early-medieval Europeans discovered to their peril when Vikings began plundering along the Thames, Seine, and Rhine in the ninth century (Harris, 2021: p. 222-257).)

So too, the prevalence of mountains, dense jungle, or deserts has substantial implications for the kinds of human cultures which will tend to arise in a given area: prior to the advent of trains, planes, and automobiles (and arguably to a great extent even after), the less hospitable a region is to dense settlement, and the more geographically isolated, the greater the barriers to technological and economic development or cultural exchanges. A desideratum for future cross-cultural research is a database collating data for particular regions about the ratio of surface area to various geographically significant features, such as or altitude change or navigable waterways, as well as the latter's proximity to arable land and mineral resources, which could then be compared to contemporary flourishing outcomes.

How might researchers go about constructing a dataset on, e.g. the density of navigable waterways around 1800 CE? One place to start might be with the United Nations Economic Commission for Europe, which has compiled the lengths of inland navigable waterways (excluding harbors) for 21 principally European countries as of 2020 (United Nations Economic Commission for Europe, 2020). We could go some distance toward the desired dataset for these 21 countries by adding to these figures the total length of a country's maritime harbors, and then dividing that figure by its total surface area. Nonetheless, even that would represent only a very rough approximation of the indicator of interest here, as the extent of both navigable inland waterways and harbors has increased dramatically over time, through, e.g., damming, dredging, and canal-construction projects (Davies et al., 2023). Reconstructing the extent of navigable waterways in the year 1800 would require detailed historical investigation to peel away the influence of such hydro-engineering projects as well as to account for the natural evolution of the navigability a region's rivers and harbors.

### 2.2 *Cows, crops, and coal: The distribution of key resources*

In *Guns, Germs, and Steel*, the anthropologist Jared Diamond drew attention to the significance of a number of hitherto neglected geographical factors in shaping the rise to global dominance of Eurasian civilizations. For instance, Diamond pointed out that a majority of large domesticable animals are native to Eurasia, while not a single of the fourteen species of "big herbivorous domesticated animals" is native to sub-Saharan Africa (1999: p. 157-175, esp. 160). This African exceptionalism might be due in part to the far longer history of co-evolution with humans which Africa's fauna enjoyed, a shared history which might have made them more intrinsically wary of us wily featherless bipeds, and which perhaps accounts for the greater survival of African megafauna compared to their cousins elsewhere, such as the mammoths and mastodons of

Eurasia and N. America, the giant sloths of S. America, or the giant kangaroos of Australia – (Remmert, 1982).

Happily, the native geographical distributions of large domesticable animals are relatively easy to pin down: Table 9.1 in Diamond (1997: p. 160), for instance, describes the natural ranges of the wild ancestors of the fourteen species of big herbivorous mammals domesticated by humans. It would be worthwhile to assess how much of the variance in the contemporary distribution of flourishing domains or determinants can be explained by the number of large domesticable animals native to a particular country or region. We might wonder in particular whether there are additive effects from the presence of multiple such animals, or dose-response effects from having been able to adopt them early rather than wait for them to diffuse across continents.

Diamond also stressed the significance of the East-West orientation of the Eurasian landmass, as compared with the North-South orientation of Africa or the Americas. This East-West orientation confines most of the continent within a narrower range of latitudes than that found in either the Americas or Africa, and most of that range lies within the natural habits of the cultivable grains. This conferred on Eurasia the advantage that crops domesticated in one region could be grown almost anywhere on the continent (Diamond, 1999: p. 176-191). Both the prevalence of domesticable animals in Eurasia and the ease with which crops spread across it arguably offered substantial advantages to civilizations on that continent compared to those elsewhere, allowing them to develop larger food surpluses and denser settlements, and so to achieve greater economic specialization and its corresponding technological gains, earlier than elsewhere in the world.

Furthermore, geography played an important role in the development of the energy-intensive technologies such as steam engines which powered the Industrial Revolution and allowed Europe in particular to break free from the Malthusian trap that had constrained all prior humans. (On the “Malthusian trap,” cf. Fukuyama, 2011). Steam engines could only generate sufficient force to enable long-distance transportation or mass manufacturing if powered by energy-rich fuel, notably coal, which also played a critical role in the development of processes to smelt iron into sturdier steel (Allen, 2009; Pomeranz, 2004: p. 7, 23 *et passim*). Significantly, most of the world’s coal deposits lie in bands that run across North America, northern Europe and Russia, and northwest China (with an important exception in Eastern Australia), with notably little coal in South America or Africa.

