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A FRAMEWORK

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ABSTRACT

This paper proposes a new framework for studying the interplay between culture and institutions. We interpret culture as a repertoire, consisting of (cultural) attributes and allowing rich cultural responses to political changes. Combinations of attributes produce cultural configurations, which provide social meaning, coordination and political justification. Our framework has several distinctive features. First, it proposes a “systems approach” to culture: the meaning and function of attributes are determined within the whole configuration and political equilibrium. Second, it emphasizes discontinuous or “saltational” changes in culture—rather than gradual, evolutionary changes—as attributes are reconnected and acquire new meanings in response to evolving circumstances and as outcomes in ongoing “cultural struggles”. Third, our framework puts the spotlight on how fluidly different cultures can respond to conditions, depending on the nature of their attributes and constraints on their connections. Finally, it enriches the study of the co-determination of political, institutional and cultural outcomes.

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1 Introduction

Cultural theories have once again become popular in economics and political science, offered as explanations for economic, social and political differences between countries, regions, ethnic groups and families. The political scientist Samuel Huntington was at the forefront of this revival, proffering cultural differences as the primary driver of economic and political divergences and international conflict (Huntington, 1993). In the 2000 book *Culture Matters: How Values Shape Human Progress*, he argued: “South Koreans value thrift, investment, hard work, education, organization, and discipline. Ghanaians have very different values” (Huntington, 2000, p. xiii). The economic historian David Landes, in the same volume, agreed with this perspective, stating “Culture makes almost all the difference” (2000, p. 2) for economic growth and cross-country differences. Many economists and political scientists have reached similar, even if sometimes less extreme, conclusions.

Much of this literature builds on a conceptualization of culture going back to Talcott Parsons. Parsons (1951) viewed culture as a stable and coherent “normative pattern of value-orientations” that helps individuals make decisions and adapt to different circumstances (1951, p. 171). He emphasized the congruence and “logical consistency” of these value orientations as a way of coordinating social interactions (1951, p. 9). Culture thus defined lives at the level of well-delineated groups, such as nations, regions, ethnicities or religions. Partly because of its coherence, Parsons argues, culture tends to be sticky and matters for all sorts of decisions and social outcomes. This Parsonian approach has been adopted by the recent culturalist revival. In the preface of the same book, Huntington and Lawrence Harrison define culture as “the values, attitudes, beliefs and orientations, and assumptions prevalent among people in a society” (p. xv) and propose that culture is stable, coherent and persistent at the level of such broad groupings. Economists often rely on similar definitions. Guiso, Sapienza and Zingales (2006, p. 23), for example, describe culture “as those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation”. Given this approach, it was natural for the recent economics literature to view culture as a major independent variable impacting economics and politics. It was also natural to assume that culture could be measured from its various symbolic and behavioral footprints (such as religious beliefs, rituals, kin relations, family structure, and observed civic behaviors like willingness to donate blood, reciprocity, and reported trust in others).

Economists working on culture have recognized that culture is not exogenous or unchanging, and have allowed for cultural change coming from social influences (e.g., “horizontal cultural transmission”). Nevertheless, consistent with the Parsonian paradigm, they have often relied on perspectives originating in biology and evolutionary anthropology that view cultures as coherent frameworks and cultural change as an evolutionary phenomenon (e.g., Cavalli-Sforza and Feldman, 1981, Boyd and Richerson, 1988, Henrich, 2017). One important implication of this conceptual focus is that cultures are persistent, evolve slowly and do not exhibit discontinuous changes. Nunn

(2023) concludes his overview of this area by stating “change is incremental. Because of our reliance on culture and tradition, we are hesitant to change (a form of status-quo bias).” He continues “This generates historical persistence”.

1.1 Main Argument

In this paper, we build on the flourishing culture and economics literature, but also significantly depart from the Parsonian paradigm. We first explain the three building blocks of our approach, then discuss how we model culture and its interactions with institutions, politics and history, and then enumerate the distinctive implications that this approach delivers.

I) Culture as social meaning: We build on the anthropologist Clifford Geertz’s emphasis on identifying culture with “social meaning” in the context of communication, coordination and political and social justification. Following Geertz, we thus define culture as *patterns of beliefs, relationships, rituals, attitudes and obligations that furnish meaning to human interactions and provide a framework for interpreting the world, coordinating expectations and enabling or constraining behaviors*.¹ Critically, a culture does not typically determine a specific type of behavior. Rather, it provides a set of justifications and associated choices.

