Once Upon a Time: Introducing the Historical Values Survey[1]

FIRST DRAFT – COMMENTS MOST WELCOME

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Abstract: This article introduces the Historical Values Survey. It contains information on historically prevalent values and norms encouraging cooperation, altruism, work ethic, entrepreneurship, but also discrimination and the challenging of authority. Information on values and norms is elicited from more than 27,000 folk narratives relying on artificial intelligence. The Survey contains 36 variables and covers up to 172 countries. Folk narratives, such as legends and fairy tales, are transmitted from generation to generation virtually unchanged and thus constitute an excellent source for historically prevalent values and norms. Including the values and norms into an economic growth model documents the relevance of culture for economic development. The dataset can also be used to analyze long-term value change.

Keywords: folktales, fairy tales, culture, values, norms, economic development, values survey

JEL classification: A13, D90, K00, N30, O10, P51, Z10

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I. Introduction

Values and norms are important factors in shaping how people interact. The values and norms shared among groups of individuals can have far-reaching consequences on economic and political development. Some of the values contemporaneously held by people across the globe are regularly collected by surveys, such as the World Values Survey, but we know little about their change over longer time periods. Proponents of modernization theory claim that values and norms change as a consequence of improved living conditions (e.g. Inglehart 2018), while critics of modernization theory hold that values and norms are persistent over time (e.g. Becker 2024, Buggle & Durante 2021, Cao et al. 2021, Gorodnichenko & Roland 2011, 2017, 2020, and Williamson 2000, but also Huntington 1997 or Landes 1999). However, empirical evidence supporting that claim has been virtually non-existent as data on historically prevalent values and norms has been lacking.

This article introduces a dataset to overcome this problem: the Historical Values Survey (HistoVaS). Since we are interested in the potential relevance of values and norms for economic and political development, the focus of this dataset is on variables that have been theorized to affect development. These include norms of cooperation, altruism, work ethic, entrepreneurship, and the acceptance of entrepreneurship by non-entrepreneurs, but also norms that imply the discrimination of persons on various grounds, as well as norms that encourage challenges to authority. Norms of cooperation and altruism influence how people interact and work ethic norms are expected to determine productivity levels, whereas norms encouraging entrepreneurship are likely to affect innovation rates and technological progress. Beyond these thematic groups, we also report norms dealing with authority; norms encouraging challenging authorities may lead to holding governments to account which may, in turn, lead to better governance.

The HistoVaS introduced in this article uses folktales as its source of information. Folktales have been an important tool for transmitting values and norms across generations. This makes them ideal for inferring historic values and norms across the world. To produce the HistoVaS, we have relied on more than 27,000 folktales from 172 countries. These countries represent approximately 99 percent of the world population. The folktales were fed to Open AI's large language model GPT, alongside a set of prompts. GPT's responses to questions regarding values and norms constitute the 36 variables included in the HistoVaS database. We arrange these variables into the seven thematic groups mentioned previously and rely on

factor analysis to produce the data referring to these groups.[2] Since we are interested in historically prevalent values and norms, we include primarily folk narratives that can be traced at least to the 19th century.

This article contributes to various literatures. Economists have become increasingly interested in the deep determinants of economic development. Spolaore and Wacziarg (2013) stress that it is not only the immovable geography that has an important impact on economic growth, but also the people who move, i.e. migrants (see also Putterman and Weil 2010). To date, it is a challenge to determine the relative importance of the various possible transmission channels by which human capital impacts economic development. Data from the HistoVaS shows that historically prevalent values and norms have long-lasting effects on societies as their contemporaneous growth rates are significantly associated with those values and norms.

Economic historians have long debated why the "great divergence" originated in the northwestern part of Europe. McCloskey (2010) points at "bourgeois virtues" whereas Mokyr (2016) refers to a "culture of growth".[3] A closely related strand of literature focuses on the so-called protestant ethic famously proposed by Max Weber (Becker et al. 2024 with a recent survey regarding the relationship between religion and economic development; McClelland 1961 with an early contribution on the "achievement motive"). We elicit important aspects of what we refer to as work ethic, such as encouragement of hard work, honesty, patience, punctuality and so on. Among the seven factors that we rely upon to group the 36 variables contained in the HistoVaS, the factor depicting work ethic has the largest coefficient in a standard growth model, confirming its importance for economic development.

Our paper also contributes to the field of cultural economics, an economic sub-discipline that has established itself and grown increasingly important over the last

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2 For all seven thematic groups we rely exclusively on the first factor, as the eigenvalue of all subsequent factors is smaller than one.

3 Mokyr (2016, 121f.) agrees that trust, loyalty, and public-mindedness as part of a cooperation ethic and an entrepreneurial or bourgeois culture in the Weberian sense (and as taken up by McCloskey) are necessary components for sustained growth, but insists that they are not sufficient. He adds that there must be new ideas on how to produce goods. The variables contained in the HistoVaS now enable us to test these conjectures empirically and ascertain the relative importance of single variables for economic growth.

decade. Many economists endorse the definition of culture proposed by Guiso et al. (2006) as "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation". Until now, identifying which beliefs and values were transmitted relatively unchanged over generations has been close to impossible. The first wave of the World Values Survey appeared in 1981 and thus covers a period of less than 50 years. As this approach does not cover more than three generations, however, the HistoVaS promises to be useful in stretching the time-horizon to study both the long-term effects of culture as well as its stability over time.

The study most similar to ours is Michalopoulos and Xue (2021) who analyze the motifs of folktales and are able to establish a link between the habitat of various folktale traditions and the motifs found in their folktales. In folktale research, motifs are defined as "the smallest element in a tale having a power to persist in tradition" (Thompson 1946, 415).[4] Instead of counting the presence of these smallest elements in fairy tales, our approach relies on extracting values and norms from folktales by taking the overall messages of these stories explicitly into account. This enables us to ask whether the values and norms endorsed in them have had long-term consequences on the development of societies today.[5]

In economics, narratives have started to occupy an important place. Shiller (e.g. 2020) describes how the framing of certain events can have far-reaching

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4 Examples for such motifs are "during an eclipse or at sunset the frog swallows the light" and "the character turns into a needle, trashcan, small insect. A woman swallows it and becomes pregnant". Some fairy tale experts criticize the attempts to categorize folktales on the basis of such catalogs. Zipes (2006, 129), for example, writes: "But I believe that the descriptions of the tale types are limited and often misleading. Nor do they indicate anything about the meaning of the diverse types, why they spread, who generates and spreads them, and how they become so culturally relevant in different societies in the evolution of the genre."

5 The analysis by Michalopoulos and Xue (2021) is based on a dataset by Berezkin who coded thousands of folktales on his own. As impressive as this is, the coding remains both non-transparent and subjective. For example, according to Berezkin, Russia would be the most moral country in the world. In addition, Berezkin is primarily interested in the diffusion of folktales geographically, a question only marginally relevant in our context. The focus on motifs seems apt for establishing a link between the contents of fairy tales and the respective habitat in which they are told. But given their scattered and fragmented nature, motifs appear to be less adequate for detecting moral messages and the values and norms that are implied.

consequences for individual behavior and collective outcomes. In a sense, our paper also contributes to that literature as folktales are one important type of narrative, especially in the period anteceding television and virtual reality. In this paper, we show that the values and norm contained in them may influence attitudes as well as behavior for an extended period.

The remainder of the paper is organized as follows: Section II defines the central concepts used in this article and argues that folktales are a rich source for eliciting historically prevalent values and norms. Our main research question is whether values and norms have a discernible impact on societies' growth paths. In Section III, we elucidate our choice of values and norms in light of this research question. Section IV describes the corpus of folktales, the data-collection process and contains some descriptive statistics. Results are described in Section V. There, we analyze the associations between historically prevalent values and norms and contemporaneous attitudes, individual behavior and collective outcomes. In this section, we also show that the values and norms extracted from fairy tales are significantly correlated with contemporaneous rates of economic growth. Section VI concludes with an outlook regarding the potential usefulness of applying the HistoVaS to additional research questions.

II. Folktales as Carriers of Prevalent Values and Norms

II.A. Folktales, their Origins and Age

The term folklore refers to "all the forms of cultural learning passed on by word of mouth or personal example in any group … Folklore includes all the traditional forms of expression that circulate without the aid of books" (Jones 2013, 2). Folklore scholars usually distinguish between three different types of folklore: myth, legend, and folktale. Myths rely on supernatural figures to explain the origin and functioning of the cosmos. Legends claim to contain some historical truth and are built around exceptional protagonists "to illustrate cultural ideals, values, and norms" (ibid., 8; emphasis in original) whereas folktales "are entertaining narratives that use *common, ordinary people* as protagonists to reveal the desires and foibles of human nature" (ibid., 8). Among folktales, four genres are usually distinguished, namely (1) fairy tales, (2) fables, (3) jokes, and (4) novellas.

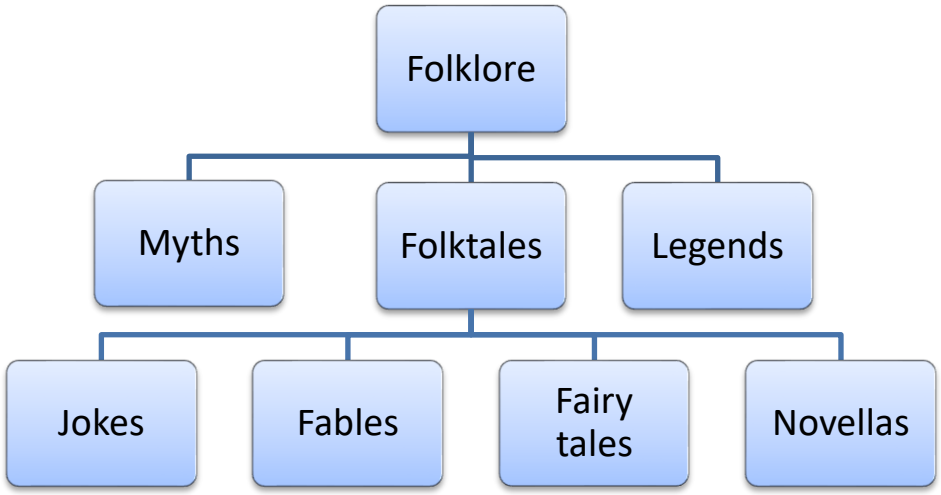


Figure I: Different types of Folklore

Ex ante, it is not entirely clear which type(s) of folklore, or even what types of folktale, are optimal as sources for a dataset of historically prevalent values and norms. Within folktales, we include only fairy tales and fables. Moral messages are important in both of these, whereas jokes focus on humor and novellas on romanticism. Among the different types of folklore, legends "serve as social guidelines for behavior and are regarded as having a certain historical and cultural truth embodied in them" (Jones 2013, 9). This would seem to make them excellent candidates for inclusion in our dataset. Then again, "the cosmology depicted in fairy tales is also frequently connected to social institutions, suggesting that these institutions are 'natural', that is, cosmically sanctioned and therefore justified" (ibid., 20).

There are, thus, good reasons for focusing on legends, but also good ones for focusing on folktales. The taxonomy just introduced presupposes that the different types of folklore can be neatly separated from each other. In practice, however, a reliable categorization of folklore into different types is challenging. Our corpus contains both legends and folktales in the form of fairy tales and fables.[6]

[6] We do not intend to include myths as they deal with the sacred and the supernatural and it is often difficult to extract clear-cut normative implications for behavior in everyday situations.

Henceforth, we will use the term "folk narratives" as an umbrella for these three types of folklore.[7]

Folklore researchers have long been interested in determining the geographical origins of folk narratives. In the 19th century, some, including the brothers Grimm, believed that they had a single place of birth (monogenesis), whereas others were convinced that similar tales originated from different places (polygenesis). Adherents of monogenesis variously pointed at Indian tales that diffused over the centuries toward the northwest, or at Greek fables that were converted into folktales (see, e.g., Zipes 2006, 42ff.). More recently, important advances have been made relying on phylogenetic approaches (da Silva & Tehrani 2016) and even genomic data (Bortolini et al. 2017). For our purposes, the geographic origin of a folk narrative is irrelevant as long as it has been transmitted orally in a given society over many generations. When referring to the folk narratives of a particular group, we often use the term "folktale tradition." This can refer to the collection of folktales belonging to a group that shares the same language or lives in the same region. This does not always coincide with contemporaneous nation-state borders. Large states – such as India – are home to various folktale traditions, such the Bengal, the Santal, the Kashmiri and so on.

Whereas the geographical origin of folk narratives is of little relevance for our research, knowing their age would be very helpful. Ashliman (2004, 13ff.) lists many folktales that can be unambiguously dated to before the beginning of the Christian era. For example, the fables attributed to Aesop have been known since the fifth century B.C.E., the Jataka, a collection of more than 500 anecdotes and fables that are part of the Buddhist canon, is dated between 300 B.C.E. and 400 C.E.[8] Ashliman (2004, 16) concludes that there is "good evidence that most of our popular tales … assumed their current forms in the Middle Ages or the Renaissance, making them some 500 years old, give or take a century or two." This confirms that

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7 A theory held by many folktale researchers says that single pieces of folklore have often evolved from a myth into a folktale, a view also held by the brothers Grimm (see Ashliman 2004, 132) and by Propp (1928). If this is true, then the respective classification of a piece of folklore into either folktale or legend depends on when it was first documented in written form. Additionally, for the distinction between folktales and legends, the beliefs of the recipients are also crucial: as long as the folktale is believed to reflect some historically accurate parts, it would be categorized as a legend. Since beliefs are subject to change over time, the classification could likewise change.

8 Both are included in our dataset.

folk narratives can be used as a source of information regarding historical societies. For our corpus, we aim to include only narratives that have been documented before 1900.

II.B. Values and Norms in Folk Narratives

Folktale scholars hold that it is one common function of folk narratives "to preserve and promote cultural and personal values… In traditional fairy tales morals typically center around the preservation of existing values and the maintenance of social stability" (Ashliman 2004, 4). Folk narratives were used for the moral education of children (Encyclopedia of Folktales, entry "values").[9] Fairy tales would be "veritable catalogs of ancient beliefs and practices… (Ashliman 2004, 15). The notion that it is possible to elicit values and norms out of folk narratives is, thus, clearly supported by folktale scholars. The fact that the folktales that we know today have survived many generations attests to their capacity to entertain and capture their audience – this can also be interpreted as an indication of their relevance in transmitting values and norms across generations. Another folktale scholar (Zypes 2006, xiii) argues that all folktales compete with each other and that those that have survived this competition function as memes - as behavioral instructions - in our brains (see also Blackmore 1999).[10]

Folktales anticipate life situations that the listener may eventually experience, such as encountering a stranger in need, being alone in a forest, or having to overcome a challenge. The plot describes strategies that protagonists and antagonists adopt, suggesting that some strategies lead to success while others lead to doom and failure. Folktales therefore imply a moral assessment of behavioral choices that may be internalized. It has been pointed out (e.g. by Henrich et al. 2012, 659) that humans regularly internalize social norms, implying that norm adherence becomes "intrinsically rewarding." Folklore is likely to play an important role in such

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9 Today, it is often assumed that folktales have always been targeted at children primarily. But this view is anachronistic. For centuries, they were told among adults and aided in creating a group identity. Zipes (2006, 99) is explicit in reminding us that the literary fairy tale "was initially not intended for the entertainment or education of children, and yet, children had for centuries listened, remembered, and communicated through fairy tales because of their relevance to their lives."

10 Alternatively, they can also be thought of as cognitive shortcuts (see, e.g., Kahnemann 2011).

internalization processes – specifically by proposing shared moral narratives (Haidt 2012) that members of a group can refer to.

But can children really learn values and norms relevant for their lives from stories with utterly unrealistic settings? In the past, many folktales did reflect the vicissitudes of life. Drawing on French fairy tales, Eugen Weber (1981) shows that they reflected the everyday reality of most people well into the 19th century. Tatar (1993) reminds her readers that Europe had very high rates of child abandonment (ibid., xxi), that the mortality rate of children could run as high as 66 percent (ibid., 15, 46), that war, famine, and disease were a likely everyday experience (ibid., 49), and that many children were forced to earn their living as household apprentices away from home (ibid., 56). All of these elements are commonplace in fairy tales. Zypes (2006, 53) goes one step further and argues that during the Middle Ages, most people did believe in magic.

It has further been argued that folktales containing unrealistic features may have a "memory advantage" which helps them to survive over the generations. In an experimental study, Norenzayan et al. (2006) found that "minimally counterintuitive narratives" have a memory advantage over both entirely intuitive and maximally counterintuitive narratives. Beauty and the Beast, for example, contains a man who has been magically transformed into a hideous creature, but it also tells a simple story about family, romance, and not judging people based on appearance. The fantasy makes these tales stand out, but the ordinary elements make them easy to understand and remember. This combination of strange, but not too strange, elements may be the key to their persistence across millennia.[11]

Another possible counterargument against eliciting values and norms out of folktales could be that they are simply not as prevalent anymore as they used to be. For the HistoVaS, however, it is important that folktales were present hundreds of years ago. In the era before social media, television or even radio, this is very likely

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11 A similar point is made by Wilson (2002, 42) with regard to religion: "Supernatural agents and events that never happened can provide blueprints for action that far surpass factual accounts of the natural world in clarity and motivating power. These otherworldly elements of religion cannot completely eclipse scientific modes of thought which are superior in some contexts, but the reverse statement is equally true." For additional evidence on this with regard to folklore, see also Stubbersfield & Tehrani (2013).

to have been the case.[12] In most parts of the world, literacy rates were low, implying that oral traditions – including folk narratives – were likely to be the most relevant form of entertainment and of the transmission of values and norms.

As we are interested in values and norms widely shared by large parts of the respective populations, we refrain from analyzing children's books as these are likely to reflect the intentions of their authors and perhaps even the regime under which they appear, rather than shared narratives.[13]

In sum, folk narratives promise to constitute a suitable source for reconstructing historically prevalent values and norms.