This distribution has its roots in the Carboniferous Period (359-299 mya), when the first vast forests laid down the majority of the world’s coal deposits, possibly because bacteria and fungi had not yet developed the enzymes that allow them to effectively digest wood today (Floudas et al., 2012). These forests were limited to land now lying in North America, Eurasia, and Eastern Australia, because most of the world’s southern landmass (the future supercontinent Gondwanaland), including Africa, South America, much of Australia, and Antarctica, lay near the South Pole under ice caps (Visser, 1987).

Even among the northern regions endowed with substantial coal, Europe enjoyed significant geographical advantages. For instance, 61% of China’s rich coal deposits are located in its far northwest, thousands of miles from the southern concentrations of pre-modern urban and industrial development along the Yangtze River (Pomeranz, 2004: p. 63-64). By contrast, Pomeranz notes, “some of Europe’s largest coal deposits were located in a much more promising

area: in Britain. This placed them near excellent water transport, Europe's most commercially dynamic economy, lots of skilled craftspeople in other areas, and...a society that had faced a major shortage of firewood by 1600 if not before" (2004: p. 66). The rise to dominance of European civilization – and especially that of northern Europe and its colonial diasporas – occurred in no small part because it happened to sit directly above some of the world's richest coal seams at precisely the moment (ca. 1800 AD) when coal became a critical economic input.

Measures of contemporary coal reserves are not hard to find; the World Coal Quality Inventory (2019) is a good place to start. Nonetheless, it offers only rough approximations of the extent of coal reserves circa 1800 CE, since many of those have been mined and consumed in the intervening centuries, and since coal seams that would have been inaccessible in 1800 are now mined using techniques such as mountaintop removal mining that were not developed until the 1960s (Copeland, 2004: p. 39). Reconstructing the coal reserves that were accessible to existing mining techniques in particular regions at the end of the eighteenth century would thus require further painstaking and highly local historical research.

### 2.3 Geography and genes: The case of "Blue Zones"

Finally, there are good reasons to think that the habitat size and relative isolation of one's ancestors might affect one's flourishing – and especially longevity – today, albeit by way of its effects on one's genetic inheritance. For instance, the last decade or so has seen an explosion of interest, much of it driven by the journalist Dan Buettner (Buettner, 2010; Buettner, 2015; Buettner, 2022) in "Blue Zones," namely "Ogliastra in Sardinia, Okinawa in Japan, the Nicoya peninsula in Costa Rica, and the island of Ikaria in Greece" (Poulain, et al., 2013), which are characterized by unusual human longevity. Some researchers propose that the denizens of the Blue Zones live longer because of their diets, their deep friendships, and their relaxed lifestyles (Buettner et al., 2016; Poulain, et al., 2013). (A fifth unusually long-lived population of Seventh-Day Adventists in Loma Linda, CA is sometimes added as well, but it differs from the others in many respects, both in terms of its recent (20<sup>th</sup> century) constitution and in important aspects of its lifestyle (e.g., no red wine or coffee), and so will be excluded from consideration here.)

Researchers do occasionally note that Blue Zones are "geographically and/or historically isolated (islands and mountainous regions)" (Poulain, et al., 2013), but little scholarship on and (so far as we can tell) no public attention to the topic has considered the possibility that geographically induced genetic variation itself might be a causal factor in promoting the Blue Zoners' longevity. This is odd on its face, because that is exactly what would be predicted by the well-established "evolutionary theory of aging," according to which "increased longevity of insular endemic species [is] part of an evolutionary strategy that pushes the islands' endemics to a slower life cycle, due to the absence of predators and the limited resources" (Jordana et al., 2012). Greater insular longevity is well-documented in many species and epochs, e.g., in dwarf deer (Miskiewicz & Van Der Geer, 2022), lizards (Rotger et al., 2023), rodents (Casanovas-Vilar, 2011), elephants (Köhler et al., 2021), tortoises (Quesada et al., 2019), and, strikingly if somewhat speculatively, in the hominid *Homo floresiensis*, the famous Filipino "Hobbit," which survived on the island of Java until about 18,000 years ago, and whose apparent slow growth has suggested to some researchers that it had an unusually long lifespan compared to other hominids (Ruiz-Torres & Beier, 2008: p. 112).