II) Culture as a toolkit: We emphasize the “fluidity” (changeability) of cultural notions, which often adapt and adjust to circumstances. In the terminology of Ann Swidler (1986, p. 277), culture is

a “toolkit” or repertoire from which actors select differing pieces for constructing lines of action. Both individuals and groups know how to do different kinds of things in different circumstances.

III) Culture as part of a social equilibrium: We view culture as inseparable from a broader social equilibrium and closely interacting with political and economic power. By providing justifications to various social arrangements, culture influences economic and political institutions, but is fundamentally impacted by politics as well. Deepening our understanding of the two-way interaction between culture and institutions is one of the main objectives of our framework.

¹This definition heavily borrows from Sewell (2005) and especially from Geertz’s (1973, p. 89) famous definition of culture as: “historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes towards life.” Here, symbols are defined as: “tangible formulations of notions, abstractions from experience fixed in perceptible forms, concrete embodiments of ideas, attitudes, judgments, longings or beliefs” (1973, p. 91). Relative to this definition, we drop the emphasis on symbols, which are central in many settings, but less important for our focus here and also less in line with the economics and political science literatures in this area. We additionally drop “historically transmitted”, since as we will emphasize, though historically-grounded, social meanings can change discontinuously.

Our ideas, more broadly, build on other key contributions in the modern sociology literature, including Bourdieu (1977), Giddens (1984), Swidler (1986), Rosaldo (1989), D’Andrade (1995) and Patterson (2014). For a recent survey of this literature, see Smith, Ritz and Rotolo (2020).

While there are several ways in which these building blocks can be combined and modeled, we choose a specific approach, which we believe is both useful for interpreting important historical examples and fruitful for future empirical and theoretical research. Here we describe the main elements of our modeling approach.

We distinguish a *cultural configuration*, which represents prevailing cultural attitudes, from a *culture set*, which contains the tools available to individuals and communities in constructing cultural configurations (reminiscent to Swidler’s toolkit). Formally, a culture set consists of (cultural) *attributes* and a *collection of feasible connections* between these attributes. Cultural configurations arise from the connections formed between attributes, and as these connections change, the meaning, coordination and justifications implied by a cultural configuration are transformed as well. This modeling strategy enables us to simultaneously capture both the fact that certain aspects of cultures are *slowly-changing* and also that certain cultural attitudes can *respond rapidly* to evolving circumstances. In particular, a culture set is slowly changing. For instance, there is a lot of continuity in English and Chinese culture sets over hundreds of years, as we discuss later. Cultural configurations, on the other hand, can evolve much more rapidly, as illustrated by the transformation of US attitudes towards gay marriage within a decade (e.g., Daniels, 2019).

We take the two elements of culture sets—the attributes and the collection of feasible connections—as primitives, but we also explore how the nature of attributes influences feasible connections. First, an attribute can be *abstract* or *specific*, and this determines which other attributes it can be linked to. Abstract attributes have more feasible connections, and in our framework this implies that they can play more varied roles in different configurations. All else equal, when there are more abstract attributes in a culture set, there will be more feasible cultural configurations. An attractive aspect of this modeling is that it captures the possibility that a given attribute—and especially an abstract attribute—can have a very different meaning depending on what other attributes it is linked to. This possibility is illustrated by the notion of *Dao* (“*The Way*”) in Confucian culture, which defines virtuous behavior, but its meaning is quite context dependent. Our framework interprets this attribute as abstract and implies that it changes its meaning as its connections to other attributes are modified.

Second, a collection (subset) of attributes could be *entangled*—as opposed to being *free-standing*. The meanings of an entangled set of attributes are closely tied, and we suppose that these attributes cannot be separated in cultural configurations. Specifically, if one of an entangled set of attributes is linked to another attribute, then all entangled attributes have to be linked to this other attribute as well. For instance, in Indian culture a whole set of attributes are entangled because they are defined in relation to the social status of Dalits and other lower castes, and cannot be separated from caste relations. These include the notion of (spiritual) pollution, religious duties and rituals, positions in the caste hierarchy and access to different occupations. This entanglement has narrowed the

set of feasible configurations in the traditional Indian culture. In contrast, in English (and more generally Western) culture, occupational choices were not entangled with those related to religion and caste, allowing a greater degree of changeability.

Although our approach builds on the recent economics and sociology literatures, it has a number of distinct implications, reflecting the major differences in its assumptions and focus from these earlier literatures. We emphasize four of these here.