III. Values and Norms Conducive to Economic Development

We are interested in values and norms that may have impacted long-term economic and political development. In this section, we briefly describe the theory-based considerations behind the inclusion of 36 variables that we assign to the seven thematic groups already mentioned above; namely, cooperation, altruism, work ethic, entrepreneurship, acceptance of entrepreneurship, discrimination, and challenging authority. The individual variables comprising the seven groups are listed in Table I below. These groups can also be thought of as latent variables. We derive them by relying on factor analysis. It turns out that only the first factor in each of the seven groups has an eigenvalue clearly larger than one which allows us to base our analysis on the respective first factor only. This approach seems justified for two reasons: firstly, it reduces complexity and secondly, it seems more likely that a bundle of norms would have more of an impact on behavior than any single norm.

Without *cooperation*, individuals will not be able to establish any kind of peaceful order. Neither will they be able to enter into any meaningful division of labor and

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12 Even today, the plots of folktales may be more prevalent than one might initially assume: they may not be transmitted from mothers and grandmothers to their children anymore, but rather through motion pictures produced by Disney.

13 Nevertheless, the analysis of children's books has produced some interesting insights. Relying on artificial intelligence, Adukia et al. (2023) not only analyzed the text of children's books that appeared in the U.S., but also the images contained in them and found that Black and Latinx people are underrepresented relative to their population shares.

profit from productivity-enhancing specialization. The positive effect of cooperation on economic development is borne out via various channels, such as through trust and social capital (Putnam 1993, Fukuyama 1995, Glaeser et al. 2002). Trust has been shown to be an important factor in explaining differences in growth rates across countries (e.g. Knack and Keefer 1997, Algan & Cahuc 2013). Given the relevance of trust for successful cooperation, we include a trust variable in our group of norms encouraging cooperation.

Norms encouraging cooperation can also encourage members of society to act collectively and thus provide themselves with public goods (Ostrom 1990). The reliable provision of public goods is an important precondition for economic development. Fehr and Schurtenberger (2018) argue that the norm of conditional cooperation, which prescribes cooperation but limits it to those who reciprocate, is conducive to human cooperation. With regard to cooperation, we ask if the main character in a folktale cooperated with anyone else to reach her goal. In instances where this is the case, we ask if the main character cooperates with a stranger, as this is conjectured to be conducive to the development of impersonal market economies. Conditional cooperation can also include punishing those who are not abiding by a norm. To cover this aspect, the HistoVaS contains two variables: the first one tracks if the folk narrative encourages punishing bad deeds (or not), whereas the second one codes if it discourages the punishment of good deeds (or not).[14]

Altruism has been defined as "costly acts that confer economic benefits on other individuals" (Fehr & Fischbacher 2003). Sanctions have been shown to be decisive for norm enforcement and those implementing them are largely driven by altruistic motives (Fehr & Fischbacher 2004 is a review of the evidence). Altruism can therefore be crucial for the sustainability of other norms – such as those encouraging cooperation. We record four folktale traits to cover the notion of altruism. First, we ask whether a person in need was helped by some character in the narrative. In addition, we note if help was provided by a stranger. Helping others is a necessary condition for altruism, though not a sufficient one.

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[14] This variable was also included because anti-social punishment (the punishment of cooperators by non-cooperators) has been shown to be present in vastly different degrees in different societies (Herrmann et al. 2008).

When someone is behaving unfairly against someone else, a third person stepping in and helping the victim behaves altruistically, possibly by using third party punishment. We register if this behavior is encouraged and then compare it to instances in which the person suffering the unfair treatment resorted to direct revenge, even though such behavior is discouraged. This distinction is inspired by Enke (2019) who correlates revenge with kinship ties, reporting that it is more prevalent in societies with strong kinship ties, whereas a third person stepping in is more prevalent in societies with weak kinship ties.

In their Global Preference Survey, Falk et al. (2018) summarize a number of preferences, such as the preference for patience, under what they refer to as "the spirit of capitalism."[15] We propose to split the variables grouped under the spirit of capitalism into three categories; the first one focusing on work ethic, the second one on norms likely to be conducive to entrepreneurship, and the third on norms referring to the (non-)acceptance of entrepreneurial behavior by the non-entrepreneurs. The latter distinction is due to Voigt (1993) who observes that in most societies, entrepreneurs will be a vanishingly small minority, but the likelihood of their activities being beneficial for overall development also depends on the non-entrepreneurs' willingness to accept some inequality between members of that society.

Our list of norms promoting a particular *work ethic* is at least in part motivated by Max Weber (2013; see also Landes 1999). The norms elicited include those in favor of hard work, patience, attention to detail, honesty, and willingness to keep promises. All of these norms are expected to facilitate cooperation and reduce transaction costs. Fehr and Schurtenberger (2018) point out that these norms reach far beyond cooperation, which is why they aren't included in their study. We view these norms similarly, and as such we don't group them amongst norms encouraging cooperation.

Entrepreneurs are vital for economic development. In selecting norms that promote *entrepreneurship*, we borrow from a prominent school of thought that focuses on the typical traits of entrepreneurs. Tocqueville (1863, 289) observes how in America "the strange indulgence which is shown to bankrupts" is widespread,

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15 Preferences are held by individuals whereas norms are shared among groups of individuals. As values and norms are one factor determining individual preferences, we will analyze the association between the two in section V.B. below.

whose reputation does not suffer from failing. Schumpeter (1942) coined the notion of "creative destruction" thus pointing at the openness to change of entrepreneurs. To elicit norms in favor of entrepreneurship, we ask if the narrative encourages accepting reasonable risks, restarting after having failed, if it promotes openness to change as well as geographic mobility, and if it encourages attempts to improve one's own social status.

For a society to create long-term economic growth, however, simply having entrepreneurs is not sufficient. Both the benefits and consequences brought about by entrepreneurs must be accepted by non-entrepreneurs. For example, it is important for non-entrepreneurs to permit a certain level of inequality of outcomes in society if entrepreneurs are to achieve the level of success that is vital for entering a period of sustained economic development. This may be referred to as *acceptance of entrepreneurship*. But in a sense, the notion is broader and extends beyond simply accepting entrepreneurs and includes elements of *tolerance*.

Webster's Dictionary defines tolerance as "a permissive or liberal attitude toward beliefs or practices differing from or conflicting with one's own." Norms of tolerance are elicited by recording norms that encourage the acceptance of diversity as well as those of unequal outcomes. Being envious can be interpreted as a specific way of being intolerant. We therefore also ask if fairy tales discourage feelings of envy. Finally, individualism – as opposed to collectivism – can be interpreted as being conducive to tolerance as individuals use their own means to reach their own self defined goals. A higher level of individualism implies a higher degree of diversity, which in turn necessitates a higher level of tolerance if that society is to sustain itself. We try to test whether a folktale promotes individualism by checking if the characters make their own decisions, set their own goals, choose their own means to achieve those goals and by bearing the consequences of their actions.

Extensive discrimination can impede development if the full potential of some members of society remains undervalued and underutilized. Human capital development is likely to be negatively affected by discrimination and labor market inefficiencies. We would also expect innovation and creativity to be similarly negatively impacted. Klasen and Lamanna (2009) find that gender gaps in education and employment considerably reduce economic growth. We elicit whether folk narratives discourage the discrimination of individuals due to personal attributes. We record if a character in a folk narrative is discriminated against on the basis of personal attributes, and whether such discrimination is being encouraged or discouraged in the broader context of the narrative. In addition, we

focus on particular groups, such as women and the elderly, to check whether they are treated differently based on some part of their identity. To capture gender discrimination in its more subtle aspects, we also record if a female character achieves her goal only after a man (or several men) aid or save her. This does not necessarily imply any kind of discrimination, but reinforces a narrative of women as weak(er) and in need of help from men. Such narratives can be used as a legitimation of differential treatment and, therefore, discrimination. In contrast, a narrative that depicts women achieving their goals through their own efforts promotes female empowerment. Finally, we also record if reliance on first impressions is encouraged based on the idea that such first impressions may entail discriminatory judgments. We label the variables grouped in this factor *discouraging discrimination*.

The last group of norms collected in HistoVaS are grouped under the label *challenging authority*. The underlying conjecture is that societies in which individuals actively challenge authority and hold governments accountable can contribute to improved governance (for a general account of the effects of civil resistance, see Chenoweth and Stephan 2011). Governance is an umbrella term containing concepts as diverse as democracy, the rule of law, the absence of corruption, stability and more. Compared with the first six groups previously introduced, this group is geared more toward political development. Yet, norms encouraging the challenging of authority may also have effects on innovation and progress, thus extending beyond aspects of governance.

One of the original dimensions of culture proposed by Hofstede (1980) is called power distance; in a sense, the acceptance of hierarchies and the absence of authority-challenging norms. Gutmann et al. (2023) recently found that power distance is negatively correlated with the degree to which governments comply with their constitutional constraints. The most general variable referring to authority included in HistoVaS simply records if a folk narrative encourages the challenging of an authority. Going one step further, we also record the identity of the authority challenged and report whether social norms or political authorities are challenged, but also other-worldly authorities such as deities. To finetune our perspective, we also record if a folktale encourages norm abidance.

Table I contains an overview of all variables described in this section. Given the above considerations, we have assigned each of the 36 variables just described to one of the seven groups. Assignments are not always clear-cut and the HistoVaS

database allows us to rely on single variables should that be the most appropriate option for the specific research question at hand.

Table I: Groups of values and norms contained in the HistoVas

1	Cooperation	1. Trust encouraged 2. Promise keeping encouraged[16] 3. Punishment of bad deed encouraged 4. Punishment of good deed discouraged 5. Existence of cooperation 6. Existence of cooperation with a stranger 7. Trusting strangers
2	Altruism	1. Third party punishment encouraged 2. Revenge discouraged 3. Instance of help 4. Instance of helping a stranger
3	Work Ethic	1. Hard work encouraged 2. Attention to detail encouraged 3. Honesty encouraged 4. Patience encouraged 5. Promise keeping encouraged 6. Punctuality encouraged
4	Entrepreneurship	1. Geographical mobility encouraged 2. Social mobility encouraged 3. Reasonable risk taking encouraged 4. Restarting after failure encouraged
5	Acceptance of Entrepreneurship / Tolerance	1. Openness to change encouraged 2. Diversity acceptance encouraged 3. Acceptance of different outcomes encouraged 4. Individualism encouraged 5. Envy discouraged
6	Discrimination Discouraged	1. Instance of discrimination 2. Discrimination discouraged 3. Relying on first impressions discouraged 4. Treating elderly: revered 5. Female character: empowered

16 This is the only variable included in more than one group. In addition to cooperation, we also assign it to work ethic.

7	Challenging Authority	1. Challenging authority encouraged 2. Norm abidance encouraged* 3. Norm abidance discouraged* 4. Challenged authority: state representative 5. Challenged authority: parents and family 6. Challenged authority: religious authority 7. Challenged authority: society and social norm 8. Challenged authority: otherworldly authority

* these two variables in HistoVas are not mutually exclusive. A fraction of folktales encourages norm abidance, another fraction of folktales in the same country discourages it. The correlation between two variables is 0.364.

IV. Data

IV.A. The Folk Narrative Collection Process

The information contained in the HistoVaS comes from coding 27,137 folk narratives.[17] To produce it, we relied on five main sources: (1) the "Folklore and Mythology electronic texts" collected and made available by D.L. Ashliman, a folklorist at the University of Pittsburgh (1,622 folktales), (2) the Multilingual Folktale Database (7,194 folktales), (3) and a popular website dedicated to folktales from different countries (1,481).[18] Together, these readily available collections contain 10,297 unique folktales. As our intention was to rely on a more complete database, we added (4) anthologies and (5) folk narratives published in academic journals.

In the second half of the 19th century, a general interest in folklore arose. Given this increased demand, numerous anthologies were published. Furthermore, academic interest in folktales dramatically increased in the final decades of the 19th century, and many anthropologists documented the folktales they had listened to

[17] Our collection is larger, but some 2,000 folktales could not be analyzed as they are too short, too long or the text recognition did not work properly due to the inferior quality of the scans.

[18] The website is called fairytalez (https://fairytalez.com/).

"in the field". Journals such as *Folklore* (founded in 1878), *The Folk-Lore Journal* (1878/1883), *The Journal of American Folklore* (1888), *the Journal of the Polynesian Society* (1892), and *Man* (later renamed as *the Journal of the Royal Anthropological Institute of Great Britain and Ireland* (1901), are rich sources.

Unfortunately, only some of the anthologies have been digitized. Thankfully, however, many of the editors of these anthologies not only collected the most prominent tales of a country, but also collected and recorded popular regional folk narratives, those that used different literary styles, and often even assigned ATU codes.[19] Given this, we were able to scan and digitize thousands of folktales contained in these anthologies. Reliance on these sources also ensures that the folk narratives included in our database have a certain minimum age as a publication date is always available.

Early collections of anthologies include the *Collection de Contes et de chansons populaires* which began publication in 1881 and is comprised of 46 volumes, and the *Littératures populaires des toutes les nations* with 47 volumes. As mentioned previously, we aim to include primarily those folktales that were published before the year 1900. In all likelihood, many will be significantly older as they were already described as ancient or traditional when published in the 19th century. In case various versions of a single folktale are available, we always rely on the oldest version documented.

We were able to find English versions for 11,447 folktales, implying that most of them have been translated by anthropologists and other collectors. For the remaining 15,690 tales,[20] we used DeepL or GPT to produce an English version.[21]

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19 ATU is the abbreviation for Aarne, Thompson and Uther, three folklorists who proposed an elaborate classification for folktales along different types (animal tales 1-299, tales of magic 300 -749, religious tales 750 – 849 and so on).

20 The non-English folktales are mainly in German (7,185), Spanish (2,147) and French (1,579). The corpus contains folktales from 115 languages.

21 We cannot entirely exclude the possibility that some details are "lost in machine translation." To check whether this distorts our results, we fed GPT with 145 folktales for which we have translations from both humans and software. We then compare these translations with the one produced by GPT. For this comparison, we use cosine similarity which can take on values between +1 and -1. When two folktales are coded identically, the result will be +1. A text can be translated from the original language (the dominant/official language of a country to which a folktale tradition belongs) or a

For translating folktales, we first turned to DeepL and for those in languages not covered by DeepL, we turned to GPT for translation.[22]

Many of the anthologies that we rely upon are based on nation-states. This is why we provide HistoVaS data also at the nation-state level. This level of aggregation permits to combine HistoVaS data with many contemporaneous outcome variables.[23]

HistoVaS data may be used as either outcome or explanatory variables, depending on the particular research question one is asking. In the first case, the underlying question could be to what degree the values and norms of a society are shaped by its ecological conditions. It is well known that social norms are (co-)determined by geography widely conceived (Voigt 2024a and b). In a number of countries, such as the U.S., Canada, Australia, and New Zealand, the indigenous populations have been marginalized by settlers. Settlers, however, brought their own folk narratives that do not necessarily reflect the ecological challenges of their new environments (see, e.g. Bronner 2017 or Dorsen 2015). If one is interested in the degree to which ecological challenges have influenced historically prevalent values and norms, one should rely on the folktales of indigenous populations. If, on the other hand, one is interested in the consequences that historically prevalent values and norms have on the modern day, one would be better served by relying on the dominant group(s) within a country. In countries like the U.S. or Canada, these would be the settlers. Here, we are interested in the possible long-term consequences of norms, which is why we rely on the population share of the various groups that have settled in a

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language other than original one. This can also affect the coding. Therefore, we distinguish cases in which a folktale is translated from the original language or from any other language.
The average cosine similarity comparing answers of GPT produced with prompts run on machine-translated with those run on human-translated folktales is 0.898 for English, and comparing machine translation of folktales from other languages with human translation is 0.92. The results indicate that machine translations and human translations of folktales are highly similar.

22 DeepL only covers 30 languages whereas our corpus draws on folktales in 115 languages and dialects. The list of languages covered by DeepL can be found here: https://support.deepl.com/hc/en-us/articles/360019925219-Languages-included-in-DeepL-Pro

23 For large and heterogeneous countries, explicitly taking into account the regional or even the ethnic group level certainly seems justified, and future versions of HistoVaS may contain additional information in that regard.

country. To do so, we draw on the matrix produced by Putterman and Weil (2010) depicting ancestry adjusted population shares.[24]

IV.B. The Coding Process

GPT immediately saw widespread adoption after the introduction of the ChatGPT version in November 2022. Since it is still relatively novel, we describe the process in which we collected data from GPT in considerable detail here. Our aim was to elicit norms from folk narratives. To do so, we used formulations like "the story encourages …" or "… discourages" particular behaviors in order to elicit norms. We designed the prompts such that GPT would choose one of the possible answers offered. We always provide an "escape option" and the possible answers for GPT to choose from are typically "encouraged", "discouraged", "irrelevant" and "unsure". We instructed GPT to answer in one word so we could easily convert the answers into data. Since not all narratives deal with all norms mentioned in the previous section, we expected "irrelevant" to be the most frequently chosen answer. To minimize the probability of errors, we introduced "unsure" as a possible answer; this option was offered in an attempt to prevent GPT from hallucinating. The complete text of all prompts including all answering options is documented in the supplementary material to this study.

Prompts were written in an iterative process. In all, 7 iterations were produced and tested on a sample of folktales. After iteration 5, we asked GPT to help improve the

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[24] Putterman and Weil (2010) construct a matrix detailing the share of the year 2000 population which has descended from people in different source countries in the year 1500. Their matrix also reflects the differential population growth rates among native and immigrant groups (ibid., 1629). For example: according to Putterman and Weil (2010), people whose ancestors originated from 37 countries now make up the population of Argentina with Italians (44.14%), Spanish (30.22%), Argentines (5%), and Germans (3.3%) representing the largest shares. In our adjusted variables, the share of ancestors is represented accordingly.
We added data for 7 countries not covered in Putterman and Weil's matrix: South Sudan (as this country did not exist at the time of their data collection), Cook Islands, Iceland, Maldives, Niue, Samoa, and Tonga. For South Sudan, we use the matrix for Sudan, as these two countries were one at the time of data collection. For the other five countries, we rely on other sources about the share of ancestral origins and use that information to construct a matrix for each. These sources are listed in the supplementary material.

prompts with the goal to receive the most accurate answer. The goal in this process was to make the answers provided by GPT converge with answers provided by human coders. To implement this, we relied on six student assistants who were each asked to code 10 folktales picked at random, thus covering different parts of the world. The student assistants used come from different cultural backgrounds; this was done to reduce western bias. Comparing their answers with that of GPT, we modified the prompts in an attempt to make human and machine coding converge.