The importance of insular longevity also features prominently in at least one paper on Blue Zones in particular, which found that “21 Mediterranean islands” showed greater longevity compared with populations in nearby mainland Greece, despite their similar lifestyles and the striking fact that a “history of the common cardiometabolic factors (hypertension, diabetes and hyper-cholesterolemia) was higher among islanders” and that “islanders had higher depression scores, when compared to their counterparts from continental Mani region” (Mariolis et al., 2016: p. 288). This is consistent with the islanders’ greater longevity being a function, not simply or even primarily of different health behaviors, but also – as for dwarf elephants, deer, tortoises, and others – of a slower underlying biological clock. Cynically, we might suspect that the neglect of the role of geography in popular presentations of the Blue Zone phenomenon stems from the fact that islands are harder to package in the supermarket than the Mediterranean diet.

Nonetheless, there may be several persuasive reasons why scholarship into phenomena like “Blue Zones” has thus far paid relatively little attention to the potential role of genetic variation. Firstly, although Henrich and colleagues have now successfully persuaded psychology to attend to cross-cultural variation, as noted above, their argument for consideration of cross-temporal dynamics is much newer and less well-established. While exploring the *current* uniqueness of Blue Zones is easily accommodated within a conventional cross-cultural paradigm, one suspects that wrestling with historical processes such as the roots of cross-cultural genetic diversity is more of a stretch for many psychologists. We might also wonder whether the frequent mischaracterization of potentially genetic explanations for differential human outcomes as either overlooking contextual factors that also influence such outcomes, or even as having “eugenicist” intentions and consequences, has also dampened enthusiasm for such scholarship.

Nevertheless, researchers interested in the roots of longevity, however, would do well to consider whether there might be deeper geographic – and perhaps ultimately genetic – constraints on these significant differences among human populations. This does not mean (with rare exemptions) identifying a particular gene “for” a given outcome; rather, research attention in recent years has focused on genome-wide association studies, in which millions of genetic markers – called single nucleotide polymorphisms (SNPs) – are associated with scores on a phenotype of interest (without considering hypotheses regarding the underlying biological mechanisms which give rise to the phenotype). Such research has established that most common human emotional and behavioral traits are not influenced by a few genes with large effects, but rather by hundreds to thousands of SNPs with small effects. However, this work is in its infancy, and geneticists still have a long way to go in understanding how assemblages of tens of thousands of SNPs influence complex psychological and behavioral traits in humans (cf. Plomin, 2019), much less in connecting the resulting polygenic risk scores to inheritances from ancient human populations, including Neanderthals or Denisovans (cf. Reich, 2018). Nonetheless, the substantial progress made to-date augurs still more important discoveries to come, which scholars hoping to understand global differences in contemporary health, wealth, or happiness will ignore to their cost.

The point of this section on the enduring influence of now (apparently) irrelevant geographical factors is not to assert anything like a geographical determinism – land is but one of many forces shaping human societies – nor to imply that contemporary comparative research has ignored the role of geography, which figures prominently in early sections of the GCF. Rather, our point is to highlight a range of geographical factors which, while not particularly salient for

most people living today – and especially not for researchers in the North Atlantic and its colonial offshoots – were once decisive factors in enabling several civilizations across Eurasia to reach the point of technological and economic development at which they could begin to effectively begin to transcend geographic constraints. Contemporary differences in flourishing and its determinants, particularly those between Eurasian civilizations and those in Africa, the Americas, or Oceania trace their roots at least in part to the way that geography has from time immemorial shaped the technological, economic, and cultural trajectories of those continents.

### 3. Migration and conquest

#### 3.1 Neanderthal and Denisovan gene introgression

Past configurations of human settlement – notably including patterns of mass migration and conquest – also exercise considerable influence on the present by way of their influence on our genetic and cultural inheritance. For instance, when *Homo sapiens* emerged from Africa, they entered regions long populated by other members of the genus *Homo*, notably the Neanderthals in Europe and the Denisovans in Central Asia (Pappagianni & Morse, 2013; Reich, 2018). Modern humans not only competed with these cousins, but also interbred with them. One important source of genetic variance among modern humans is thus the extent of their inheritance of genetic material from non-human hominids.