1. *Systems approach*: Our framework calls for a “systems approach” to culture, whereby cultures can neither be measured nor understood by looking at single attributes. Social meaning and justification are achieved by the combination of different attributes, and this combination determines the exact interpretation of the attributes. Let us illustrate this point using once more the notion of *The Way* in Confucianism. Because this attribute has been a mainstay of Confucian philosophy and is often interpreted as the foundation of hierarchy in the family and politics, one could interpret Chinese culture as inherently autocratic (see Huntington, 1991, or Yew, 2000). However, the enduring importance of this attribute does not imply that the resulting cultural configuration is unchanging. Indeed, even though *The Way* is still central to cultural attitudes in Taiwan, the country has built a vibrant democracy consistent with Confucian cultural attitudes in other spheres of life (see Section 4). We will capture this interpretation by allowing this (abstract) attribute to have very different meanings depending on what other attributes it is linked to in the mainland Chinese and Taiwanese configurations. This example thus highlights how the systems approach may be necessary and valuable even in cases in which only a single attribute alters its links and meaning: as the meaning of *The Way* changes, this can also alter the interpretation of other social relations. This example additionally illustrates that our systems approach provides a more nuanced understanding of cultural persistence: the durability of culture sets does not imply persistence of cultural configurations. Nor can we measure cultural persistence by looking at a handful of attributes. Sometimes, the whole cannot be understood from its constituent parts.

2. *Saltational cultural change*: As discussed above, much work in cultural economics has emphasized the possibility of social influences and horizontal transmission of culture, but has nonetheless remained within the broadly evolutionary framework, as emphasized by Nunn’s summary that “[cultural] change is incremental”. This literature has also attached greater importance to cultural change during formative or impressionable years of an individual’s life, again reiterating the generational timescale at which change often takes place. In contrast, our approach allows for discontinuous jumps in cultural configurations because the social meaning and justifications implied by a configuration can change rapidly as attributes are recombined in new ways. Here, by discontinuous jumps, or saltational change, we mean major cultural change that takes place rapidly, within the course of a few years—in particular, much faster than the generational timescale. Social meaning and justification can vary in response to evolving circumstances and in our approach, they

do so by combining existing attributes in new ways. Such a possibility was partially anticipated by the sociologist DiMaggio (1997, p. 265) when he wrote:

once we acknowledge that people behave as if they use culture strategically, it follows that the cultures into which people are socialized leave much opportunity for choice and variation.

But, the implications are more far-reaching than previously recognized.

To highlight these consequences, let us contrast our approach with evolutionary models commonly used in economics, for example, as in the pioneering work by Bisin and Verdier (2000, 2001, 2024). As in models of evolutionary anthropology (e.g., Cavalli-Sforza and Feldman, 1981, Boyd and Richerson, 1988.), these works allow only gradual change in individual and group values, often taking place at the generational timescale (see Roland, 2004, Nunn, 2023). Specifically, because cultural dynamics are a solution to backward-looking difference or differential equations in these models, there is no possibility of discontinuous change, even when there are large shocks.² This remains true even when the prevalence of some cultural characteristics responds to future rewards. This contrasts with our approach, which allows for discontinuous jumps as different cultural configurations emerge in new social equilibria.³ We argue that the dominant approaches in cultural economics, building on Parsonian and evolutionary foundations, have inadvertently left out these important discontinuous elements.

Our reading of the historical evidence is consistent with the importance of discontinuous changes. For example, English culture in the 16th and 17th centuries had a number of distinctive characteristics that went back to Anglo-Saxon times and were overlaid with the practices and hierarchies that the Normans brought after their conquest of the isles in 1066. Interpreted through the lenses of our approach, the English culture set was highly stable. However, in the course of the political

²For instance, if some variable x is determined by a (backward-looking) differential equation of the form $\dot{x} = f(x, z)$ with an initial value $x_0 = \bar{x}$ and z is an outside/autonomous variable, then even a large change in z will not lead to a discontinuous change in x (though of course x 's time derivative, \dot{x} , will change discontinuously). Cultural change in evolutionary anthropology models and related economic frameworks is defined by a backward-looking differential equation even when there is horizontal transmission, since such transmission takes the form of individuals being influenced by a predetermined distribution of traits or values within a (sub)population.