Since ChatGPT went public in November 2022, GPT has been updated a number of times and various versions have been made available. HistoVaS was produced using GPT 4o. To answer our questions, we would feed GPT all of our prompts in combination with one folk narrative at a time. Before being fed to GPT, the texts extracted from books and journals were converted to machine readable format using Optical Character Recognition (OCR). At times, research assistants needed to clean the text if the conversion was not completely legible.

A lesser-known feature of GPT is the ability to choose "temperatures" when soliciting responses. High temperatures lead to less deterministic and more creative responses whereas low temperatures induce more deterministic and focused responses. We always opted for the minimum temperature of 0 in order to get the most deterministic responses from GPT. This setting was also chosen to ensure reproducibility of results. Another feature of GPT is "seed".[25] In order to ensure replicability of GPT's answers, we maintained identical seed parameters throughout all of our testing.[26] As previously mentioned, most variables included in our survey instrument allow for at least four different answers (behavior X encouraged, discouraged, irrelevant, or unsure if GPT is uncertain).

Out of the answers provided by GPT, we construct both an extensive and an intensive margin. The extensive margin simply records whether a given norm is

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25 https://platform.openai.com/docs/guides/text-generation/reproducible-outputs

26 An alternative to LLMs answering our questions are human coders. Therefore, the standard against which the replicability of GPT's coding should be judged is that achieved by human coders. We suspect that it would not be higher than that achieved by GPT. One of the first empirical studies on the replicability of results obtained from GPT is Bisbee et al. (2024) who find that average scores generated by ChatGPT correspond closely to their baseline but criticize that there is less variation in GPTs responses compared to the real surveys.

dealt with in a folk narrative independently of whether compliance with such norm is encouraged or discouraged. The intensive margin records the degree to which desirable behavior is encouraged and non-desirable behavior discouraged. To facilitate interpretation, we standardize each variable as having a mean of zero and a standard division of 1.

In this paper we only rely on 36 variables, ignoring some of the variables elicited via GPT, such as those that deal with traits of the main characters like identity, gender, physical appearance, single or group, and so on. Our survey instrument also includes a number of prompts inquiring into the specific context of a norm (if a person was helped, was it a member of the nuclear family, the extended family, and so on) that allow for more detailed analysis and that can be used in future studies. Finally, we were hoping to elicit information on some issues, but learned that they are infrequently dealt with in fairy tales. This refers, for example, to the evaluation of trade (is it described as positive or zero-sum?). GPT coded this as irrelevant in 92% of all folktale covered in the HistoVaS. Similar figures were attained with regard to inheritance rules (2%) and the occurrence of war(s) (4%). Given their infrequency in our corpus, we decided not to include these variables in the HistoVaS. The answers from GPT refer to individual folk narratives and we aggregate answers to the nation-state level by calculating the fraction of all answers referring to a specific answering option.

IV.C. The Reliability of GPT's Answers

GPT is a powerful large language model, but due to it being a relatively new tool, its reliability remains unknown. Shortly after the release of GPT, there were several reports that brought concern to its abilities; these included reports that GPT couldn't correctly solve math problems, fabricated CVs, and invented bibliographic references. Since its release, a number of systematic tests regarding the reliability of GPT have appeared. Comparing human with GPT judgments in 464 moral scenarios, Dillion et al. (2023) found a .95 correlation between the two. In their assessment of GPT 3, Binz and Schulz (2023) find that it "solves vignette-based tasks similarly or better than human subjects, is able to make decent decisions from descriptions, outperforms humans in a multiarmed bandit task, and shows signatures of model-based reinforcement learning." Several papers show that GPT outperforms both experts and crowd workers for text-annotation tasks (e.g. Gilardi et al. 2023, Törnberg 2023). Research has also shown GPTs ability to identify ideologic positions in continuous policy space (Le Mens & Gallego 2023). Bubeck

et al. (2023) even attribute “sparks of artificial general intelligence” – considered to be the holy grail of AI – to GPT 4.

Given these reports, along with the fact that most folk narratives have a rather simple structure with relatively explicit messages, we believe that GPT is capable of extracting values and norms from the folktales we feed it when prompted carefully. Additionally, we implement a number of validation exercises to further substantiate our belief that GPT is an effective tool for this task.

To test the validity of GPT’s coding, we ran a number of tests to check both its internal and external validity. Regarding internal validity, we rely on one prompt that inquires if the analyzed folktale has an “overarching moral.” This variable is coded as a dummy variable. We assume that folktales coded as having an overarching moral should score higher on the sum of all variables dealing with values and norms. Based on 27,137 folk narratives, we find our assumption is

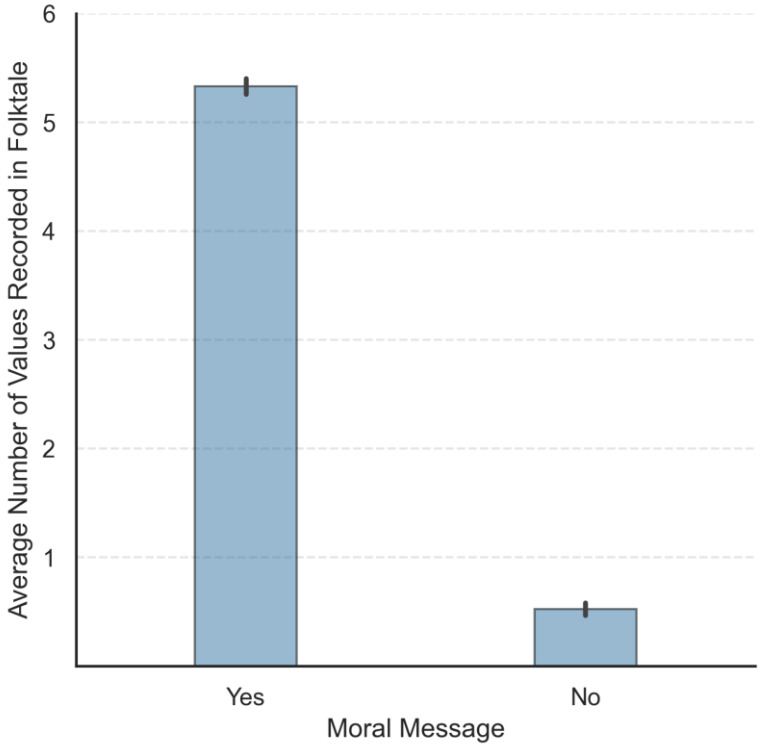


Figure II: Average Number of Values in Folktales with and without Overarching Moral

accurate. Given the answers provided by GPT, the average number of values contained in folk narratives with an overarching moral is depicted in the left column of **Fehler! Verweisquelle konnte nicht gefunden werden.**, whereas the column on the right depicts the average number of values in folk narratives coded as not having an overarching moral. According to the Figure, narratives with an

overarching moral message contain approximately ten times as many mentions of values and norms compared to those without any overarching moral message.

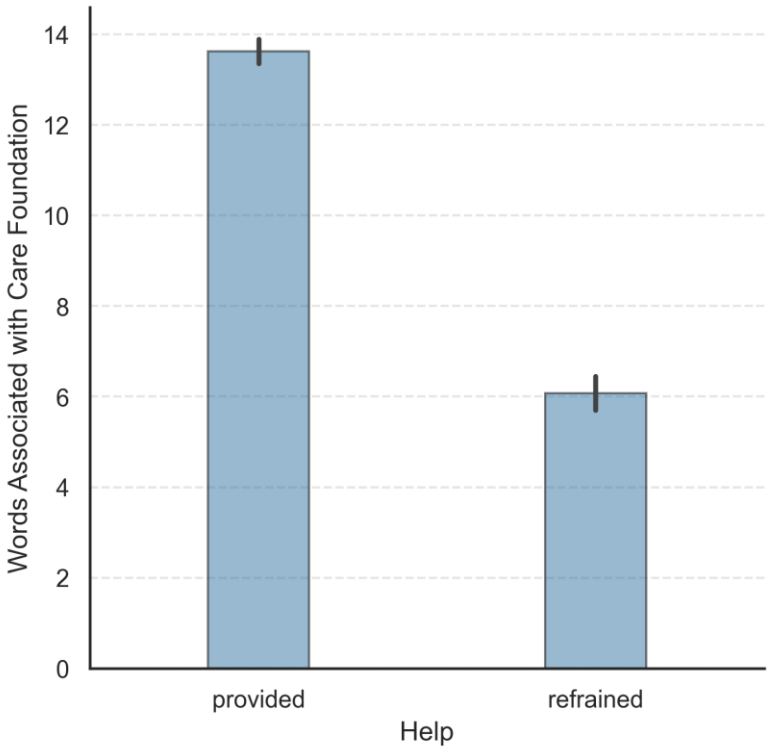


Figure III: Average Number of Words Associated with Care in Folktales describing an Instance of Providing or Refraining from Help

In a related paper, Khesali et al. (2025) elicited moral foundations from folktales by relying on both GPT but also on the dictionary method, where one counts the proportion of words most closely connected to the concept one is interested in. One of the elicited moral foundations is care. We assume that care and altruism are closely related, and as such should be highly correlated. Using two different methods to test this, we do in fact find a high level of correlation between these two variables, with a coefficient of .73. This indicates a high degree of internal validity in GPT's recognition of content. In addition, we find that folktales which describe an event in which others are helped contain more than twice the number of words related to the care dimension compared to those without such events (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). We consider this as additional evidence that GPT does code folktales reliably.

Another method to check the validity of GPT's coding is to look at measurements that are conceptually related to variables in the HistoVaS dataset. The most suitable candidate for this exercise is the dataset produced by Michalopoulos and Xue (2021), who rely upon information on folklore provided by Yuri Berezkin, a Russian folklore scholar. The Michalopoulos and Xue dataset is based on dummy variables indicating if specific motifs are present or not in a particular narrative. Thus, it was constructed using an approach fundamentally different from ours. Berezkin was primarily interested in the spread of fairy tales and therefore only included those that were present in at least two groups. Since we are interested in a different question, we do not rely on that criterion and are, therefore, likely to work with a slightly different corpus. Michalopoulos and Xue (2021) show that the presence of motifs can be partially explained by the ecological challenges faced by particular societies. Figure IV presents the correlation between four variables from their motif dataset (plotted on the vertical axis) and conceptually related variables in our HistoVaS dataset (plotted on the horizontal axis).[27] On the upper left panel, encouraging honesty is plotted against honesty related motifs. To the right of that, encouraging promise-keeping is correlated with motifs related to the concept of promise. The lower left graph shows the correlation between encouraging norm abidance and the fraction of norm related motifs. Finally, the bottom right panel shows the correlation between the fraction of folktales that encourage challenging authority and authority related motifs. All four variables from HistoVaS correlate positively with corresponding variables from the motifs dataset, and all of these correlations are significant.

[27] We are actually presenting regression results including the constant and robust standard errors.

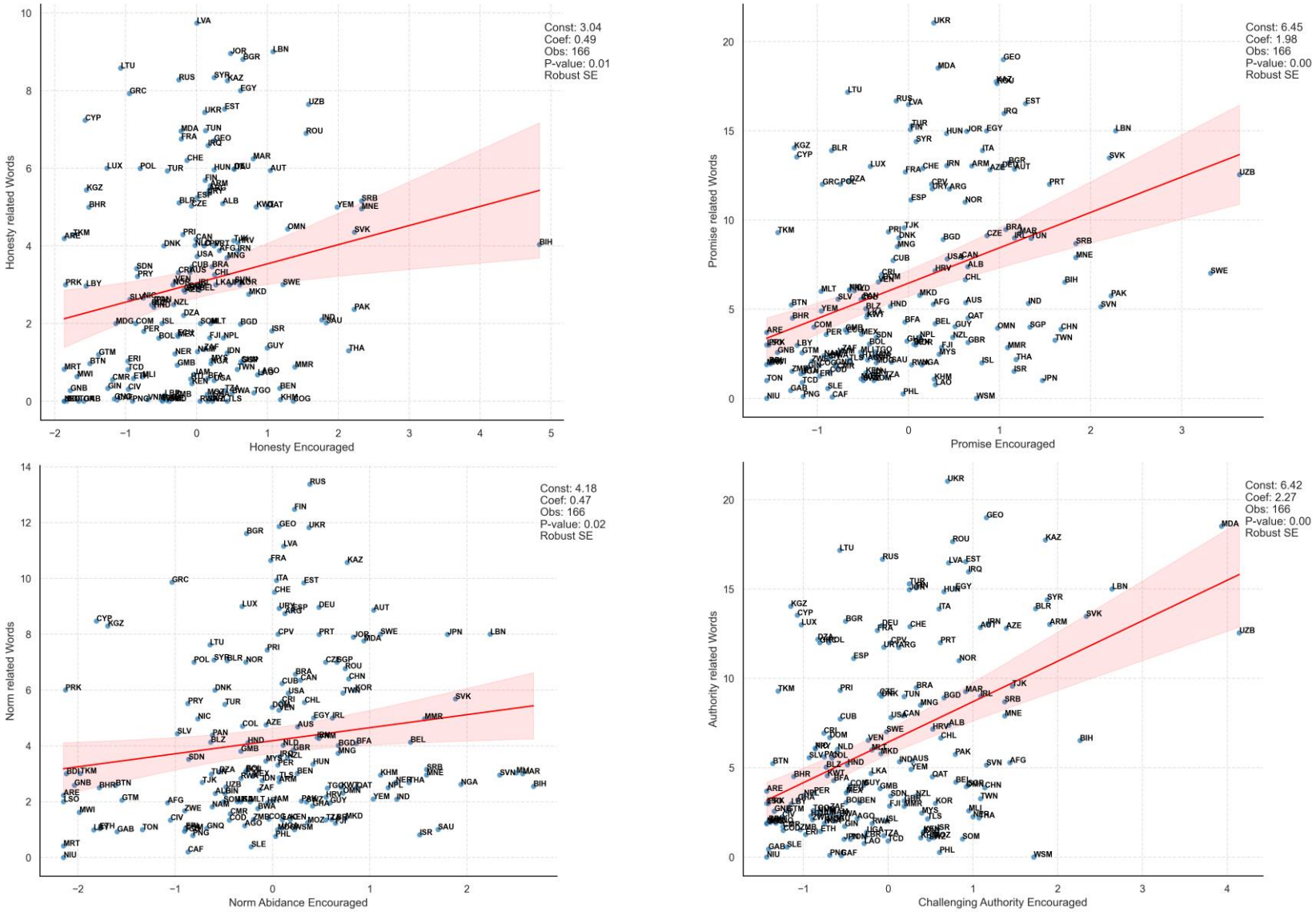


Figure IV: Correlations between Four Variables from Motif Dataset with related Variables from the HistoVaS Dataset

A common approach in evaluating GPT responses is to compare them against a groundtruth—responses whose validity is well established. However, no candidates for such groundtruths are readily available for the variables contained in the HistoVas. Additionally, a direct comparison between GPT's responses and those of crowd workers is insufficient, as folktale content is culturally sensitive, and coders from different cultural backgrounds may interpret the same content differently.

The most viable alternative is to rely on the ATU index, named after folklorists Aarne, Thompson, and Uther, who developed a comprehensive classification system for folktales based on types (e.g., animal tales [1–299], tales of magic [300–749], religious tales [750–849], etc.). Each particular type is intended to capture the basic plot structure of a story. However, applying the ATU types as groundtruths for HistoVaS is not straightforward. We have information on the type to which a folktale belongs only for a fraction of our corpus (4,034 folktales). Moreover, they are not designed to reveal the norms and values embedded in stories. As a result, we are limited to instances where a direct connection to a norm or value is explicitly identifiable.

Figure V displays the frequency of GPT's responses for four out of fifteen types that are tested. Table V in the supplementary materials summarizes the results of analyses for all types that are tested. The four selected types are: type 130 (the animals in night quarters, linked to cooperation), type 403 (the black and the white bride, linked to envy), type 513 (the extraordinary companions, linked to help), and type 563 (the table, the ass, and the stick, linked to revenge). Figure V shows that for these types, GPT accurately identifies the norm or value associated with the ATU classification type.