Recent comparisons of modern human DNA with DNA recovered from Neanderthal skeletons indicate that “1–4% of the genome of present-day human populations outside of Africa was inherited from Neanderthals” – sub-Saharan Africans evince essentially no such history of interbreeding – and that Neanderthal gene introgression is associated with modern human variations in skin and hair pigmentation; metabolism; immunity, including, significantly, apparent resistance to coronaviruses in East Asian populations; and even personality (Reilly et al., 2022). One genome-wide association (GWA) study examined “136 phenotypes across over 112,000 individuals of European ancestry included in the UK Biobank and found associations between Neanderthal variants and hair and skin pigmentation, tanning, sunburn incidence, mood, smoking, height, chronotype and heart rate” (Reilly et al., 2022: R976, citing Danneman & Kelso, 2017). And Gregory et al. (2021) found that Neanderthal genetic admixture was inversely correlated with schizophrenia diagnosis and severity “in four independent case-control datasets totaling 9362 individuals.”

The influence of the Denisovans on modern humans is relatively obscure, since these hominid cousins were only discovered in 2010, and are known today only from a handful of bones, which have happily yielded one relatively complete genome (Zhang et al., 2021). Strong Denisovan influence on at least two modern human populations is well-documented, however. First, modern Tibetans have inherited a gene – *EPAS1* – from Denisovans, which facilitates breathing in hypoxic (high-altitude) environments (Huerta et al., 2014). And, perhaps more significantly for research on flourishing and its determinants, Austronesian populations in Oceania – especially Papuans in New Guinea – have inherited up to 5% of their DNA from Denisovans (Sankararaman et al., 2016). A recent GWA study concluded “that Denisovan introgression [in Austronesian populations] has facilitated human adaptation by serving as a reservoir of resistance alleles against pathogens” (Choin et al., 2021: p. 587).

As we have seen, rapid improvements in genome sequencing and the growing availability of whole-genome data on ancient hominins are already empowering GWA studies on the enduring

role of non-human gene introgression in shaping cross-cultural differences in the determinants and even domains of flourishing. Gregory et al. (2017) have even developed a polygenic risk score to assess an individual's Neanderthal genetic inheritance ("Neanderscore"), with potential applications in many areas related not only to differences in health but also in personality. The coming years and decades should deliver dramatic growth in the breadth and depth of such GWA studies using increasingly refined measures of non-human gene introgression.

### 3.2 Migration and propensities for violence

Population movements not only shapes the present through differential gene inflows, but perhaps still more profoundly through the lingering effects of cultures imported either through migration or conquest. We might expect to see dose-response effects either from duration or intensity of the cross-cultural exposure, and this is just what we find in many times and places. As Sowell observes,

It was precisely the southeastern part of Britain – England – that was conquered earliest and most thoroughly incorporated into the Roman Empire, which developed into the most advanced part of the British Isles. Centuries later, during the colonial era in India and Ceylon, members of the same racial or ethnic groups developed very different levels of skills, education, and economic initiative, according to whether they lived for long under the direct rule of the British, or in regions that held out as independent...Similarly, in Sri Lanka, those Sinhalese who lived in regions conquered earlier by the British continued, generations later, to outperform their fellow Sinhalese from the Kandyan highlands that remained independent longer (1994: p. 65).

Sowell also notes that, conversely, "highlands, from Scotland to Southeast Asia, allowed indigenous upland peoples to hold out longer in independent...enclaves" (1994: p. 65).

This effect of extended exposure to a technologically superior conqueror is likely confounded by other factors, particularly geographic, which also influence economic and technological development and broader cross-cultural exchange: after all, the Romans came to the south of Britain first not least because of its proximity to the European continent across the narrow English Channel, while the slow pace of foreign cultural penetration into highland regions is partly a function of the broader barriers to travel and trade which render all economic development more challenging there than in lowlands. Nonetheless, the frequency with which such dose-response effects from the duration of cross-cultural exposure can be seen in relations of conquest suggests that it has independent effects apart from geography.