³Our approach is distinct from but shares several of the features emphasized in the notion of *punctuated equilibrium*, proposed by Eldredge and Gould (1972). In punctuated equilibria, as in our conceptual framework, long periods of stability (stasis) are followed by rapid change (e.g., Gould, 2002). However, as emphasized by Dawkins (1986), dynamics in punctuated equilibria are still Darwinian in that they do not happen discontinuously or within a single generation; rather, they follow “descent with modification” (with mutations transmitted across generations). The type of discontinuity emphasized in our approach is thus more similar to theories sometimes referred to as *saltationalism*, for example, associated with the early twentieth-century geneticist Richard Goldschmidt (e.g., Goldschmidt, 1940). Saltational change—truly discontinuous change—is implausible in the case of biological evolution, but feasible, and in fact we would argue quite likely, when it comes to culture. This becomes particularly so once we recognize, following Geertz, that culture is about social meaning and justification.

In his seminal economic history of technology, Mokyr (1990) also emphasizes the possibility of punctuated equilibrium in social dynamics, but he does not extend this to consider discontinuous changes, as we do here.

transformation starting in the middle of the 17th century, a new cultural configuration, which we call “*Popular Sovereignty*”, emerged swiftly. This cultural configuration, whose main ideas were articulated in the writings of the philosopher John Locke, created a sharp break from the prevailing configuration, favored and advocated by Stuart monarchs, such as James II. The prevailing configuration, which can be called the “*Divine Right of Kings*”, had enshrined a patriarchal hierarchy in which the king is viewed as the divinely-anointed sovereign with the right and obligation to rule over his subjects. As economic change and especially violent political upheavals began to disrupt English institutions, *Popular Sovereignty*, based on many of the same attributes but formed by different connections and interpretations, took hold rapidly in parts of the population. The change was truly saltational, not just because of its speed, but also because of the breadth of its social implications.

This case highlights another distinction between our approach and those based on evolutionary anthropology. Because in our approach cultural configurations are about political justifications, change happens partly as a result of *cultural struggles*, as different groups strive to convince the population of their own interpretation and justifications. This is what we observe in English history, with different groups appealing to the same underlying notions from the Bible and age-old English traditions, but using these for diametrically opposed interpretations and for justifying distinct political institutions.

Importantly, we also show that when discontinuous change takes place in a particular dimension, for example in the legitimization of different political institutions, this opens up possibilities for more pervasive modifications in cultural attitudes in further dimensions, such as in religion and other social affairs, as witnessed in the English case.

3. *Fluidity of culture*: Our approach fundamentally departs from the emphasis of the Parsonian paradigm on coherent and stable cultures at the national, ethnic or religious level. It was this type of reasoning that Huntington engaged in, for example, when he concluded that South Koreans succeeded economically because of their national cultural values. Although we argue that all cultures are to some extent fluid, we do not view cultures (or culture sets) as blank slates: the set of attributes available and the constraints on their connections determine how fluid a culture is, and this can have important effects on the nature and evolution of cultural configurations. We leverage the degree to which a culture set’s attributes are abstract and free-standing to gain an understanding of how fluid the resulting culture is. Some cultures, such as the Indian one based on the caste system, are less fluid than others, because they are made up of more specific and entangled attributes (mostly due to the fact that attributes have to remain consistent with caste hierarchy). As a result, we conclude that English and Confucian cultures are relatively fluid, while the Indian culture is generally less fluid and limits the emergence of diverse cultural

configurations.⁴ Importantly, however, fluid cultures are not necessarily “better” cultures. For one, less fluid cultures can sometimes provide greater coordination and mobilization. For another, fluid cultural configurations can adapt to changing circumstances, while still maintaining certain inefficient economic or social arrangements.

4. Culture and institutions: Our emphasis on the fluidity of culture and the co-determination of cultural configurations along with political and institutional outcomes amplifies a point that is already present in the recent economics literature on culture. Institutions refer to economic and political arrangements that shape the distribution of political power, the constraints on the exercise of political power, the distribution of economic resources, and the rules that govern economic and political transactions (see next section for more details). Because in our framework cultural configurations provide justification and legitimization to different economic, social and political arrangements, they are intertwined with institutions. This emphasis on the joint determination of cultural configurations and institutions contrasts with the most rigid Parsonian approach, which tends to suggest that culture is more fundamental than institutions—or as Huntington (2000) emphasizes, quoting from Daniel Etounga-Manguelle, “Culture is the mother; institutions are the children” (p. xxviii). In our approach, as in some recent contributions (e.g., Tabellini, 2008, Bisin and Verdier, 2024), culture and institutions are more like siblings, each affecting the other. However, differently from these recent contributions that build on evolutionary approaches, in our theory this interplay is about how cultural configurations can support and justify different institutional arrangements and takes place via cultural struggles and possibly discontinuously.