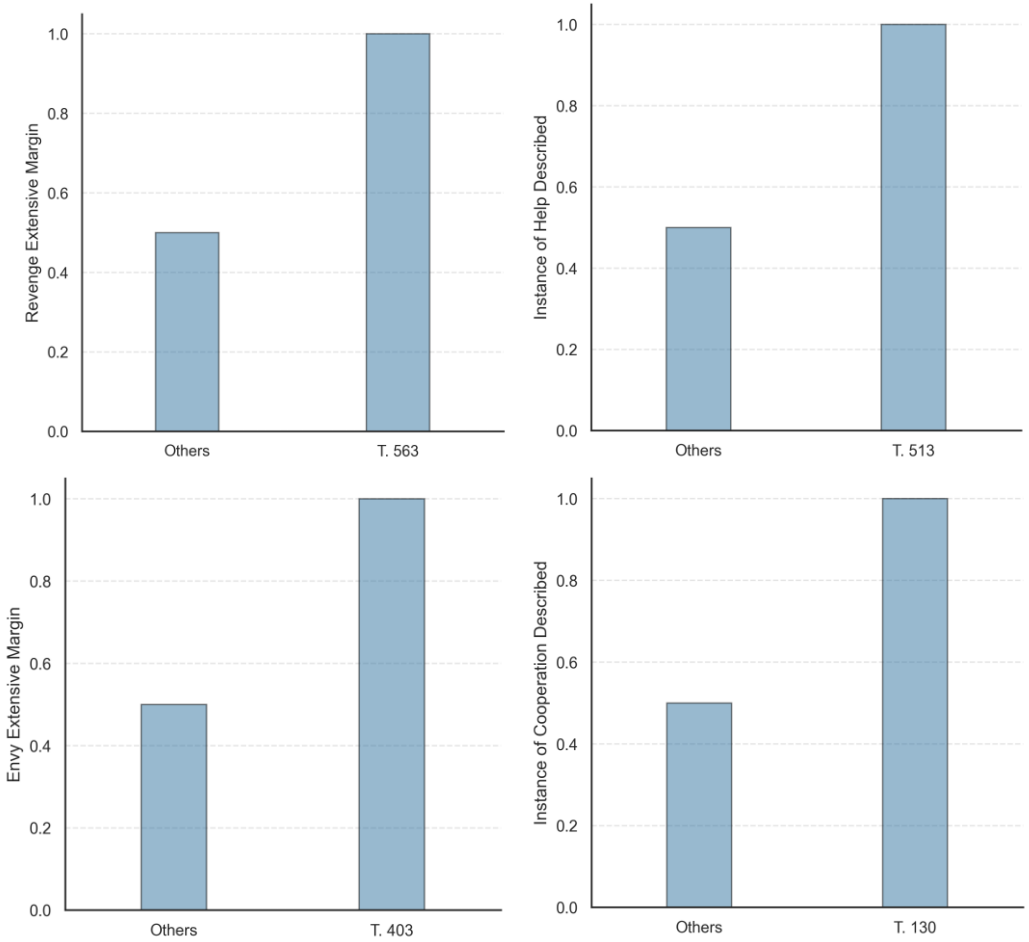


Figure V: Frequency of GPT responses for selected folktale types and their associated norms or values

One possible concern regarding the validity of our coding refers to the degree to which our country samples are representative of the entire folktale tradition that the samples are supposed to represent. To mitigate this concern, we only include a country into the HistoVaS if we can assign at least 30 folk narratives to it. Not all folk narratives deal with the norms that we are interested in, and so relying on too few folk narratives could bias our results. To test whether 30 folk narratives can be considered representative of a particular folktale tradition, we compare the results with those obtained when implementing a higher threshold of either 60 or 90 folktales. In our dataset, there are 39 countries with more than 100 folk narratives attributed to their respective traditions. From this pool of 39, we randomly selected either 30, 60 or 90 folk narratives from each. Next, we computed the values of all variables, and compared the resulting scores with those from the full sample, relying on the chi-square test. We found no significant differences between sample sizes and the complete set.[28] Therefore, we include a country's folktale tradition into the HistoVaS so long as we have at least 30 folk narratives from that country.

Another potential concern could be the assumed Western bias of GPT. Since it was trained primarily on Western texts, one may suspect that it is less competent in coding non-Western folk narratives. To validate GPT's coding of non-Western folktales, we also fed a Chinese LLM (GLM) with 231 folktales along with our prompts.[29] We did not find any systematic differences in the coding produced by GLM. The coding produced by the two LLMs are documented in the supplementary material.

In sum, by relying on careful prompting and parameter settings, combined with our own validity tests and evidence that GPT is able to outperform human coders. we are confident in the reliability of the variables produced.

IV.D. Descriptive Statistics

HistoVaS is a very rich dataset. We distinguish between the extensive and intensive margins; the extensive margin examines whether a particular norm plays any role

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[28] A complete table listing all our coding is available from the authors upon request.

[29] GLM is able to annotate text in English and can also reply in English. We fed it with exactly the same prompts that we fed GPT with.

in a folk narrative, and the intensive margin checks whether a particular behavior is encouraged or discouraged given that a norm plays a role. Figure VI indicates both the extensive and the intensive margin for some key values. The left panel shows that single folktales only deal with a limited number of values. The topics most frequently dealt with include individualism, the punishment of bad deeds, norm abidance, and revenge. Most of the variables included in the HistoVaS are covered in 10-20% of the folktales included in our dataset.

Interestingly, the normative perspective attributed to these frequently referenced variables is often almost universally shared (right panel): to punish a bad deed is encouraged almost everywhere, as is geographic mobility, attention to detail, third party punishment, and others. In a specular fashion, punishing a good deed is universally discouraged, as is relying on first impressions, feeling envy, and discrimination. We find a high level in variance in the normative perception globally of the following values: individualism, norm abidance, revenge, and honesty. The high level of variance in these values is what appears to distinguish societies from each other: we find that roughly half of the folk narratives in our data encourage these values and behaviors, and the other half discourage them. The last two variables depicted in Figure VI have a slightly different structure: with regard to cooperation, we simply asked if the protagonist of the narrative reaches his or her goal alone or cooperates with others. “Female saved” records cases in which a female faces a challenging situation in the narrative and is able to master it on her own (which we label “female empowerment”) or is saved by some other actor, usually a male. Whereas the vast majority report cooperation between actors to take place, descriptions of female empowerment are found in less than 30% of all folk narratives making up our corpus.



Figure VI: Extensive and Intensive Margin of Values Comprised in HistoVas: Presence (left) and Normative Message (right) in 28.000 Folktales

In Section III, we grouped each of our 36 variables into one of seven thematic categories. To check if our theoretical priors accord well with the data, we ran a factor analysis for each of the seven thematic groups. It turns out that in all seven groups, only the first factor has an eigenvalue larger than one. Furthermore, the first factor in all seven groups covers at least 74% of the variance in the underlying variables. We interpret these results as confirming our theoretical priors. To keep this section relatively short, we rely on the factors for the descriptive statistics.[30] Figure VII through Figure XIIII depict the scores for all countries taken into consideration. In each figure, darker colors indicate higher degrees of a given factor. Countries for which no data are available are depicted in light gray. All maps are based on the ancestry adjusted data (Putterman and Weil, 2010) as described above.

[30] The complete factor analysis can be found in Appendix A

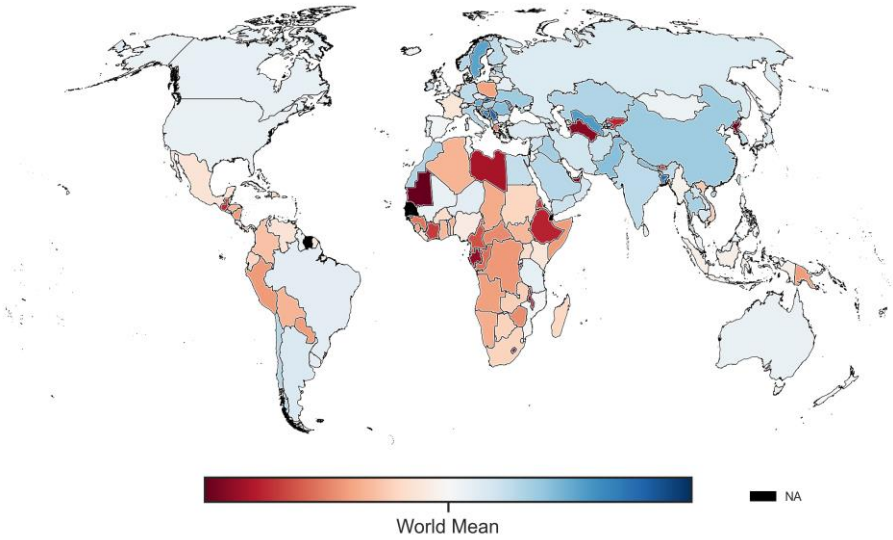


Figure VII: Cooperation

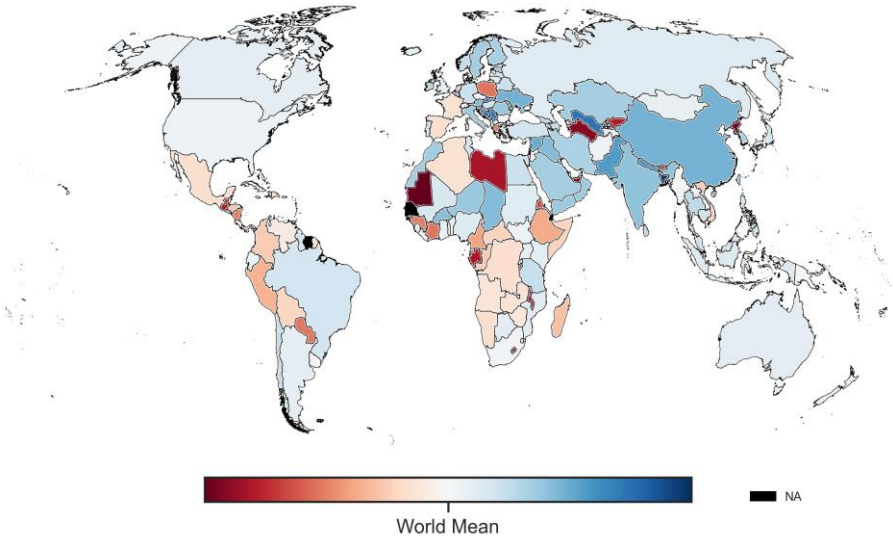


Figure VII: Altruism

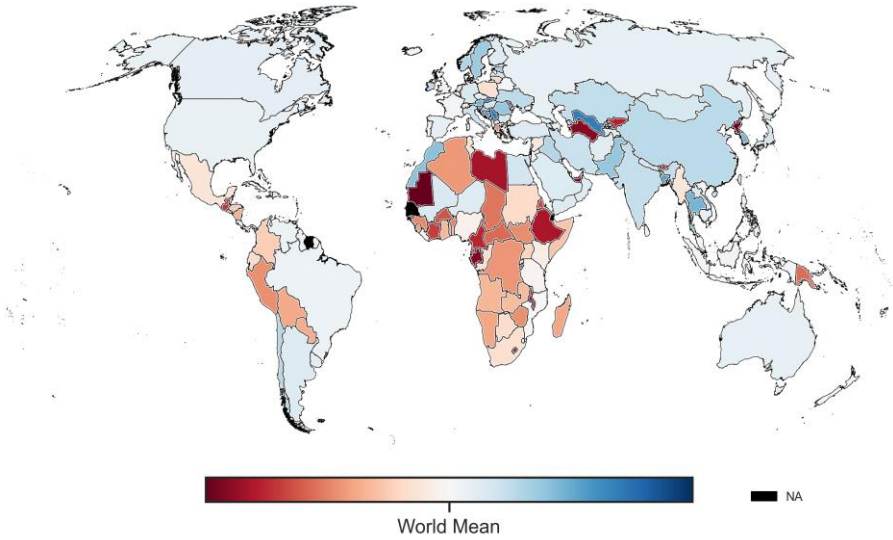


Figure IX: Work Ethic

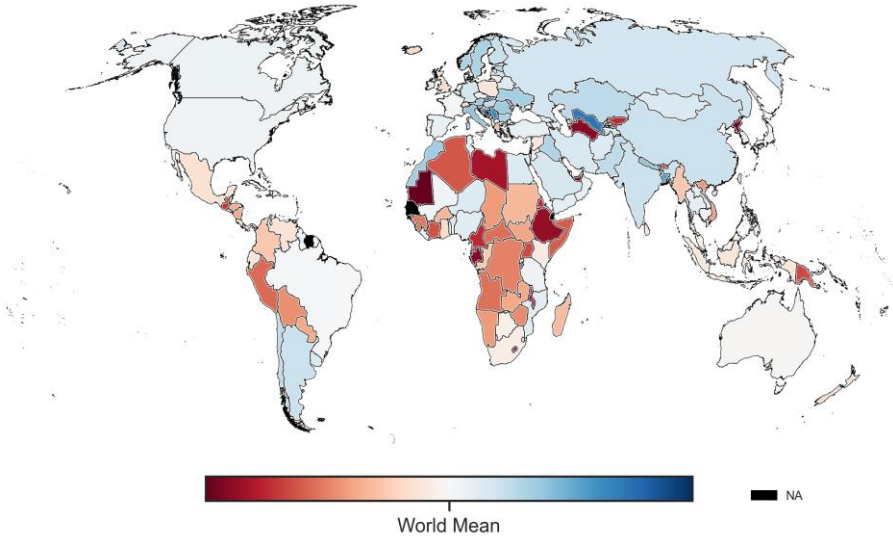


Figure VIII: Entrepreneurship

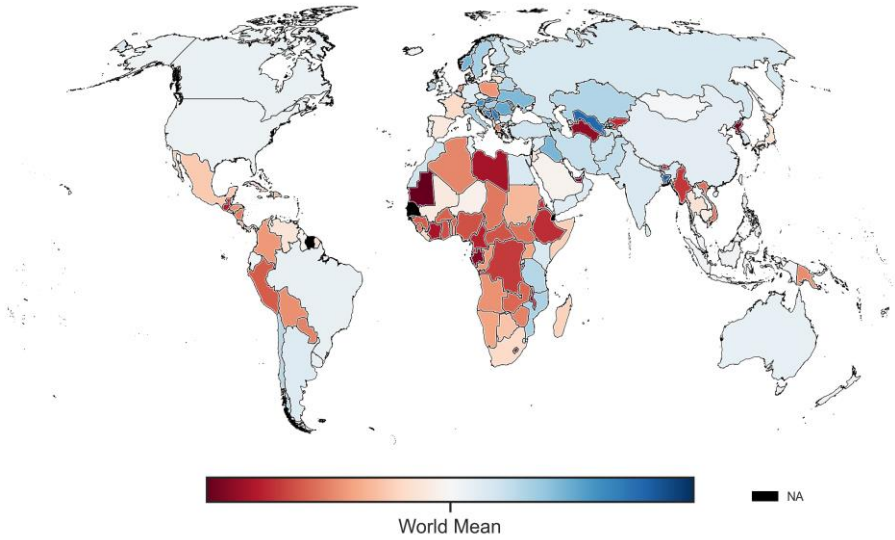


Figure IXI: Acceptance of Entrepreneurship

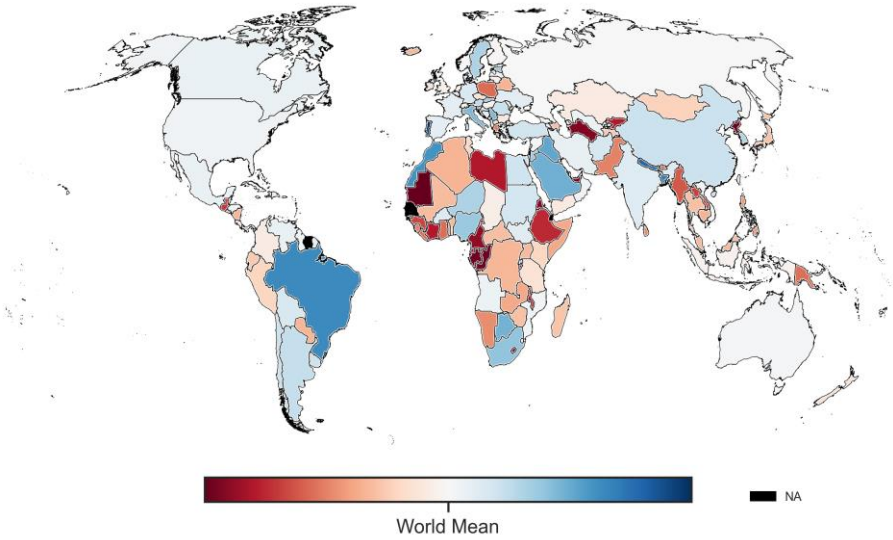


Figure XI: Absence of Discrimination

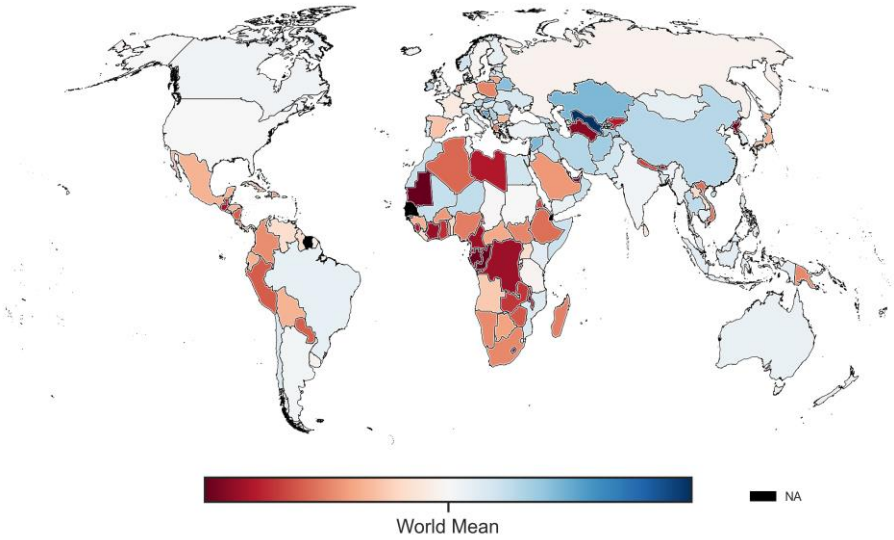


Figure XI: Challenging Authority

As explained in Section IV above, we include a country only if at least 30 folk narratives from that country are available. For some countries, far more folktales were included, such as Germany (1797), Greece (1321), France (1238), Italy (914), and Russia (818). The average number of folk narratives per country is 154 while the median is 77.5. The version of the HistoVaS based on ancestry adjusted population shares covers 172 countries.[31] Table II shows the number of countries included according to the major world regions. The complete list of countries can be found in the Appendix.

Table II: Country coverage in the HistoVas by world region

Region	**Number of countries covered**
Sub-Saharan Africa	44
South East Asia	26
South America	25
North Africa and the middle East	23
North western Europe	20
East Europe	19
Oceania	6
Central Asia	5
Neo-Europe[32]	4

31 The non-adjusted version of the HistoVaS covers 146 countries.

32 The United States, Canada, New Zealand and Australia are categorized as Neo-Europe.

By utilizing folk narratives from such a broad selection of countries, the HistoVaS does not only ensure geographic heterogeneity, but also a high degree of heterogeneity with regard to economic development. For example, the average real per capita income in 1990 is 9,519 $ with the largest value of 204,345 $ for the United Arab Emirates followed by Qatar and Kuwait and the lowest value of $310 for Mali.