The slower pace of cultural, economic, and technological change in northern Great Britain relative to the south arguably had important implications for the development of American culture as well. Significant regional variation in psychology and culture across contemporary America likely derives in part from cultural differences among the European – and even specifically British – migrants who first settled in America during the colonial period (Fischer, 1989). Cohen et al. (1996) offered experimental evidence that non-Hispanic white men from the American South were more likely than those from the North to respond to an insult from a stranger with aggression. They hypothesized that this was owing in part to the residual survival in the Deep South of a "culture of honor" transplanted from "the border country of Britain," notably Scotland and the Scottish enclave of Ulster in Ireland (Cohen et al., 1996: p. 946).

More recently, Pauline Grosjean has shown that “counties [in the Deep South] that had more Scotch-Irish settlers in 1790 now have much higher homicide rates in the twenty-first century, even after statistically removing the current influences of poverty, race, inequality, etc.” (Henrich, 2015: p. 271, discussing Grosjean, 2014). Grosjean (2014) proposes that “a culture of violence was transmitted [from those early settlers] to subsequent generations—but only in the South and, more generally, where historical institutional quality was low. The interpretation is that the Scots-Irish culture of honor prevailed and persisted as an adaptive behavior to weak institutions,” particularly related to criminal justice, in the backwoods of the American South.

### 3.3 *The legacy of slavery*

Another factor related to conquest and migration which is salient for understanding regional differences within the contemporary United States, among many other parts of the world, is the duration and intensity of its past adoption of slavery. Today, there is relatively little global variation in the prevalence of *legalized* slavery, which is officially legal in none of the world’s 195 or so countries. (This does not, of course, mean that slavery is absent from all of them, and indeed many countries do not formally criminalize the practice.) Nonetheless, the success of global abolitionism marks a sea-change from the status quo just two centuries ago, when slavery was still common across much of the globe.

Already in the 1830’s, Alexis de Tocqueville associated important cultural and economic differences between the neighboring American states of Kentucky and Ohio (the former a slave-state and the latter, free) with their approaches to slavery:

Upon the left bank of the Ohio labor is confounded with the idea of slavery, upon the right bank it is identified with that of prosperity and improvement; on the one side it is degraded, on the other it is honored; on the former territory no white laborers can be found, for they would be afraid of assimilating themselves to the negroes; on the latter no one is idle, for the white population extends its activity and its intelligence to every kind of employment (Tocqueville, 2000: ch. 18, p. 4).

Slavery’s chilling effects on economic development and on cultural attitudes to labor are not limited to regions in which it is presently practiced, but also exercises lingering, baleful economic and political effects which long survive its disappearance (Acharya et al., 2016; Bleakley & Rhode, 2022; Nunn, 2007). (This is consistent, needless to say, with slavery having also conferred substantial unearned economic benefits on its practitioners and at least some of their heirs.)

Slavery was unequally distributed even within regions which permitted it – e.g., having penetrated more thoroughly into the American Deep South than into the Midatlantic – and was also abolished earlier in some places around the globe than in others. This uneven exposure yields a dose-response effect in slavery’s enduring social, economic, and political legacies (Acharya et al., 2016). A desideratum for future cross-cultural research into differences in psychology, politics, or economics is an index of a state or region’s overall exposure to slave labor (up to and including the present), incorporating both measures of intensity and of duration.

Accounting for the many contemporary differences between, e.g., England and Scotland or the American South and North in the constituents and determinants of flourishing requires attending to the enduring influence of factors that now lie in the distant past, including the timing of a given region’s colonization by the Roman Empire, or regional rates of eighteenth-century Scots-Irish immigration, or a given area’s prior exposure to slavery. In these ways, doubtless

among many others, the past remains sedimented in the present. Future cross-cultural research on flourishing would benefit from closer attention to – and more rigorous measures of – the role of conquest and migration, both in its duration and intensity, in shaping contemporary culture.

## 4. Religion

### 4.1 From primary to secondary religion

The contemporary religious landscape is dominated by a handful of “secondary” or “world religions” which emerged from older “local” or “primary religions” in (or in the aftermath of) Karl Jaspers’s “Axial Age (*Achsenzeit*).” That is, the established narrative is that there was a roughly simultaneous rise, ca. 500 BCE, of universalistic and metaphysically sophisticated religious cultures across the Eurasian landmass, notably through the lives and teachings of Zoroaster, Confucius, Lao-Tsu, the Buddha, the sages of the Indian *Upanishads*, the Israelite prophets, and Plato and Aristotle in Greece (Bellah, 2017; Jaspers, 1953). The largest of the surviving post-Axial-Age religions, Christianity, commands the allegiance of approximately 31.7% of the global population, followed by Islam (25%), Hinduism (15%), Buddhism (6.6%), and the smaller communions of Sikhism (0.3%) and Judaism (0.18%). Adherents of primary – or “folk” – religions only make up about 5.6% of the world at present (Pew Research Center, 2022).