1.2 A Brief Overview of the Literature

The literature on cultural economics is vast and growing. We have already discussed some of the key works on which we build and have clarified how our three key building blocks and the new implications that distinguish our framework.

In addition, most closely related to our approach are a few papers that consider the possibility of rapid cultural change. Our ideas are closest to Acemoglu and Jackson (2015) who model norms in a game-theoretic setting and emphasize the possibility of discontinuous jumps following periods of stasis or long persistence.⁵ Fernández (2011) models “culture as learning”, which implies that

⁴As we stress repeatedly, all cultures are fluid to some degree and this also means that there will be different cultural interpretations and practices within a society at a given point in time. We therefore use terms like “Confucian” and “Indian” culture as shorthands while recognizing that there is significant heterogeneity within these cultures.

⁵This paper is in turn situated in a broader literature conceptualizing norms in the context of either evolutionary game theory models or as Bayesian equilibria of various social interactions. See Schelling (1978), Axelrod (1984), Belloc and Bowles (2013) and Young’s (2015) recent survey on the former approach, and Acemoglu and Jackson (2017), Benabou and Tirole (2003, 2011), Bursztyn, Egorov and Fiorin (2020) and Benabou, Ticchi and Vindigni (2021) on the latter. See also Algan and Cahuc’s (2010) study of the relationship between inherited trust and economic growth and Besley and Persson’s (2019) and Besley’s (2020) framework linking culture and trust to political and economic development.

at times cultures can change rapidly.

Several works study the two-way causality between culture and institutions. Perhaps the most celebrated contribution to the literature on culture and politics is Putnam (1993), who contrasts political cultures, social capital and pro-social attitudes in the north and south of Italy. Putnam (1993, 2000) is in turn building on Banfield’s seminal (1958) book on amoral familism in the south of Italy as a cause of economic and political underdevelopment. Recent important contributions along these lines include Ichino and Maggi’s (2000) work on misbehavior by workers from different backgrounds working in the same firm in Italy and Tabellini’s (2008) model of pro-social cultural values and their interactions with institutions. Butler, Giuliano and Guiso (2016) enrich this literature by pointing out that trust can have a non-monotonic effect on economic outcomes.

Other important contributions on culture-institutions interactions include Alesina and Giuliano (2015), Besley and Persson (2019), Bisin and Verdier (2024), Bisin, Rubin, Seror and Verdier (2021), Doepke and Zilibotti (2008, 2019), Gorodnichenko and Roland (2021), Greif (2006), Mokyr (2016), Spolaore and Wacziarg (2013), Cheung and Wu (2018) and Giuliano and Nunn (2021). Most of the works in economics in this area adopt the evolutionary approach of Bisin and Verdier (2000, 2001) and Boyd and Richerson (1988), and thus disallow discontinuous changes in culture. Nor do they share our systems approach and emphasis on cultural struggles and the role of cultural configurations on political legitimization.

Issues of political legitimization also arise in the literature on religion and institutions. Botticini and Eckstein (2014) explain key aspects of Judaism by pointing to the demand for education, motivated by the communal pressures for reading the Torah, that emerged in the uncertain environment following the destruction of the Second Temple during the Roman Republic. Becker and Woessman (2009), Cantoni (2015) and Cantoni, Dittmar and Yuchtman (2018), among others, study the interplay between Protestantism, the printing press and education, emphasizing how the Protestant doctrine of reading the Bible to connect personally to God raised the demand for education, and via this channel, affected economic, social and political attitudes. Kuran (2011), Platteau (2017) and Rubin (2017) are even more closely related, since they stress the role of certain attributes of Islam that are, in our terminology, entangled in causing economic and political problems (specifically, the lack of non-religious property rights and inheritance in the first, and aspects of religion-state relations in the latter two studies).

A related subliteration, anticipated by Guiso, Sapienza and Zingales’s (2009) use of genetic similarity as an instrument for culture, links national, ethnic and religious cultures to genetic backgrounds. See, for example, Galor and Moav (2002), Ashraf and Galor (2013), Spolaore and Wacziarg (2009), Gorodnichenko and Roland (2017, 2021), as well as outside economics, Nicholas Wade’s much-disputed (2014) book. These contributions are distinguished from our work for the same reasons—they view culture as a slowly-changing, coherent set of values at the national, ethnic

or religious level.