Figure VII to XIII reveal a number of unexpected results. According to our analysis, cooperation promoted via folk narratives is highest in Slovakia, Moldova and Lebanon. Altruism, which we would expect to be highly correlated with cooperation, is similarly high in Lebanon, but also in Bangladesh and Bosnia and Herzegovina. Given that the inspiration for the work ethic category can be traced back to Max Weber and his writings on the protestant ethic, it is unexpected that we find some non-protestant countries scoring highest, such as Moldova, Lebanon, Slovenia, and Slovakia.

Regarding the absence of discrimination, Finland scores high and is joined by Lebanon and Malta. The final category, authority looks at norms that encourage the challenging of authority. A high score means that challenging authority is encouraged. In general, challenging people who set and enforce the rules directly is encouraged much more frequently than disobeying the rules (social norms) themselves. The lowest scoring countries are Mongolia and Saudi Arabia. Some of the high scorers include Kazakhstan, Uzbekistan, Chad, and South Africa.

Figure XIV documents the heterogeneity of the seven factors across world regions. The world mean in all seven groups is normalized to 0 and the data are transformed to have a standard deviation of 1. Most world regions display similar levels across most categories. Both Western and in particular Eastern Europe are well above the mean in all seven categories, whereas Sub-Saharan Africa and South America are well below the mean in most (if not all categories). Central Asia is special in the sense that it is above the mean in five categories but well below in two (namely altruism and the absence of discrimination).

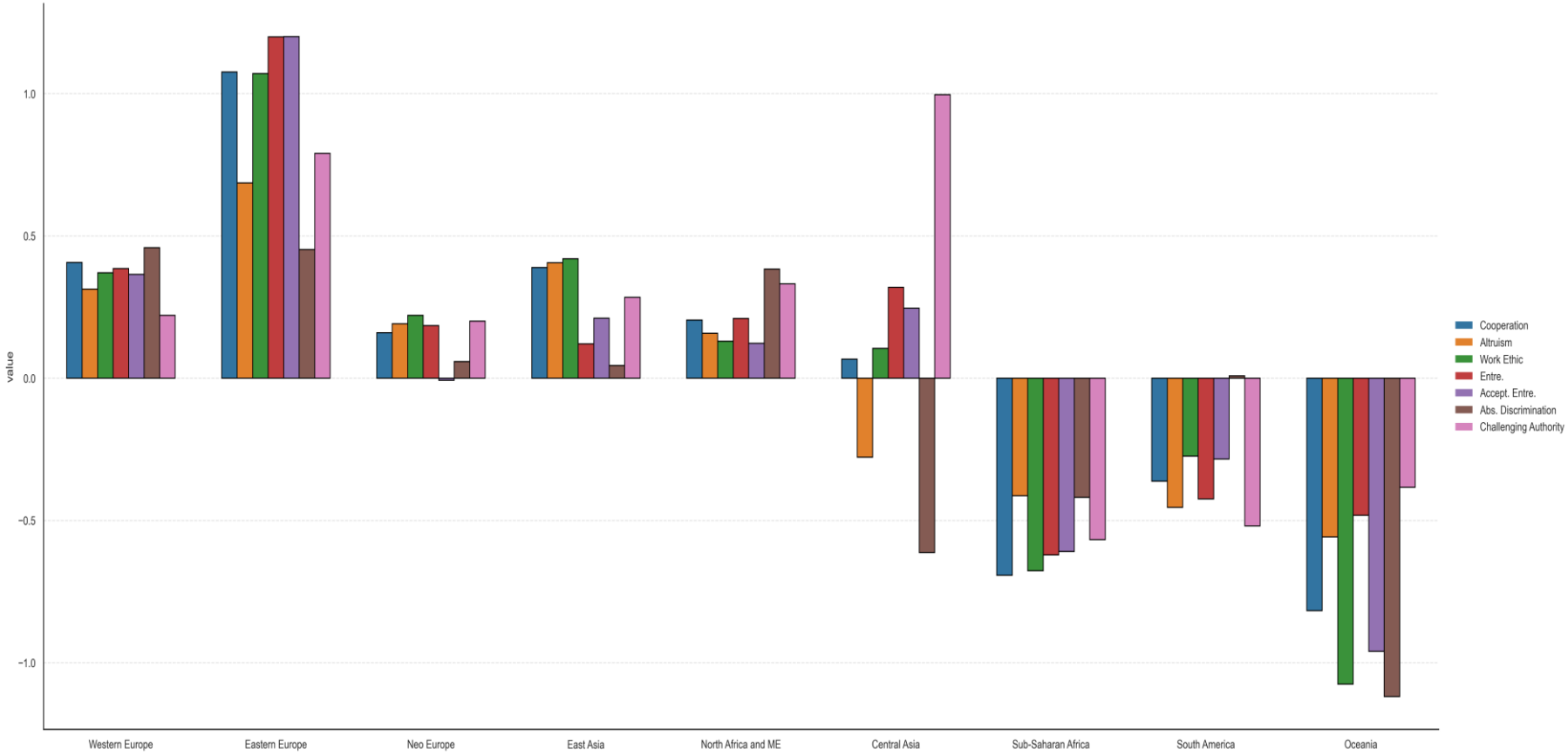


Figure XIV: Distance from World Average in Seven Factors across Regions

Until now, we have only shown descriptive statistics with regard to the seven factors introduced in Section III. But analyzing the geographical distribution of single variables can also be revealing.

Figure XV reveals interesting patterns. First, there is a strip of countries in Central Africa spanning from Cameroon via the Central African Republic and South Sudan to Ethiopia and Somalia in which folktale characters are discouraged from being honest. Other countries exhibiting similarly low scores include Sierra Leone, South Africa and Tunisia. All of these countries share a high degree of ethnolinguistic fractionalization.[33] Regarding the HistoVaS, they all score similarly in terms of their folktale characters being discouraged from keeping promises, in that characters do not cooperate with others but achieve their goals on their own, in that a person in need is not being helped, and that trusting others is discouraged. If these traits are internalized by folk narrative consumers and they act accordingly, they are likely to impede successful development.

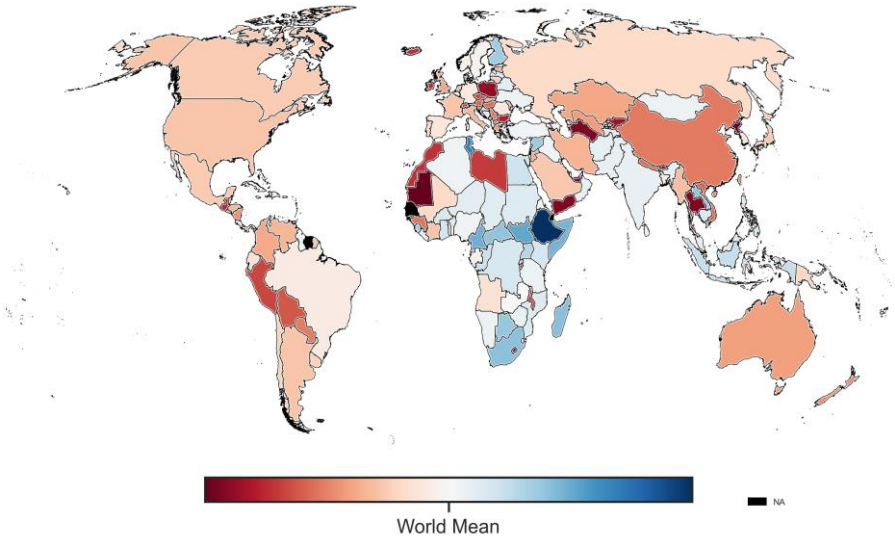


Figure XII: Honesty Discouraged

Another interesting pattern emerges when looking at whether the narrative encourages the possibility of failure and starting over again. Here, only a few

[33] While these countries do all possess a high degree of ethnolinguistic fractionalization, their colonization experiences are unique. Cameroon was first colonized by Germany, the Central African Republic by France, South Sudan by Britain, and Somalia by Italy. Ethiopia was occupied by Italy between 1936 and 1941 but never fully colonized.

folktale traditions prominently discourage starting over. Five of the top ten contenders are Asian countries (namely Laos, Vietnam, Maldives, East Timor, and Indonesia). These results may reflect the "face-saving" culture often attributed to Asian countries. The other five countries among the top ten are all central African countries (namely Nigeria, Cameroon, Equatorial Guinea, Benin, and the Central African Republic). If this attitude is internalized, it is also likely to impede successful development.

V. Economic Growth and Persistency of Values: Culture's Long Shadow

In this section, we use the HistoVaS to answer two questions. First, can the variables contained in the HistoVaS explain differences in contemporaneous rates of economic growth? And second, do the variables in the HistoVaS predict current values and norms, and potentially even observed behavior? We thus ask to what degree the values and norms contained in folk narratives are reflected in people's behavior and have effects on macroeconomic outcomes. Inquiring into contemporaneous growth rates is a particularly rigorous test as significant correlations would attest to the long-term impact of values and norms on economic outcomes. We are also concerned with the persistence of values and norms over a period spanning more than a century.

V.A. The HistoVaS and Contemporaneous Economic Growth

In this section, we ask to what degree historically prevalent values and norms still have important effects on the development of societies globally. The choice for the inclusion of particular values and norms into the HistoVaS was motivated by their theorized effects on economic development. This is why we now ask whether differences in HistoVaS values are reflected in differences in contemporaneous growth rates. This represents a particularly rigorous test regarding the potential impact of historically prevalent values and norms as they antedate contemporaneous growth rates by at least 100 years.

To do so, we estimate a growth model in the spirit of Barro (1991). We estimate the following equation:

$$\Delta y_i = \alpha + \beta Factor_{ji} + \gamma S_i + \delta C_i + \varepsilon_i$$

Our dependent variable is Δy_i which is the average real GDP growth per capita of country i between 1990 and 2019. S_i is a vector of standard explanatory variables for country i, $Factor_{ji}$ is one of the seven factors j in country i, C_i is a vector of potentially important covariates in country i and ε_i is the error term.

The average real GDP per capita growth rate is derived from the Penn World Tables, Version 10.01 (Feenstra et al., 2015). Real GDP per capita for each country in year *t* is computed by dividing its real GDP by its population in the same year. The growth rate of real GDP per capita in year *t* is defined as the percentage change in real GDP per capita from year *t-1* to year *t*. The average growth rate over the period 1990–2019 is calculated using a simple unweighted arithmetic mean. We choose to cover three decades of growth in order to reduce the influence of singular events. There are 140 countries that are covered by both the Penn World Tables and the HistoVaS. We present rather parsimonious models at the outset. Section V.B contains a number of robustness tests. There, we add potential confounders.

The vector Si consists of three variables that reflect growth theory and have been shown to be empirically linked to economic growth in previous studies (including Barro 1991, Mankiw et al. 1992, but also Acemoglu et al. 2001). These are the log of GDP per capita, a human capital index, and the investment rate, all measured in the initial period (1990). The information on human capital relies on two datasets that record average years of schooling.[34] For the investment rate, we rely on the Penn World Tables. Version 6.3 is the last version containing this variable and we, therefore, calculate the average for the years between 1990 and 2008.[35] In Table III, we display the results for our first factor, namely cooperation. In Table IV, the association between all factors and contemporaneous growth rates is shown.[36]

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34 Both of these (Barro-Lee and Cohen-Soto-Leker) have their strengths and weaknesses. The human capital index here used picks one of these depending on which one is closer to two other time-series data for years of schooling, namely one issued by UNESCO and the other one by De La Fuente-Domenech. The procedure is explained in more detail in "Human Capital in PWT 9.0" which is available at https://www.rug.nl/ggdc/docs/human_capital_in_pwt_90.pdf.

35 The World Bank Indicators contain more recent data for investment rates. When relying on them instead of the Penn World Tables, results remain virtually unchanged. Results are included in the supplementary materials.

36 The appendix contains the descriptive statistics.

Table III: Stepwise inclusion of key determinants on average growth, including the cooperation factor

	Dependent variable: average Growth rate between 1990-2019							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log initial income	-0.364**	-0.495**	-0.581***	-0.547***	-0.508*	-0.457*	-1.023**	-1.065**
	(0.143)	(0.200)	(0.223)	(0.202)	(0.267)	(0.239)	(0.516)	(0.498)
Human capital index		0.254	0.100	-0.112	0.033	-0.129	0.238	0.105
		(0.171)	(0.178)	(0.175)	(0.218)	(0.217)	(0.411)	(0.406)
Investment rate			0.608***	0.546***	0.256	0.211	0.850**	0.835***
			(0.190)	(0.188)	(0.312)	(0.290)	(0.348)	(0.323)
Cooperation factor				0.546***		0.355*		0.760***
				(0.139)		(0.186)		(0.238)
Intercept	5.045***	6.129***	6.927***	6.606***	6.487***	6.025***	10.430**	10.823***
	(1.247)	(1.688)	(1.877)	(1.709)	(2.291)	(2.056)	(4.264)	(4.090)
Observations	140	140	140	140	70	70	70	70
Adjusted R^2	0.064	0.074	0.144	0.219	0.191	0.232	0.147	0.259

Note: *p<0.1; **p<0.05; ***p<0.01

This table presents the results of OLS regressions. Robust standard errors are in parentheses. Model 5 and 6 restrict the sample to countries with a GDP per capita above the median in 1990, while models 6 and 7 refer to those below the median.

Log initial income has the expected negative coefficient whereas the investment rate has the expected positive sign. Our finding of a non-significant relationship between the human capital proxy and the average growth rate has been observed multiple times in the literature (e.g. Hanushek & Woessmann 2012, Pritchett 2001).

In column (4), we add the factor cooperation as described in detail in Section IV.D above. It is significant at the 1 percent level and the adjusted R square increases by more than seven percentage points as we include that factor. It may be argued that folk narratives have become less important as a means of teaching children values and norms over time. This appears particularly likely in societies with both higher education and higher incomes. To ascertain this possibility empirically, we split our sample into the countries that attained above (columns 5 and 6) and below median income in 1990 (columns 7 and 8). The coefficient for cooperation is more than twice as large for the countries with an income below the median. Values and norms have larger effects in rather poor countries.

Table IV: Correlation between factors and average growth rate, controlling for key determinants

	Dependent variable: average growth rate between 1990-2019						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log initial income	-0.547***	-0.532***	-0.521**	-0.544**	-0.543***	-0.587***	-0.540**
	(0.202)	(0.204)	(0.204)	(0.212)	(0.205)	(0.211)	(0.215)
Investment rate	0.546***	0.571***	0.501**	0.591***	0.571***	0.528***	0.584***
	(0.188)	(0.180)	(0.196)	(0.186)	(0.183)	(0.189)	(0.192)
Human capital index	-0.112	-0.031	-0.122	-0.130	-0.120	0.097	-0.071
	(0.175)	(0.167)	(0.175)	(0.175)	(0.178)	(0.168)	(0.174)
Cooperation	0.546***						
	(0.139)						
Altruism		0.508***					
		(0.126)					
Work ethic			0.559***				
			(0.165)				
Entre.				0.489***			
				(0.143)			
Accept entre.					0.559***		
					(0.139)		
Abs. discrimination						0.273**	
						(0.127)	
Challenging authority							0.458**
							(0.190)
Intercept	6.606***	6.482***	6.384***	6.610***	6.581***	6.941***	6.601***
	(1.709)	(1.725)	(1.722)	(1.785)	(1.733)	(1.782)	(1.802)
Observations	140	140	140	140	140	140	140
Adjusted R^2	0.219	0.215	0.215	0.200	0.214	0.163	0.193

Note: *p<0.1; **p<0.05; ***p<0.01

This table presents the results of OLS regressions. Robust standard errors are in parentheses. The initial year is 1990, and the averages are calculated for the period 1990–2019.

Table IV shows the results for all seven factors based on the parsimonious model just used with regard to the cooperation factor. Table IV shows that all seven factors are significant, most of them at the one percent level. The size of the coefficients

varies between 0.273 for the absence of discrimination and 0.559 for both work ethic and the acceptance of entrepreneurship.[37]

On average, the size of the coefficient for our seven factors is 0.48. This indicates that a country experiencing a one-standard-deviation improvement in its cultural factor from the mean would have grown 0.48 percent faster annually between 1990 and 2019. Note that the effect size indicated by the coefficient is likely to underestimate the full effect of the factors as they only capture the effect beyond that captured by human capital and investment.

Table V documents the results of a sample split for all seven factors. The estimate is always more precise with regard to the countries whose income was below the mean for all 140 countries in 1990 and the size of the coefficient is always significantly larger. The difference between the above versus below the median is particularly pronounced with regard to the factor absence of discrimination: it is small (and insignificant) for the richer countries whereas its size increases more than sixfold for the below median income countries. We interpret these results as implying that values and norms as transmitted via folk narratives are more important in low income than in high income countries. The factor work ethic constitutes an exception in the sense that work ethic remains significant also for countries above the mean.

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[37] Remember that the factor acceptance of entrepreneurship can also be interpreted as comprising those values that promote tolerance in a more general fashion.