It was not always thus, however. Prior to the Axial Age revolutions, religious practice was fundamentally oriented to the reconciliation of human communities to one another and to a wider cosmic order through cultic practices (above all sacrifice) to spiritual realities populated by a variety of gods, numens, and ghosts (Hayden, 2003; Lincoln, 1986). (Let’s say, with Émile Durkheim, that religion is “a unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden – beliefs and practices which unite into one single moral community...all those who adhere to them” (1912: p. 1138).) Australia’s Aborigines, for instance, have a fair claim to possess the greatest cultural continuity with our species’ prehistoric past of any human society, having lived in relative isolation for nearly 50,000 years until their sudden contact with European explorers in the modern period (Bellah, 2013: p. 138). The Walpiri of central Australia believe that the spirits of the dead linger on earth, frequently communicating with the living through dreams, and they lend such ghosts ritual aid in joining the ancestral spirits in the “Dreaming” or “Everywhen” (*djugurba*) which underlies quotidian reality (Clarke, 2007). Similarly, the Kalapalo of Brazil believe that “after death, people go to the sky village and become powerful beings,” the divine spirits with whom Kalapalo religious rites aim to foster communion (Bellah, 2013: p. 139-42).

As Joseph Henrich emphasizes, “The gods of hunter-gatherers tended to be weak, whimsical, and not particularly moral...In the Bay of Bengal, for example, the Andaman Islanders’ storm god would rage against anyone who melted beeswax during the cicadas’ songs. The islanders thought that melting beeswax was perfectly fine, and would sometimes do it anyway, but only if they thought the storm god couldn’t see them” (2020: p. 131). Even mighty Zeus was unaware of what was happening while he slept, and was enraged to discover that during one of his naps Hera had “roused the blasts of cruel winds over the face of the deep, and thereafter didst bear [Herakles] away unto well-peopled Cos” (Homer, 1924: 14.250).

And finally, as Henrich notes, “although hunter-gatherers often believed in some form of afterlife, there was rarely any connection between proper behavior in this life – e.g., not stealing food – and the quality of one’s afterlife” (2020: p. 131). Indeed, it is striking how often archaic



religions simply take for granted that the afterlife is a realm of uniform dreariness, as in the lament of Homer's Achilles ("I should choose, so I might live on earth, to serve as the hireling of another of some portionless man whose livelihood was but small, rather than to be lord over all the dead that have perished" (Homer, 1919: 11.489-90)), or of the Psalmist ("In Sheol, who will praise [God]?" (Ps. 6:5)).

The Axial Age or "secondary" religions emerged from within these cult-centered, this-worldly, and relatively amoral primary religions. They were marked by some important traits which are now near-universal in human religious culture – notably their central fixation on heavily moralizing religious texts – but which, in the perspective of the development of religious practices since the Paleolithic period (Wunn, 2010), are still relatively novel innovations. Indeed, the transition has been so radical that some scholars today propose discarding the term "religion" altogether in discussions of classical or earlier societies (Boyarin, 2018; Nongbri, 2013).

Perhaps the most critical Axial-Age religious distinctive is the very notion of God beyond the gods, not a merely more powerful and long-lived being within the world, but the transcendent and infinite source of all Being, Goodness, and Truth. This notion is expressed in many and various idioms across the Axial Age faiths, whether Isaiah's "Creator of the ends of the earth" (Isa. 40:28); Kṛṣṇa's declaration, in the *Bhagavad Gīta*, "The entire universe is suspended from me as my necklace of jewels" (2007: 7.6-7); or Aristotle's description in *Metaphysics* Λ of God as pure "thought which is the thought of thought," who moves the cosmos by being loved by it. Even Buddhism, initially so wary of creator deities, nurtured its own "theistic" turn, particularly in traditions influenced by the Cittamatra or "Mind-Only" school of the Mahayana, as in the great Japanese Zen master Dōgen's pantheistic insistence, "Grass, trees, and lands are mind; thus they are sentient beings. Because they are sentient beings they are Buddha-nature. Sun, moon, and stars are mind; thus they are sentient beings; they are Buddha-nature" (2013: p. 134).