The argument that culture must be studied in a more holistic way as a system of interacting “traits” (similar to our attributes) is also present in Buskell, Enquist and Jansson (2019) and Jansson, Aguilar, Acerbi and Enquist (2021). But they focus on simulation methods to show how certain dynamical systems can generate complex dynamics for the distribution of cultural traits in a population. Our emphasis on discontinuous changes, the reinterpretation of the relationship between persistence of attributes and persistence of cultural configurations, the distinction between more and less fluid cultures, and our new insights about culture-institutions interplay are not present in these papers.

The empirical literature in this area is growing rapidly as well. Many of the influential papers establish the persistence of some cultural attributes. For example, Fernández and Fogli (2009) show that second-generation immigrant women in the United States have fertility and labor force participation rates correlated with last generation’s average rates in their country of origin, while Carroll, Rhee and Rhee (1994) use the same empirical strategy to look at differences in saving rates. Alesina, Giuliano and Nunn (2013) document the persistence of gender norms depending on the extent to which the plow was adopted historically in agriculture, while Luttmmer and Singhal (2011) study the relationship between culture and preferences for redistribution, Giuliano (2007) looks at the likelihood of children cohabiting with their parents, and Guiso, Sapienza and Zingales (2009) link differences in historical trust between European nations to their bilateral trade. Our framework suggests a richer interpretation of these results, since our systems approach implies that persistence of individual attributes is consistent with significant change in cultural configurations—for example, some persistence in fertility behavior among immigrants can go hand-in-hand with changing attitudes in other dimensions, such as those concerning democracy, freedom and language. Relatedly, Giavazzi, Petkov and Schiantarelli (2019) and Jaschke, Sardoschau and Tabellini (2022) document that, in these settings, there is also substantial cultural change. For example, second-generation immigrant women from different backgrounds have fertility and labor force participation rates that converge toward those of natives in the United States and Germany.

One final comment is that, despite the growing size and scope of this literature, there are some important commonalities that distinguish it from the approach we advocate here. Both the explicitly Parsonian works (such as those of Banfield and Huntington) and the body of research building on evolutionary anthropology concentrate on specific aspects of culture that make them better or worse for economic efficiency (e.g., generalized trust vs. amoral familism, more or less pro-sociality) or for equity (e.g., gender norms), and emphasize the stability or the gradual change of these aspects. Our focus on culture as providing social meaning and justification, and the resulting need for a systems approach and possibility for discontinuous changes, are not shared by this literature. Even in models that allow for cultural change (e.g., in Giuliano and Nunn, 2021,

where people can choose a culture other than the inherited tradition), there is no analogue of our systems approach or the possibility of cultural transformations taking place at a rate faster than the generational timescale. We additionally stress that the central role of political factors and cultural struggles in the making of cultural configurations in our framework increases the room for “non-adaptive” changes—whereby configurations inimical to the well-being of large fractions of society emerge and persist—relative to most evolutionary approaches.

1.3 Overview of the Rest the Paper

The next section explains our conceptual approach in greater detail, introduces our key concepts, such as attributes and whether they are abstract or specific, and entangled or free-standing. We explain how the connections of an attribute to others can alter its meaning, and how this type of cultural change can happen rapidly, and even discontinuously. This section also provides the broad outlines of how politics, institutions and culture co-evolve and why this co-evolution depends on how fluid or hardwired a culture is. We additionally discuss how the way in which culture persists over time and matters for economic and political outcomes is more nuanced in our framework than in the more traditional approaches. The rest of the paper applies this framework in a number of cases, with the explicit aim of clarifying its constituent parts and how they work.

Section 3 turns to the case of 17th-century England, explaining in detail what the key attributes of English culture were, and how they were initially combined together to justify absolutist political institutions. We also explain that these attributes then became the basis of a different cultural configuration that advanced the view that sovereignty rests with the people and that kings can only rule if they are delegated that power by, and remain accountable to, the people. We further document the cultural struggles that were involved in these changes and how they were linked to political factors.

Section 4 focuses on Confucian culture, which provides a telling illustration of our systems approach. We emphasize how the same attributes can be interpreted in different ways, and how this type of reinterpretation of Confucian attributes underpinned the rapid emergence of a democratic culture in Taiwan.⁶

Section 5 draws out some of the implications of our approach. We start with a discussion of the costs of hardwired cultures, using the Indian caste system as an example. We then highlight the potential benefits of hardwired cultures using the emergence of “Big God” religions, such as Christianity and Islam. These religions produced many layers of specificity, as compared to the polytheistic cultures that prevailed before, but also generated cultural configurations more conducive to state-building, coordination and territorial expansion. We then explain how some of the benefits of hardwired cultures can later turn into barriers to economic and political development.