Table V. Correlation between factors and average growth rate in poor and rich countries, controlling for key determinants

	Dependent variable: average Growth rate between 1990-2019													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Log initial income	-1.065**	-0.457*	-1.065**	-0.445*	-1.047**	-0.416*	-1.050**	-0.471*	-1.027**	-0.451*	-1.090**	-0.495*	-1.092**	-0.451*
	(0.498)	(0.239)	(0.492)	(0.241)	(0.516)	(0.235)	(0.508)	(0.251)	(0.497)	(0.245)	(0.524)	(0.272)	(0.508)	(0.245)
Investment rate	0.835***	0.211	0.855***	0.228	0.807**	0.147	0.878***	0.233	0.831***	0.262	0.742**	0.249	0.918***	0.166
	(0.323)	(0.290)	(0.310)	(0.290)	(0.337)	(0.283)	(0.330)	(0.301)	(0.320)	(0.291)	(0.326)	(0.319)	(0.334)	(0.295)
Human capital index	0.105	-0.129	0.293	-0.103	0.102	-0.178	0.016	-0.119	0.143	-0.147	0.368	0.027	-0.015	-0.096
	(0.406)	(0.217)	(0.370)	(0.216)	(0.418)	(0.216)	(0.370)	(0.223)	(0.405)	(0.227)	(0.402)	(0.221)	(0.382)	(0.210)
Cooperation	0.760***	0.355*												
	(0.238)	(0.186)												
Altruism			0.697***	0.343										
			(0.174)	(0.231)										
Work ethic					0.717**	0.466**								
					(0.325)	(0.195)								
Entre.							0.682***	0.291						
							(0.230)	(0.187)						
Accept entre.									0.744***	0.366*				
									(0.221)	(0.206)				
Abs. discrimination											0.505**	0.081		
											(0.198)	(0.206)		
Challenging authority													0.616**	0.393*
													(0.267)	(0.201)
Intercept	10.823***	6.025***	10.836***	5.936***	10.666**	5.654***	10.674**	6.170***	10.552***	5.964***	11.034**	6.346***	10.972***	6.029***
	(4.090)	(2.056)	(4.047)	(2.080)	(4.228)	(2.023)	(4.175)	(2.150)	(4.085)	(2.104)	(4.342)	(2.355)	(4.173)	(2.097)
Observations	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Adjusted R^2	0.259	0.232	0.257	0.226	0.238	0.256	0.236	0.211	0.242	0.226	0.190	0.182	0.223	0.231

Note: *p<0.1; **p<0.05; ***p<0.01

This table presents the results of OLS regressions. Robust standard errors are in parentheses. The initial year is 1990, and averages are calculated for the period 1990–2019. Countries with income below the median in 1990 are in odd numbered columns and countries with income above the median in even numbered columns.

In sum, culture as proxied by the values and norms transmitted via folktales is significantly associated with contemporaneous growth rates.

V.B. Robustness Tests

In this paper, we propose a novel way to explore the impact that historic values and norms have on modern day society. A host of robustness tests seem desirable. Throughout the text, we have already mentioned some robustness tests such as the coding similarity based on machine-translated vs human-translated texts, the minimum threshold we defined for including a fairy tale tradition into our analysis, having the coding done by a Chinese LLM instead of GPT and more. Therefore, we only add a limited number of additional tests here.

The results presented in Tables III and IV above rely on a parsimonious model. One reason for this is that we want to include as many countries as possible and that a number of potentially relevant control variables are only available for a subset of the countries included in the HistoVaS. To test the robustness of our findings, we add a number of controls at the price of a lower number of observations in Table XIII in the appendix. In column (3) of that table, we include the average inflation rate, the average rate of population growth, the average trade as a share of GDP, oil rents, and government consumption all of which have frequently been used in a Barro framework.

Inflation increases uncertainty and is, therefore, expected to affect growth negatively. An important strand of growth theory argues that the integration of a country into the world economy can be an important determinant for its growth (Frankel & Romer 1999 but see the critical evaluation of Rodrik et al. 2004). Proxying the integration into the world economy by the average share of trade in GDP (defined as (exports + imports)/GDP), we find that it is positively correlated with average growth. In addition, we also control for the average share of oil revenue in GDP and include a dummy for transition countries. It has been argued that being rich in natural resources may slow down economic growth due to the so-called resource curse (e.g. Mehlum et al. 2006 or Anderson & Aslaksen 2008) which is why we control for it by including the variable oil rent. Among these four variables, the share of GDP in international trade is the only one that is highly

significant. The inflation rate turns out to be marginally significant and the other two variables are not significant.[38]

The history of a country may have long-lasting effects on its growth path. Some argue that early statehood indicates that a state bureaucracy has been around for a long time implying that it has had the chance to develop efficient organizational structures. Others (such as Stasavage 2020) argue that early statehood could also imply that the rulers of a state were not dependent on the consent of the governed and the development of inclusive institutions was thus less likely.[39] Borcan et al. (2018) recently found a hump-shaped relationship between state history and economic development. In column (4), we therefore include the variable first published by Bockstette et al. (2002) and later updated by Borcan et al. (2018).[40] Having experienced colonization may have long-term impacts. It has been argued that the forced restructuring of many colonies was not in line with their comparative advantages. This would imply that a colonization experience would be associated with lower growth rates. Others (e.g. La Porta et al. 2004) argue that colonizers often also brought technology as well as human know-how that increased the productivity of the colonies and should therefore have a positive impact. To account for the possibility that colonial history still impacts upon current growth rates, we include dummy variables explicitly delineating four colonizers, namely the UK, France, Portugal, and Spain. The data are from Nunn and Puga (2012). It turns out that none of the dummies is significant.[41] Neither are the two state history variables.

We furthermore include a dummy variable for transition economies because transition may have led to temporary reductions in overall GDP. The variable is provided by the IMF (2000) but is not significant (column 5). Finally, we ask whether the quality of governance is associated with contemporaneous growth. To do so, we rely on the Worldwide Governance Indicators as provided by Kaufmann

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38 The average inflation rate, the share of trade in GDP and the oil rent are calculated using World Bank Indicators (2023).

39 According to Stasavage (ibid.), Europe's wealth can therefore be explained by its having had rather weak bureaucracies with a limited capacity to extract taxes from its subjects.

40 When we include the square of the state history variable, we do find a hump-shaped relationship but it is insignificant.

41 Digging deeper into colonial history, it may be worth controlling for two aspects, namely (1) the number of years a country functioned as a colony and (2) the number of years since independence. We did this and found qqq. Results are documented in the appendix.

et al. (2010). We calculated the first component of the six individual indicators[42] based on average values between 1990 and 2019. It turns out that this variable is not significantly associated with contemporaneous growth (column 6). In sum, even after having included a number of control variables, the cooperation factor remains significant and its coefficient relatively stable at around 1.2. Table XIV depicts the results for all seven factors when all covariates are included. In general, coefficient sizes decrease a bit and two factors (absence of discrimination and challenging authority) become insignificant.

Within a single folktale tradition, some narratives may encourage honest behavior whereas others may discourage it. Instead of only relying on the folk narratives that encourage certain behaviors deemed favorable and discouraging others deemed unfavorable, we calculated the net difference between the two. Although coefficient sizes are smaller than in the original models, significance levels remain virtually unchanged for all seven factors. We document the results in the appendix in Table XVI.

Yet another robustness test relies on the extensive margin only: here, we simply take into consideration the degree to which the various norms are mentioned in different folktale traditions. Interestingly, the results are very similar to those attained based on the intensive margin both in terms of significance but also in terms of coefficient sizes. Simply dealing with specific norms thus has effects very similar to encouraging specific behavior based on these norms. Being concerned with certain issues in folk narratives may already have effects on people's behavior independently of the concrete way in which an issue is being dealt with in the narrative.[43]

V.C. The HistoVaS and Contemporaneous Values

In Section V.A we show that historically prevalent values and norms are significantly correlated with contemporaneous growth rates. This does, however, not necessarily imply that the values and norms elicited from folk narratives have remained unchanged. Modernization theorists such as Inglehart argue that changes in values are primarily driven by economic development. This theory has been

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42 These are (1) voice and accountability, (2) regulatory quality, (3) political stability and absence of violence/terrorism, (4) rule of law, (5) government effectiveness, and (6) control of corruption.

43 A set of other robustness checks is included in the supplementary material.

criticized from various points of view. A central challenge for an empirical test of modernization theory has been the non-availability of long-term data on values and norms. The data contained in the HistoVaS can be one source for historical data and can, thus, be used to put modernization theory to an empirical test. Rather than attempting a full-fledged test here, we simply present a number of bivariate correlations between our historical data and contemporaneous variables. We begin by plotting the factor representing cooperation against the variable "positive reciprocity" as proposed in Falk et al. (2018).[44] As expected, the two variables are positively correlated and significant at the one percent level. It bears noting that Mexico, Haiti, South Africa and Tanzania are outliers in the sense that, given their historical cooperation norms, we would predict them to have higher levels of positive reciprocity today. Considering the level of violence experienced by the populations of these countries, it is plausible that current attitudes

about cooperation are lower than the norms extracted from folktales would

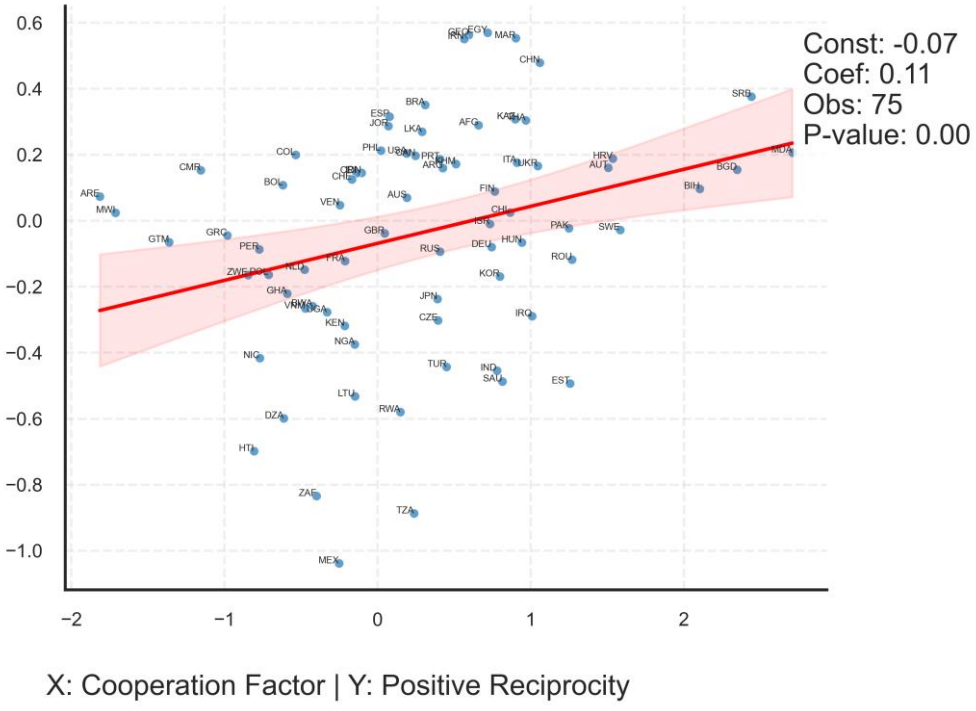


Figure XIIII: Persistence through time of "cooperation" values, correlation between HistoVaS latent factor and "positive reciprocity" proposed by Falk et al

predict.[45]

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44 The dimensions included were time preferences, risk preference, reciprocity, altruism, and trust.

45 As above, we present regression results including the constant and relying on robust standard errors.

When we plot the variable "altruism" as reported by Falk et al. (2018) against our altruism factor, we get a non-significant correlation. In addition to the countries already identified as outliers with regard to cooperation, we now need to add Czechia, Lithuania, Hungary, and Estonia as outliers. All four had a socialist regime four more than four decades and previous studies have shown that having experienced socialism has significant impacts on people's preferences, but also their propensity to behave dishonestly and to cooperate and behave solidarically (Alesina & Fuchs-Schündeln 2007, Ariely et al. 2019, and Ockenfels & Weimann 1999 respectively).

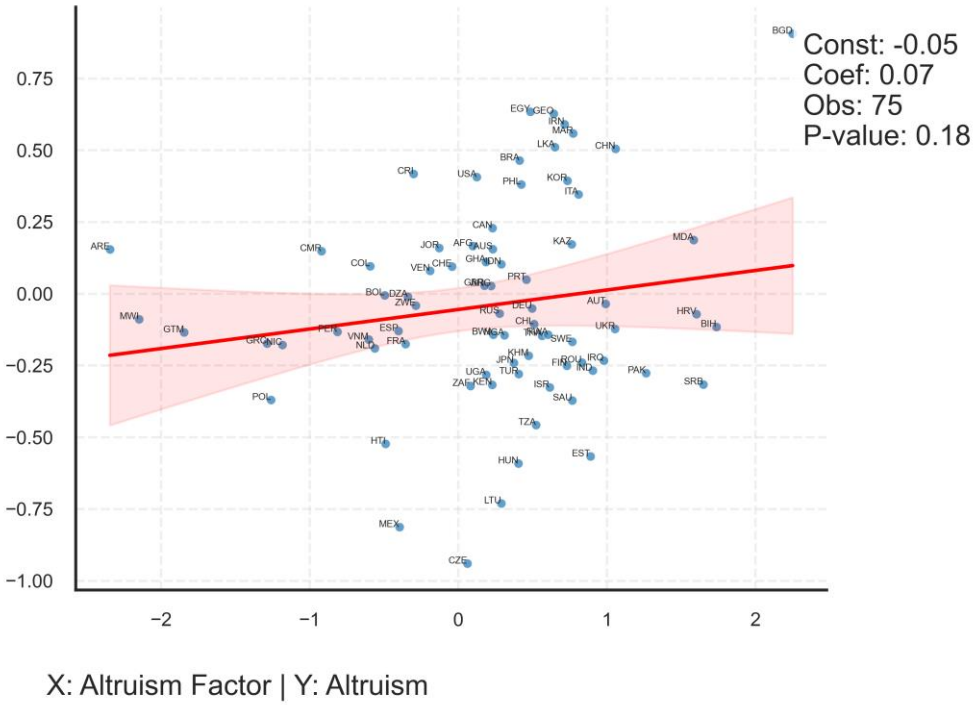


Figure XIV: Persistence through time of "Alruism" values, correlation between HistoVaS latent factor and "Altruism" proposed by Falk et al

But regarding altruism, we can take one further step and inquire to what degree the historically prevalent norm allows us to predict contemporaneous behavior. We consider voluntary blood donations as an altruistic act. The World Health Organization provides data on voluntary blood donations for a large number of countries. We include 146 countries in our plot (**Fehler! Verweisquelle konnte nicht gefunden werden.**) and find a correlation significant at the 5 percent level.

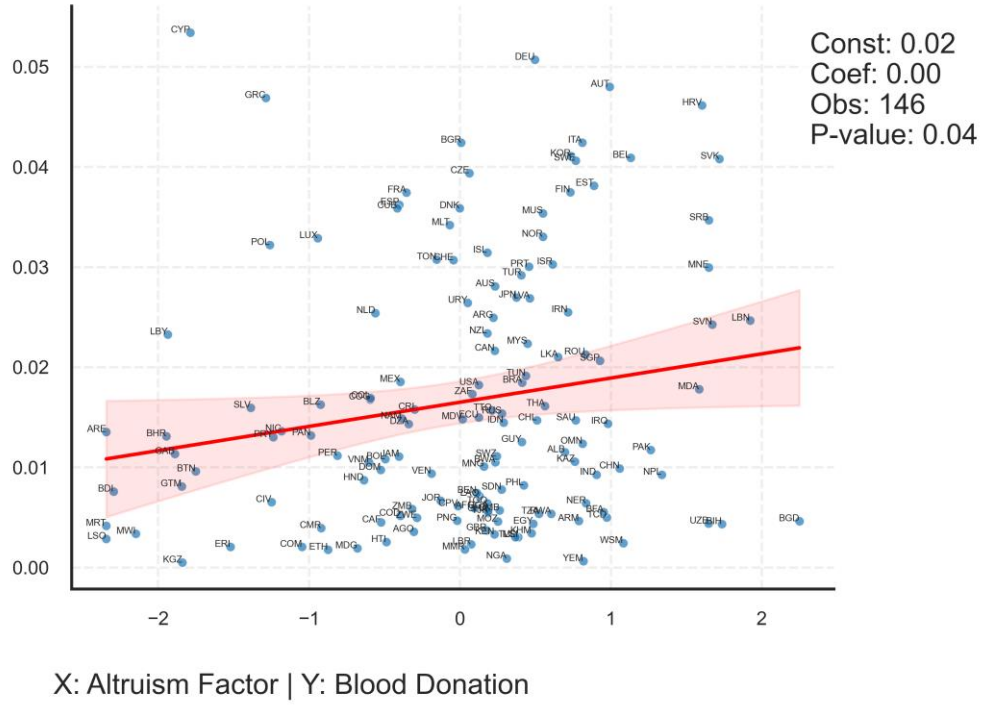


Figure XVI: Persistence through time of "Altruism" values, correlation between HistoVaS latent factor and "relative blood donation" from World Health Organization

Regarding work ethic, we correlate the respective factor with the importance parents attribute to teaching their children to save, taken from the World Values Survey. Based on observations from 104 countries, we find a highly significant correlation (Figure V).[46]

46 The variable "patience encouraged" has the highest factor loading on the work ethic factor. Plotting that variable alone against the "teaching children to save" variable from the WVS leads to very similar results as those based on plotting work ethic against the variable.