More broadly, Axial Age religions are defined, as Miroslav Volf puts it, by a "'two worlds' account of reality," which distinguishes between "the transcendent and the mundane [realms], and give[s] primacy to the transcendent" (2015: p. 68). This emphasis on the transcendent gives world religions a special concern with "the good beyond ordinary flourishing without necessarily negating it." The secondary religions typically regard the transition from the mundane to the transcendent realm – paradigmatically at death – in strongly moral terms, and see God as an agent of judgment. Such a "contingent afterlife," can take the form of assignment to Heaven or Hell, or of successive rebirths determined by the weight of one's accumulated karma. This moralizing turn is reinforced by the increasing primacy in secondary religion of Scripture – the Vedas, the Tripitaka, the Old and New Testament, the Qur'an – over cult. "I desire mercy and not sacrifice," the God of Israel tells the prophet Hosea (Hos. 6:6), while Kṛṣṇa admonishes, "The offering of wisdom is better than any material offering, Arjuna; for the goal of all work is spiritual wisdom" (*Bhagavad Gīta*, 2007: 4.33).

#### 4.2 Secondary religion and cultural change

This transition to secondary religions has had profound and enduring cultural implications. The world over, commitment to a "secondary" religion is associated with higher levels of trustworthiness, generosity, and cooperation than are either irreligion or folk religion (Haidt, 2012: p. 308-309; Ruffle & Sosis, 2006; Tan & Vogel, 2008). Henrich describes a particularly interesting experiment designed to assess bias against out-group members across a range of

religious and cultural settings, including a number of hunter-gatherer tribes: “Overall, moving from little or no belief in supernatural punishment to the strongest beliefs in punishment *reduced the bias against strangers* by a factor of four to five times” (2020: p. 137). And these findings are complemented by observational evidence that, as Henrich notes, “across countries, the belief in a contingent afterlife,” i.e., in a final judgment by God or reincarnation in accord with the law of karma, “is associated with greater economic productivity and less crime...The higher the percentage of people who believe in a contingent afterlife (hell and heaven) in a country, the lower the murder rate. By contrast, the greater the percentage of people of who believe only in heaven, the *higher* the murder rate” (2020: p. 146-47).

The distinction between primary and secondary religion is still salient – if largely theoretical – today, but what is perhaps less evident is the potential for dose-response effects in the extent of a culture’s exposure to the latter. This is significant, because the world’s regions have made the transition from 100% primary religions to nearly 100% secondary (or, in the case of atheism, “post-secondary”) religion at different paces, as they diffused outward from their points of origin. Even within Europe, Christianization was a slow and uneven process: while most of the Italian peninsula was converted by the end of the fourth century CE, Christianity was not established as the official religion of the Grand Duchy of Lithuania (with accompanying mass baptisms and the demolition of the sacred groves) until the baptism of Grand Duke Jogailas in 1386, nearly a thousand years later (Rowell, 1994). And secondary religion only reached the Americas and most of sub-Saharan Africa with the rise of European colonialism in the sixteenth century.

So far as we know, a dose-response effect to the duration of exposure to secondary religion has not been explored empirically to-date. However, in view of the strong evidence for analogous dose-response effects to exposure to the Church’s MFP (see above), there is good reason to expect that regions with longer continuous exposure to secondary religions will reflect a deeper cultural transformation by them than those more recently converted. One intuitive index of this dose-response effect is the prevalence of religious syncretism or the outright survival of primary (sc. “pagan”) religions; in Lithuania, the old religions survived well into the early modern period (Young, 2022), and, as James Frazer (1890) famously documented, thrived in much of northern Europe under a veneer of Christianity into the late nineteenth century.