⁶Hong Kong is similar in many respects but the 200 years of European colonialism makes it a more complicated case.

Section 6 concludes with several ideas and areas for future research. The Appendix provides a simple mathematical formalization for our notions of cultural configurations produced from constituent attributes and how this approach can represent more fluid and less fluid cultures.

2 Culture, Institutions and Social Equilibria: A Framework

Our purpose in this section is to provide a conceptual framework that clarifies how different cultures may affect, facilitate and legitimize certain types of behavior and how they may themselves be transformed rapidly by political forces, institutions and new ideas. We first introduce the notions of cultural attributes and the set of feasible connections, and explain how cultural attributes come together to form cultural configurations and how modifications in these connections lead to potentially discontinuous cultural change. We then distinguish cultures in terms of their fluidity, and explain how political and other factors influence the equilibrium cultural configuration and how this depends on the degree of fluidity. We further outline how features of attributes, such as whether they are abstract or specific and the extent of entanglement between collections of attributes, influence the fluidity of a culture. We finally discuss the role of cultural struggles in the choice of cultural configuration. Throughout, our objective is to introduce the main ideas, and we adopt an informal approach. We provide a modicum of formalism in the Appendix, clarifying some of the key terms mathematically.

2.1 Elements of a Systems Approach: Culture Sets, Attributes and Possibilities

We model cultures by means of cultural configurations and culture sets. A *cultural configuration* summarizes the prevailing social meaning, political and social justifications, current social norms, and the set of condoned and discouraged behaviors. A *culture set* comprises (cultural) attributes and the feasible connections between them. We take culture sets as given, which captures the fact that they are highly persistent. Throughout, we use the terms culture and culture set interchangeably.⁷

Attributes could be such things as the type of social hierarchy (patriarchy, gerontocracy, meritocracy); the identity of “in-groups”; the meaning, definition and importance of virtue; the structure of social responsibilities; the role of honor and violence in conflict resolution; respect for ancient customs and traditions; the extent of segregation and mixing between different types of people; family structure; certain rituals; religious precepts; regulation of sexual behavior; the role of higher ideals; etc. For example, some cultures include attributes that enshrine a social hierarchy based on age

⁷This is a slight abuse of terminology. In principle, a culture could evolve over time by adding new attributes to its culture set, dropping some existing ones, or by modifying the set of feasible connections. Thus, a culture could be thought of as a collection of “admissible” culture sets (meaning the collection of culture sets that can still be consistent with the culture in question). We do not explore changes in culture sets in order to keep the analysis manageable and focus on the more novel elements of our framework.

and specify various responsibilities of younger and older individuals. Others may include attributes that correspond to a caste-based social hierarchy. Yet other cultures may include attributes that capture notions related to social hierarchy but leave it unspecified whether this hierarchy is rooted in age, income, gender, lineage, caste or religion.

The set of *feasible connections* summarizes what connections (or links or combinations) are possible between different attributes. We also use (feasible) connections to model how the meaning of an attribute depends on its links to other attributes. Take, for example, an attribute that is related to social hierarchy but does not specify what the source of this hierarchy is. Whether this attribute is linked to age or income might then determine whether social hierarchy is based on age or income differences. Or as another illustration, consider Swidler’s discussion where she states: “The middle-class Americans I interviewed draw from a common-pool of cultural resources. What differentiates them is how they make use of the culture they have available” (2003, p. 5). In our framework, this pattern can arise because different individuals use the same attributes but with different connections between them, and thus generate different meanings and interpretations.

A *cultural configuration* is a collection of attributes linked together (according to the set of feasible connections), and can thus be represented as a graph. Cultural configurations provide justifications for different arrangements and institutions. For instance, a cultural configuration that emphasizes social hierarchy and maintains that low-status individuals have to obey high-status ones will tend to support and justify more autocratic political institutions. In a society at a point in time there may be multiple, competing configurations, as we discuss in Section 3.