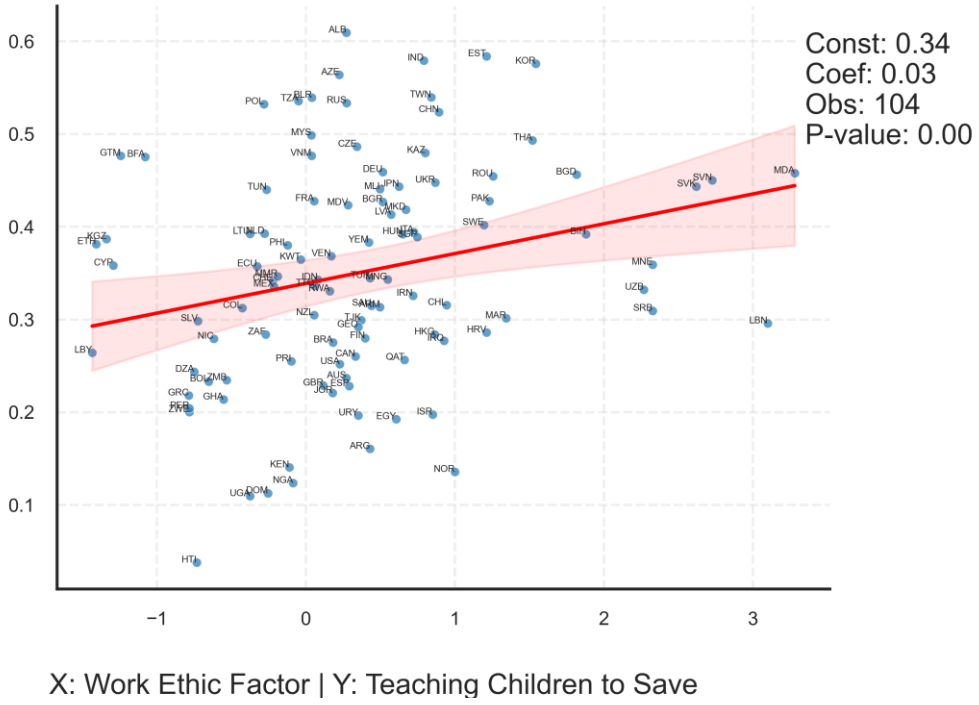


Figure XIV: Persistence through time of "work ethic" values, correlation between HistoVaS latent factor and "teaching children to save" from World Value Survey

For contemporary entrepreneurship, we rely on data provided by the Global Entrepreneurship Monitor (GEM), which has proved itself invaluable for the study of entrepreneurship. It contains various variables of interest. One of the variables produced from an adult population survey is labeled "entrepreneurial intentions rate". It depicts the percentage of the population aged between 18 and 64 who are latent entrepreneurs and who intend to start a business within three years, except for those individuals already engaged in some entrepreneurial activity. Plotted against our factor comprised of various norms that favor entrepreneurship and based on 50 countries, we find an insignificant correlation between folk narratives that encourage entrepreneurial behavior and entrepreneurial intentions. This finding seems to be fairly general as we also looked at the correlations with other variables. These include the percentage of a population that are established business owners / managers, but also the percentage of early-stage entrepreneurs.

A similar story emerges when we plot our factor depicting the acceptance of entrepreneurship against another variable also from the GEM. This variable records the percentage of the population that attaches high status to successful entrepreneurs. This variable is different from the previous one from the GEM, as it is based on a survey of national experts. Once again, we find an insignificant relationship between the two.

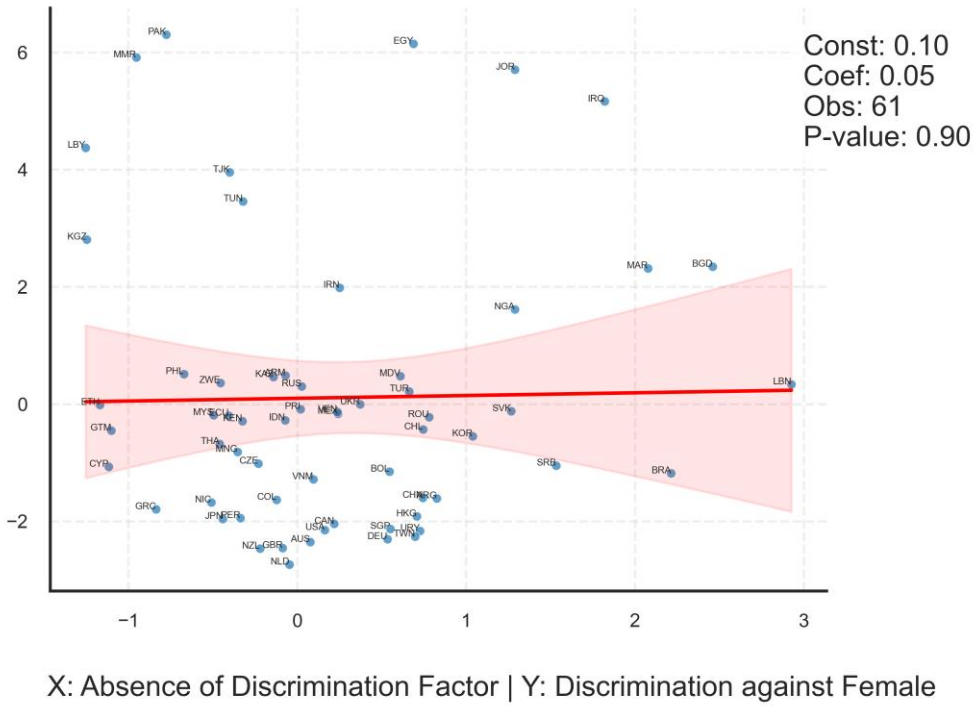


Figure XVI. Persistence through time of "absence of discrimination" values, correlation between HistoVaS latent factor and first principal component of variable measuring discrimination against female from World Value Survey

Regarding the factor dealing with discrimination, we correlate it with a number of variables from the World Values Survey aiming at identifying gender discrimination,[47] but once again we find no significant correlation. We expect that norms regarding discrimination have changed over the century in different ways, at least in those countries covered by the World Values Survey. Another potential reason we do not find a strong correlation may be due to a less than perfect fit: whereas our factor refers to different kinds of discrimination, the questions from the World Values Survey refer exclusively to gender discrimination.

The final factor we use combines several variables that deal with authority. The World Values Survey contains a list of eleven "qualities that children can be encouraged to learn at home", and respondents are asked to mention up to five which they consider to be "especially important". When correlating those who

47 We correlated our discrimination factor with a principal component derived from seven questions contained in the World Values Survey that ask, e.g., whether respondents agree with statements such as "child suffers from working mom", or "men make better political leaders than women do" etc.

mention “obedience” in the World Values Survey with our authority factor results in – as expected - a strong negative correlation (p= 0.00).

In sum, our correlations indicate that some values and norms have been subject to change (namely those referring to entrepreneurship, acceptance of entrepreneurship, and discrimination) whereas others have remained relatively stable (namely those referring to cooperation, altruism, work ethic and challenging authority). A natural follow-up question is by whom values are transmitted to the next generation. To answer that question, the epidemiological approach as implemented by Fernandez (2010) enables us to gain some insights as we are able to separate institutional from cultural determinants regarding the values and norms held by second-generation immigrants. Second-generation immigrants are all subject to the same formal institutions if they are born and raised in the same country (say in the US). If the values and norms they hold correlate systematically with the values and norms held by the citizens of the origin country of their parents, this is interpreted as evidence for a cultural transmission of values.

We cannot implement the epidemiological approach across all factors or even variables contained in the HistoVaS here. Above, we saw that the values and norms aggregated into the factor “challenging authority” were among the most persistent ones which is why we picked that factor as an example of how the epidemiological approach could be used to gain new insights regarding dominant transmission channels.

Fehler! Verweisquelle konnte nicht gefunden werden. in the appendix provides two regressions based on the simple estimation in the epidemiological approach (Fernandez, 2011). This approach enables us to identify the main channels through which beliefs and attitudes are transmitted from one generation to the next. If, even after controlling for a number of personal traits, second generation immigrants whose parents came from different countries display important differences in their attitudes and beliefs, we attribute these differences to the cultural heritage of their parents. In this estimate, we only take second generation immigrants into account whose parents both originated from the same country.

We rely on data as documented in the World Values Survey Time Series. The data allow us to control for a number of socio-demographic variables such as age, gender, income, and education. In addition, the mean beliefs and attitudes in both the respective country of origin and the country of residency are taken into account. We first regress individuals’ beliefs and attitudes regarding the importance of

teaching children obedience on our "challenging authority" factor and find that the mean value of this factor in both the origin country and the country of residency are negatively correlated with the outcome variable. We interpret this as implying that the underlying values are both horizontally but also vertically transmitted (for the distinction between horizontal and vertical transmission, see Cavalli-Sforza & Feldman 1981 and Bisin & Verdier 2023).

The second regression documented in Table IX digs a bit deeper by analyzing the transmission of a more specific aspect, namely religious faith. In this case, the importance of teaching children religious faith is regressed on the mean values of "challenging otherworldly authority encouraged." Here again, the mean value of that variable in the country of origin is highly negatively correlated with the dependent variable whereas the mean value of the country of residency is not.

In summary, in this section we have offered numerous examples showing that some of the values and norms prevalent in historic folktales are still prevalent in contemporaneous societies whereas other have been subject to substantial change. Systematic analysis of the variables contained in the HistoVaS can help shed light on which values and norms tend to be persistent, and which ones are subject to significant change over time. In analyzing these questions more profoundly it may be interesting to compare the correlations that attain when using the ancestry adjusted scores with the unadjusted scores as this can be one way to ascertain the possible impact of migration on value change.[48] Comparing bivariate correlations between the adjusted and unadjusted scores may help elucidate the means and speed with which norms converge between populations.[49]

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48 Table XII in the appendix reports all correlations for both adjusted and unadjusted factors.

49 In their study on the persistence and evolution of culture, Giavazzi et al. (2019) analyze norm convergence of migrants to the United States over four generations. They hypothesize that the speed in norm convergence is determined by the transactional gains that come along with aligned norms, and their findings largely align with this hypothesis. According to them, cooperation norms are the fastest to converge whereas norms referring to abortion and sexual behavior are the slowest to converge.

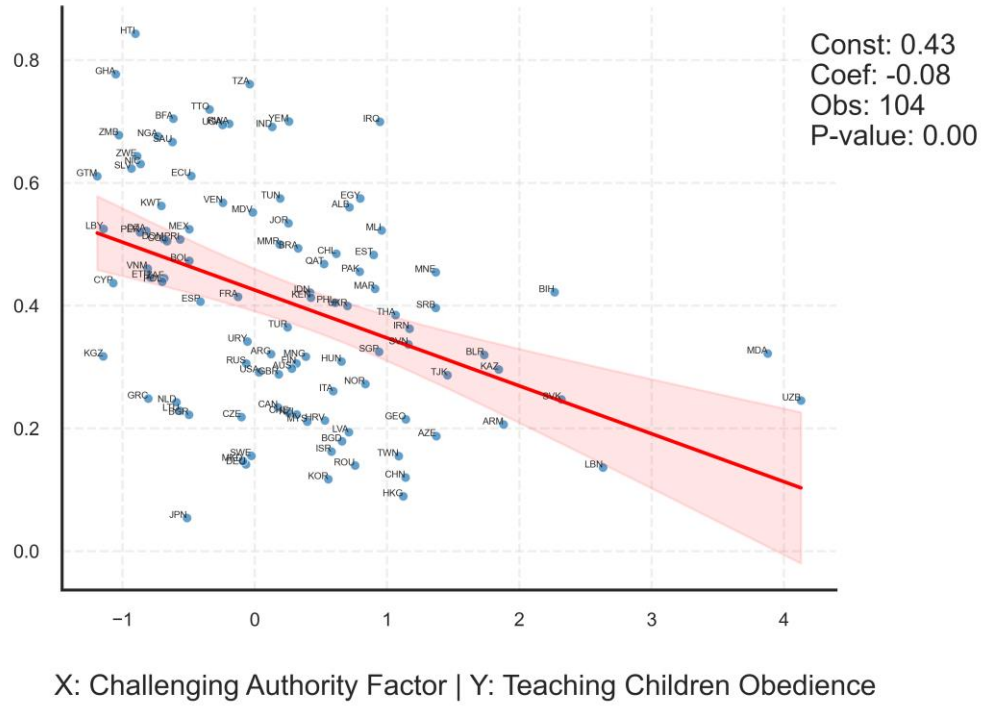


Figure XVII: Persistence through time of "challenging authority" values, correlation between HistoVaS latent factor and "teaching children obedience" from World Value Survey

VI. Conclusions and Outlook

This paper introduces the HistoVaS dataset. It contains 36 variables theorized to be relevant for economic development and is coded based upon a sample of more than 27,000 folktales. It covers 172 modern day countries. We show that there is a considerable degree of heterogeneity with regard to values and norms between regions, but also between countries grouped into the same geographical region.

Based on the assumption that the data contained in the HistoVaS are a good proxy for various aspects of culture, we show that culture has a robust and significant effect on contemporaneous growth rates. Our focus was on the direct effect of culture, but it is also likely that there is an indirect effect by which culture may be a determinant of formal institutions a society chooses and its ensuing quality of governance. The data contained in HistoVaS make it possible to study this and other possible transmission channels.

Some of the historically prevalent values and norms contained in the HistoVaS can predict current norms and attitudes fairly well. This is, however, not the case for all the variables contained in our dataset. Future studies could rely on the HistoVaS to

shed new light on the debates between the adherents of modernization theory and its critics. The HistoVaS enables novel insights as it allows for the analysis of the persistence of single values and norms over time.

Atari and Henrich (2023) have recently proposed an extension of established psychology into historical psychology which would focus on changes in human psychology over time. They recommend to extract psychological information from large-scale historical corpora. The HistoVaS dataset may also be used to advance that research avenue.

The HistoVaS data contained in this paper are all aggregated at the nation state level. As described in section II above, there are good reasons for choosing this level of aggregation. However, there are also good reasons for taking a more fine-grained approach. For example, very large states with large populations may be home to more than one folktale tradition. One avenue for future research could potentially analyze folktale traditions at the regional level.

Analyzing such a large dataset was made possible by relying on artificial intelligence. But in no way has its potential been exhausted yet. As large language models become more powerful, reliable and cost-efficient, more fine-grained insights will be possible. In a survey paper, Guiso et al. (2006) asked: “Does Culture Affect Outcomes?” They contend that answering that question convincingly presupposes the possibility to establish a clear link between culture and preferences and expectations and, in turn, between preferences and economic outcomes. At the same time, reverse causality would need to be dealt with adequately. We are optimistic that the HistoVaS enables important progress in answering the question posed by Guiso et al. (2006) and others like it, as it establishes the link between culture (as represented in folk narratives) and preferences while erasing the risk of reverse causality by relying on very old folk narratives. Data contained in the HistoVaS may, therefore, also serve as instrumental variables in future studies. Given all these prospects, it is tempting to finish this paper with the concluding sentence of many fairy tales that they all lived happily ever after and refer to academics. But this would be a fabulous, rather than an academic ending.

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Appendix A: List of countries

Table V: List of Countries included in the HistoVaS

Afghanistan	China	Guatemala	Libya	Paraguay	Thailand
Albania	Taiwan	Guinea	Lithuania	Peru	Togo
Algeria	Colombia	Guyana	Luxembourg	Philippines	Tokelau
Angola	Comoros	Haiti	Madagascar	Poland	Trinidad and Tobago
Azerbaijan	Congo	Honduras	Malawi	Portugal	United Arab Emirates
Argentina	DR Congo	Hong Kong	Malaysia	Guinea-Bissau	Tunisia
Australia	Cook Islands	Hungary	Maldives	East Timor	Turkey
Austria	Costa Rica	Iceland	Mali	Puerto Rico	Turkmenistan
Bahrain	Croatia	India	Malta	Qatar	Uganda
Bangladesh	Cuba	Indonesia	Mauritania	Romania	Ukraine
Armenia	Cyprus	Iran	Mauritius	Russia	Macedonia
Belgium	Czechia	Iraq	Mexico	Rwanda	Egypt
Bhutan	Benin	Ireland	Mongolia	Saudi Arabia	United Kingdom
Bolivia	Denmark	Israel	Moldova	Serbia	Tanzania
Bosnia and Herzegovina	Dominican Republic	Italy	Montenegro	Sierra Leone	USA
Botswana	Ecuador	Ivory Coast	Morocco	Singapore	Burkina Faso
Brazil	El Salvador	Jamaica	Mozambique	Slovakia	Uruguay
Belize	Equatorial Guinea	Japan	Oman	Vietnam	Uzbekistan
Bulgaria	Ethiopia	Kazakhstan	Namibia	Slovenia	Venezuela
Myanmar	Eritrea	Jordan	Nepal	Somalia	Samoa
Burundi	Estonia	Kenya	Netherlands	South Africa	Yemen
Belarus	Fiji	North Korea	New Zealand	Zimbabwe	Zambia
Cambodia	Finland	South Korea	Nicaragua	Spain	
Cameroon	France	Kuwait	Niger	South Sudan	
Canada	Gabon	Kyrgyzstan	Nigeria	Sudan	
Cabo Verde	Georgia	Laos	Niue	eSwatini	
Central African Republic	Gambia	Lebanon	Norway	Sweden	
Sri Lanka	Germany	Lesotho	Pakistan	Switzerland	
Chad	Ghana	Latvia	Panama	Syria	
Chile	Greece	Liberia	Papua New Guinea	Tajikistan	