We already considered above the effects of the diffusion of the Church’s MFP on the rise of the WEIRD world. Further downstream still, the effects of the uneven spread of the Protestant Reformation – what Henrich describes as “the WEIRDest Religion” – are still with us as well. Already in 1902, Max Weber proposed that Protestantism played an important role in catalyzing the scientific and industrial revolutions (Weber, 2012). “Over and above the impact of kinship intensity or Church dosage,” Henrich notes, “countries with Protestant majorities show even higher individualism, greater impersonal trust, and a stronger emphasis on creativity compared to majority Catholic countries. On average, people in Protestant countries gave more anonymous blood donations, and their diplomats accumulated even fewer unpaid parking tickets” (Henrich, 2020: p. 418).

Protestantism also catalyzed the spread of literacy: “Even as late as 1900, the higher the percentage of Protestants in a country, the higher the rate of literacy...Overall, if we know the percentage of Protestants in a country, we can account for about half of the cross-national variation in literacy at the dawn of the 20<sup>th</sup> century” (Henrich, 2020: p. 10). Here too, a quasi-natural experiment allows us to infer the causal role of Protestantism in this association: “In

Prussia, Protestantism spread from Wittenberg like the ripples created by tossing a stone in a pond...Because of this, the further a Prussian county was from Wittenberg [where Martin Luther launched the Reformation in 1517] in 1871, the smaller the percentage of Protestants." And "not only do Prussian counties closer to Wittenberg have higher shares of Protestants, but those additional Protestants are associated with greater literacy and more schools" (Henrich, 2020: p. 11).

This high-level survey of some important transitions in the history of human religion is meant only to illustrate the way in which long-past religious transitions still exercise profound influences on flourishing and its determinants in the present. Researchers comparing rates of literacy, honesty, or violent crime across nations and cultures need to keep in mind that differences in these measures are artifacts in part of the date at which the peoples in a given region made the transition from primary to secondary religion; entered into communion with the Latin Christian Church headed by the Pope; or joined one of the Protestant confessions. Ideally, comparative cross-cultural flourishing research should control at least for the intensity and duration of a country's or region's exposure to, e.g., secondary religions, Latin Christianity, and Protestantism.

## 5. The HCF (as illustrated here) summarized

Here we have considered a range of factors which, while no longer operative or at least salient to the same degree as they were in the (variously) distant past, continue to exert important if subtle influences on modern societies and psychologies – though, to reiterate, our selection is illustrative rather than exhaustive, and myriad other factors could plausibly have played a similarly influential role, as indeed future scholarship will hopefully aim to elucidate. Here are the factors we have reviewed, with a few notes regarding how one might construct a dataset for them sufficient to support empirical research on their relationship to contemporary determinants and dimensions of flourishing:

- a. Geography
  - a. The ratio of navigable waterways and harbors to total surface area ca. 1800 CE.
  - b. Natural distribution of domesticable animals.
  - c. Distribution of coal reserves, ca. 1800 CE.
  - d. Geographic variation in selective pressures for extended lifespan.
- b. Migration and conquest
  - a. Regional variation in intensity of immigration (combining density and duration of settlement) by immigrant-type.
  - b. Regional variation in intensity and duration of the practice of slavery.
- c. Religion
  - a. Duration of exposure to Axial or Secondary Religion.
  - b. Duration of exposure to the MFP.
  - c. Duration of exposure to Protestantism.

## 6. Conclusion: Expanding the HCF

In this paper, we have considered some important respects – pertaining to geography and to the development of religion, kinship norms, and political culture – in which a region’s past constrains its present, and which as such should be considered in cross-cultural comparisons of flourishing and its determinants. This short list is illustrative rather than exhaustive: others could and should be added to it, such as the influence of historically hoe- or plow-oriented agriculture on contemporary gender norms, discussed in Muthukrishnan et al. (2021). Moreover, a true HCF would ideally incorporate quantitative measures of each of the indicators assessed here, which would allow for (relatively) objective comparisons among countries. This paper is not the HCF itself, but notes toward it, in the hope that its construction might illuminate the deepest causes for the differences that obtain among many of the world’s nations and regions with respect to dimensions of flourishing and its determinants.

### Authors

Brendan Case  
Harvard University  
<https://orcid.org/0000-0003-4277-8075>  
[brendan\\_case@fas.harvard.edu](mailto:brendan_case@fas.harvard.edu)

Tim Lomas  
Harvard University  
<https://orcid.org/0000-0001-9458-6185>

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Case produced a first draft, which Lomas revised and expanded. Both authors take full responsibility for the contents of the article.

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