Appendix B: Description of variables

Table VI: Summary Statistics of Variables

Name, Definition	Source	Unt. of analysis	Scale	Obs	Mean	SD	Min	Max
Overarching moral message: whether a folktale has an overarching moral message	HistoVaS	F*	Binary	27,137	-	-	-	-
First factor for cooperation*: The first factor of variables assigned to the thematic group cooperation	HistoVaS	C.**	Numeric (normalized)	172	0	1	-1.81	2.96
First factor for altruism*: The first factor of variables assigned to the thematic group altruism	HistoVaS	C	Numeric (normalized)	172	0	1	-2.34	2.24
First factor for work ethic*: The first factor of variables assigned to the thematic group work ethics	HistoVaS	C	Numeric (normalized)	172	0	1	-1.72	3.28
First factor for entrepreneurship*: The first factor of variables assigned to the thematic group entrepreneurship	HistoVaS	C	Numeric (normalized)	172	0	1	-1.50	3.14
First factor for acceptance of entrepreneurship*: The first factor of variables assigned to the thematic group	HistoVaS	C	Numeric (normalized)	172	0	1	-1.70	3.50
First factor for discrimination*: The first factor of variables assigned to the thematic group discrimination	HistoVaS	C	Numeric (normalized)	172	0	1	-1.56	3.50
First factor for challenging authority*: The first factor of variables assigned to the thematic group challenging authority	HistoVaS	C	Numeric (normalized)	172	0	1	-1.43	3.49
Positive Reciprocity: returning a favor.	Falk et al. (2018)	C	Numeric (normalized)	76	-0.03	0.34	-1.03	0.56
Altruism	Falk et al. (2018)	C	Numeric (normalized)	76	-0.03	0.34	-0.93	0.90
Important child qualities: obedience: the share of population expressing obedience as especially important quality that children can be encouraged to learn.	World Values Survey (time series)	C	Percentage	108	0.40	0.18	0.05	0.84

important child qualities: thrift saving money and things: the share of population expressing thrift saving money and things as especially important quality that children can be encouraged to learn.	World Values Survey (time series)	C	Percentage	108	0.34	0.11	0.03	0.60
Relative blood donation: total amount of blood donation in one year divided by population of country	Global status report on blood safety and availability 2021	C	Numeric	159	0.01	0.012	0.0005	0.05
Entrepreneurial Intention Rate: the share of population answering the following question affirmatively: Do you expect to start a new business in the next 3 years?	Global Entrepreneurship Monitor (GEM)	C	Percentage	50	0.27	0.15	0.06	0.63
Perception about Entrepreneurship: the share of population answering the following question positively: Is there a lot of media attention for entrepreneurship in your country?	Global Entrepreneurship Monitor (GEM)	C	percentage	49	0.67	0.11	0.36	0.92
Average growth rate of GDP per capita	Penn World Table version 10.01	C	Numeric	173	2.08	1.71	-2.38	8.2
Average investment rate (normalized)	Penn World Table version 6.03	C	Numeric	185	0	1	-1.60	4.19
Human capital index in 1990 (normalized)	Penn World Table version 10.01	C	Numeric	143	0	1	-1.04	2.42
Population growth rate	Penn World Table version 10.01	C	Numeric	173	1.5	1.27	-1.14	6.48
Government consumption (normalized)	Penn World Table version 10.01	C	Numeric	173	0	1	-3.12	2.07
Average inflation rate (normalized)	World Bank Indicator	C	Numeric	169	0	1	-0.84	8.10
Average share of trade in GDP (normalized)	World Bank Indicator	C	Numeric	169	0	1	-1.26	5.42
Average share of oil revenue in GDP -oil rent (normalized)	World Bank Indicator	C	Numeric	169	0	1	-0.71	3.66
Colonial history: UK, France, Portugal, Spain	Nunn & Puga (2012)	C	Binary	-	-	-	-	-

Sub-Saharan, Caribbean and Latin Countries	UN	C	Binary	-	-	-	-	-
Transition Economies	IMF	C	Binary	-	-	-	-	-
First principle component of world governance indicator (calculated based on average all governance indicators between)	WGI	C	Numeric	169	0	2.14	-3.95	4.60
Log History Agricultural Transition: It measures of the years since the transition to agriculture for each country. We adjusted data according to the ancestors of each population. We use log of this variable to capture the non-linearity of the effect as well	Chanda & Putterman (2007)	C	Numeric	163	7.58	2.34	0	11.18
Ancestory adjusted state history index (normalized, adjustment according to World Migration Matrix)	Borcan et. Al (2018)	C	numeric	165	0	1	-1.05	3.75
Share of population in each country A migrated from country B	World Migration Matrix	C	Percentage	177	-	-	-	-

* Folktale level.
** Country level.

Appendix B: Factor Loadings

VII: Factor Loadings

Factor	Variable	Loading
Cooperation	trust encouraged	0.943
	Who trust? strangers	0.944
	promise encouraged	0.82
	punishing bad deed encouraged	0.819
	punishing good deed discouraged	0.928
	Instance of cooperation described	0.886
	with whom cooperate? Strangers	0.933
Altruism	revenge discouraged	0.852
	Third party punishment encouraged	0.831
	Instance of help described	0.985
	Whom help? Strangers	0.972
Work ethic	honesty encouraged	0.74
	Attention to detail encouraged	0.788
	Hard work encouraged	0.915
	patience encouraged	0.964
	punctuality encouraged	0.238
Entrepreneurship	Improving social status encouraged	0.895
	Geographical mobility encouraged	0.945
	Taking reasonable risk encouraged	0.97

	restart encouraged	0.96
Accept entrepreneurship	individualism encouraged	0.554
	Acceptance of different outcome encouraged	0.833
	Acceptance of diversity encouraged	0.026
	Openness to encouraged	0.902
	envy discouraged	0.99
Absence discrimination	Relying on first impression discouraged	0.644
	instance of female empowerment described	0.657
	Instance of treating elderly with revere described	0.55
	Instance of discrimination described	0.94
	Instance of discrimination against female described	0.904
	discrimination discouraged	0.981
	Discrimination against female discouraged	0.896
Challenging authority	Norm abidance discouraged	0.507
	Norm abidance encouraged	0.561
	Challenging authority encouraged	0.997
	Social norms challenged	0.576
	Otherworldly authority challenged	0.587
	Religious authority challenged	0.085

	State representative challenged	0.872
	Family/clan challenged	0.485

Appendix C: Distance from the mean in each factor across regions

VIII: Distance from the world mean in each factor across regions

	Coope-ration	Altruism	Work Ethic	Entre-preneur-ship	Acceptance of Entrepreneurship	Discrimination	Challenge Authority
Western Europe	0.137	0.134	0.113	0.123	0.104	0.131	0.054
Eastern Europe	0.363	0.293	0.327	0.382	0.343	0.130	0.191
Neo-Europe	0.054	0.082	0.067	0.059	-0.002	0.017	0.049
South and East Asia	0.131	0.173	0.128	0.038	0.060	0.013	0.069
North Africa and ME	0.069	0.068	0.040	0.067	0.035	0.110	0.080
Central Asia	0.023	-0.118	0.032	0.102	0.070	-0.175	0.241
Sub-Saharan Africa	-0.233	-0.176	-0.206	-0.198	-0.174	-0.120	-0.137
South America	-0.122	-0.194	-0.083	-0.135	-0.081	0.002	-0.126
Oceania	-0.275	-0.238	-0.328	-0.153	-0.274	-0.320	-0.093

Notes: Neo-Europe includes the United States, Canada, Australia, and New Zealand. Regional averages of each value are expressed in terms of standard deviations from the world mean. Country means are based on ancestry adjusted population shares.

Appendix C: other Analysis

Analysis Epidemiological Approach: Result of regression

Table IX: Result of Epidemiological approach for obedience and religious faith

	Obedience	ReligiousFaith
Intercept	0.229***	0.253***
	(0.023)	(0.027)
Gender	0.005	0.011*
	(0.005)	(0.006)
Age	-0.013*	-0.002
	(0.008)	(0.011)
Education	-0.056***	-0.018
	(0.012)	(0.013)
Income	-0.005	-0.008
	(0.008)	(0.012)
Challenging authority origin	-0.036**	
	(0.016)	
Challenging authority residency	-0.049**	
	(0.022)	
Challenging otherworldy authority origin		-0.068***
		(0.020)
Challenging otherworldy authority residency		-0.094**
		(0.040)
Observations	4651	4687
Adjusted R^2	0.044	0.098
Note:		*p<0.1; **p<0.05; ***p<0.01

Standard errors are clustered at the country level of residency.

Appendix D Description of Sources for corpus

Table X: Number of Folktales from each Source

Source	**No. Folktales**
Ashliman Archive	1,622
Multilingual Folktales Database	7,194
Fairytalez website	1,481
Anthologies	16,345
Academic Journals	495

Results of Mann – Whitney U test

Table XI: Results of the two-sided Mann-Whitney U test to test whether the results in phase 1 and phase 2 are significantly different from each other*

	Full**	Base***
Cooperation	15093 (0.744)	15157 (0.692)
Altruism	14492 (0.745)	14542 (0.786)
Work ethic	14773 (0.984)	14791 (0.999)
Entrepreneurship	14923 (0.887)	15062 (0.770)
Accept entrepreneurship	14976 (0.842)	15098 (0.850)
Absence discrimination	14967 (0.849)	14966 (0.850)
Challenging authority	14747 (0961)	14956 (0.859)

* Teh Mann-Whitney U test is a nonparametric method used to test the null hypothesis that two sample originate from the same underlying distribution.

** Correlations between factors calculated based on 28000 folktales in phase 2 and factors calculated based on 15678 in phase 1.

*** Correlations between factors calculated on 15678 folktales in phase 2 and factors calculated based on the same folktales in phase 1

Appendix E: Results in Details

Bivariate correlations between adjusted and unadjusted factor scores

Table XII: Bivariate correlations between past and present for adjusted and unadjusted Factors

Factor	**Present variable**	**Adjusted**	**Unadjusted**	**No. Observation**
Cooperation	Positive Reciprocity	0.336 (0.004)	0.292 (0.014)	70
Altruism	Altruism	0.215 (0.073)	0.195 (0.105)	70
Altruism	Blood Donation	0.098 (0.281)	0.093 (0.306)	122
Work Ethic	Teaching children to save	0.269 (0.010)	0.277 (0.008)	90
Entrepreneurship	Entrepreneurial intention	0.039 (0.803)	0.152 (0.328)	43
Acceptance of entrepreneurship	High respect for entrepreneurship	-0.140 (0.374)	-0.066 (0.675)	42

Absence of discrimination	First principle component of variables linked to discrimination against female	0.059 (0.673)	0.157 (0.264)	52
Challenging authority	Teaching children obedience	-0.386 (0.000)	-0.329 (0.001)	90

*Numbers in parentheses are p-value of Pearsonr test.

Appendix F: Robustness Checks

Adding Control variables

Cooperation with all controls

Table XIII: Correlation of cooperation factor and average growth rate after controlling for potential confounders

	Dependent variable: average Growth rate between 1990-2019					
	(1)	(2)	(3)	(4)	(5)	(6)
Log initial income	-0.581***	-0.547***	-0.620**	-0.675**	-0.649**	-0.681**
	(0.223)	(0.202)	(0.259)	(0.311)	(0.313)	(0.318)
Investment rate	0.608***	0.546***	0.284	0.167	0.246	0.205
	(0.190)	(0.188)	(0.236)	(0.234)	(0.244)	(0.253)
Human capital index	0.100	-0.112	-0.230	-0.229	-0.311	-0.369
	(0.178)	(0.175)	(0.222)	(0.275)	(0.284)	(0.294)
Cooperation factor		0.546***	0.496***	0.425**	0.397**	0.419**
		(0.139)	(0.175)	(0.185)	(0.195)	(0.200)
Average inflation rate			-0.408**	-0.410*	-0.452*	-0.399
			(0.186)	(0.230)	(0.255)	(0.246)
Population growth rate			-0.174	-0.303	-0.272	-0.263
			(0.154)	(0.186)	(0.196)	(0.192)
Average share of trade in GDP			0.216	0.445**	0.396**	0.397**
			(0.138)	(0.190)	(0.180)	(0.183)
Oil rent			0.070	0.102	0.084	0.192
			(0.322)	(0.336)	(0.334)	(0.366)
Government consumption			-0.117	-0.057	-0.062	0.009
			(0.266)	(0.306)	(0.309)	(0.321)
State history index				0.371	0.289	0.297
				(0.413)	(0.403)	(0.413)
State history squared				-0.235	-0.178	-0.164
				(0.302)	(0.297)	(0.300)
Colonial UK				0.479	0.469	0.486
				(0.497)	(0.507)	(0.517)
Colonial France				-0.144	-0.249	-0.149
				(0.692)	(0.651)	(0.643)
Colonial Portugal				0.432	0.468	0.493
				(0.866)	(0.894)	(0.866)
Colonial Spain				0.442	0.451	0.569
				(0.653)	(0.642)	(0.659)

Transition economy					0.820	1.049*
					(0.544)	(0.632)
First component of WGI						0.125
						(0.113)
Intercept	6.927***	6.606***	7.463***	7.960***	7.636***	7.818***
	(1.877)	(1.709)	(2.188)	(2.576)	(2.599)	(2.628)
Observations	140	140	132	126	126	126
Adjusted R^2	0.144	0.219	0.274	0.273	0.289	0.290
Note:					*p<0.1; **p<0.05; ***p<0.01	

This Table reports the results of OLS regressions. Standard errors in parentheses are robust. The initial year is 1990. Averages are calculated for the years between 1990 and 2019.

All factors with controls

Table XIV: Effect of the Cooperation Factor on the Average Growth Rate After Controlling for Potential Confounders

	Dependent variable: average Growth rate between 1990-2019						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log initial income	-0.681**	-0.649**	-0.634*	-0.674**	-0.665**	-0.703**	-0.680**
	(0.318)	(0.317)	(0.326)	(0.324)	(0.322)	(0.329)	(0.326)
Average investment rate	0.205	0.224	0.169	0.221	0.212	0.152	0.195
	(0.253)	(0.239)	(0.257)	(0.257)	(0.250)	(0.255)	(0.256)
Human capital index	-0.369	-0.331	-0.407	-0.395	-0.386	-0.244	-0.367
	(0.294)	(0.290)	(0.298)	(0.297)	(0.297)	(0.306)	(0.303)
Average share of trade in GDP	0.397**	0.439**	0.389**	0.374**	0.401**	0.390**	0.360*
	(0.183)	(0.189)	(0.185)	(0.183)	(0.180)	(0.184)	(0.184)
Cooperation	0.419**						
	(0.200)						
Altruism		0.464***					
		(0.175)					
Work ethic			0.423*				
			(0.249)				
Entre.				0.360*			
				(0.195)			
Accept entre.					0.440**		
					(0.195)		
Ab. discrimination						0.170	
						(0.167)	
Challenging authority							0.282
							(0.258)
Intercept	7.818***	7.559***	7.447***	7.770***	7.658***	8.107***	7.955***
	(2.628)	(2.604)	(2.702)	(2.672)	(2.660)	(2.697)	(2.676)
Observations	126	126	126	126	126	126	126
Adjusted R^2	0.290	0.303	0.288	0.280	0.291	0.260	0.268

Note: *p<0.1; **p<0.05; ***p<0.01

This Table reports the results of OLS regressions. Standard errors in parentheses are robust. The initial year is 1990. Averages are calculated for the years between 1990 and 2019. In all models, the following variables are controlled for but not shown to save space: inflation rate, rate of population growth, share of trade in GDP, oil rent (percentage of oil revenue in GDP), government consumption, transition economy, stat history index, being colonized by France, UK, Portugal or Spain, first principle component of World Governance Index.

Robustness regarding the construction of the factors

Here: Factors based on net value within folktale traditions

Table XV: Factors as based on their net values within folktale traditions*

	Dependent variable: average Growth rate between 1990-2019						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log initial income	-0.550***	-0.551***	-0.530***	-0.555***	-0.546***	-0.596***	-0.540***
	(0.204)	(0.204)	(0.204)	(0.213)	(0.205)	(0.206)	(0.200)
Human capital index	-0.123	-0.064	-0.122	-0.112	-0.114	0.097	-0.079
	(0.173)	(0.169)	(0.176)	(0.176)	(0.178)	(0.165)	(0.164)
Investment rate	0.546***	0.556***	0.492**	0.600***	0.571***	0.514***	0.493***
	(0.187)	(0.182)	(0.199)	(0.186)	(0.182)	(0.189)	(0.186)
Cooperation net value	0.556***						
	(0.134)						
Altruism net value		0.540***					
		(0.129)					
Work ethic net value			0.556***				
			(0.173)				
Entr. net value				0.461***			
				(0.141)			
Accept entr. net value					0.556***		
					(0.138)		
Abs. Discrimination net value						0.315**	
						(0.140)	
Challenging authority net value							0.707***
							(0.173)
Intercept	6.636***	6.644***	6.457***	6.705***	6.607***	7.013***	6.568***
	(1.720)	(1.717)	(1.722)	(1.792)	(1.730)	(1.744)	(1.687)
Observations	140	140	140	140	140	140	140
Adjusted R^2	0.221	0.221	0.213	0.194	0.214	0.172	0.235
Note:							*p<0.1; **p<0.05; ***p<0.01

This table presents the results of OLS regressions. Robust standard errors are in parentheses. The initial year is 1990, and the averages are calculated for the period 1990–2019.
* The net value of a variable is the difference between the fraction of folktales that encourages behaving in accordance with a norm and those that discourage it. However, when discouraging a certain behavior is assumed desirable for economic growth, the net value is calculated as "discourage minus encourage". Descriptive variables, i.e. those that ask about instances of an event such as cooperation or help, are incorporated as such.

Here: Factors based on extensive margin

*XVI: Factors calculated on the basis of their extensive value**

	Dependent variable: average Growth rate between 1990-2019						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log initial income	-0.541***	-0.530***	-0.511**	-0.537**	-0.538***	-0.587***	-0.524**
	(0.203)	(0.205)	(0.205)	(0.210)	(0.205)	(0.212)	(0.212)
Human capital index	-0.092	-0.025	-0.133	-0.150	-0.124	0.099	-0.053
	(0.172)	(0.167)	(0.175)	(0.174)	(0.178)	(0.168)	(0.172)
Investment rate	0.559***	0.575***	0.509***	0.580***	0.570***	0.536***	0.583***
	(0.185)	(0.180)	(0.196)	(0.185)	(0.183)	(0.189)	(0.186)
Cooperation extensive	0.537***						
	(0.132)						
Altruism extensive		0.499***					
		(0.128)					
Work ethic extensive			0.562***				
			(0.164)				
Entre. extensive				0.533***			
				(0.143)			
Accept entre. extensive					0.566***		
					(0.141)		
Abs. discrimination extensive						0.258**	
						(0.126)	
Challenging authority extensive							0.485***
							(0.166)
Intercept	6.558***	6.470***	6.299***	6.550***	6.537***	6.943***	6.465***
	(1.716)	(1.725)	(1.728)	(1.765)	(1.730)	(1.791)	(1.777)
Observations	140	140	140	140	140	140	140
Adjusted R^2	0.219	0.213	0.215	0.210	0.215	0.160	0.204

Note: *p<0.1; **p<0.05; ***p<0.01

This table presents the results of an OLS regression. Robust standard errors are in parentheses. The initial year is 1990, and the averages are calculated for the period 1990–2019. * The extensive value of a variable is the sum of the fraction of folktales that encourages a norm and those that discourage it. Factors based on the extensive value thus focus on whether a specific norm features in a folktale. Descriptive variables, i.e. those that ask about instances of event such as cooperation or help, are incorporated as such.