Figure 1 provides an example with four attributes. In light gray, we show all possible connections between these four attributes—which are all the possible edges in a graph with four nodes. Crucially, however, the set of feasible connections of a culture set need not include all of these edges. Throughout, we take the set of feasible connections as given, but we also explain how feasible connections depend on characteristics of (collections of) attributes. In turn, a cultural configuration will not include all of the feasible connections, but a subset thereof, and this subset could consist of a single connected component or several disconnected components.⁸ As an illustration, using the same four attributes, we can think of a culture set allowing only the two cultural configurations shown in red and blue in the figure.

One reason why some possible connections are infeasible may be that attributes have been added over time by blending different cultural traditions, but have not developed the full degree of coherence with other attributes. For instance, the post-7th century Arabian Peninsula combined pre-Islamic tribal customs and attributes with the basic tenets of Islam. Yet, the pre-Islamic emphasis on kin-based order could not be easily combined with Mohammed’s efforts to supplant

⁸Attributes that are disconnected from the other attributes in the culture set may still play a role in other domains than the one we are focusing on. For example, some attributes may be important in defining gender relations, while having little or no impact on the political equilibrium.

kin relations. This example thus illustrates both why not all connections between attributes may be feasible and how the nature of a culture also depends on the collection of feasible connections.

Two societies may have different cultural configurations because they have different attributes (compare the Islamic culture to the Confucian one) or because they have the same attributes but they have combined them differently (compare mainland China and Taiwan today, as we explain in greater detail later).

We next illustrate how different configurations lead to differing meanings of an attribute and thus distinct political and social justifications using Figure 2, where we consider a situation with three attributes, *hierarchy*, *obedience* and *virtue*. In Panel (a), we depict a configuration where all three attributes are linked. A natural interpretation is that in this configuration, virtuous behavior is related to obedience to existing hierarchy, and can therefore be viewed as a justification for social arrangements where rulers have to be obeyed at all times. Panel (b) shows a different configuration where the link between *virtue* and *hierarchy* is no longer present. Consistent with our systems approach, this relatively minor modification can lead to very different implications and even transform the meaning of attributes. Without the link between *virtue* and *hierarchy*, the cultural configuration could now maintain that the existing hierarchy is no longer virtuous by default, and while virtuous behavior should be obeyed, hierarchy and rulers need not be obeyed if they are not virtuous. This change then introduces the possibility of more democratic forms of governance, as we will emphasize in the context of our discussion of Confucian culture in Section 4.⁹

2.2 Cultural Configurations and Saltational Change

When there is a change from one cultural configuration to another, this can cause major cultural change, especially if the old and the new cultural configuration justify and support very different social arrangements. Importantly, in our framework, this typically happens as a result of changes in the meaning of given attributes as connections are changed. For example, an attribute related to hierarchy does not necessarily specify the identity of high or low status individuals. Hence, modifying the connections of this attribute could change the definition of hierarchy, say switching from a type of gerontocracy (the old have high status) to a type of plutocracy (the wealthy have high status). Building on our discussion of Figure 2, and anticipating our account of Confucianism, we can see that if a culture emphasizes the importance of individuals voluntarily submitting their will to a virtuous ruler, then feasible cultural configurations may legitimize either an absolutist

⁹This example can also be used to motivate an extension of our approach, where the meaning of an attribute may be affected by the connections between other attributes. In Figure 2 the connections of the attribute *obedience* do not change between the two panels. Nevertheless, there may be circumstances in which the interpretation of *obedience* is altered as well, because the meaning of *virtue* and *hierarchy* change as the link between them is removed. To simplify our framework and exposition, we do not pursue this generalization here and we assume that the meaning of an attribute depends only on its direct links.

monarchy (where the ruler is presumed to be virtuous by default) or more democratic political institutions (where rulers are appointed according to their presumed skills or virtue, and can be deposed if they do not perform well). As another example, a culture set may contain elements that emphasize marriages based on love or traditional notions of compatibility, and different cultural configurations can pick one or the other type of attitude.

Critically, a shift from one cultural configuration to another can be *discontinuous* or *saltational*, meaning that the implications and justifications of the new cultural configuration are very sharply different from those of the former. Such discontinuous change can result either because certain relevant circumstances have changed (new economic opportunities, demographic changes, etc.) or because the balance of political power in society shifts (specifically, groups that are disadvantaged by the prevailing cultural configuration may gain strength). It can also be the outcome of a process of cultural struggles, as we explain below.

2.3 Fluid Cultures

We say that a culture (or a culture set) is *more fluid* than another, if the set of cultural configurations it generates is a superset of those supported by the other. We also use *more hardwired* interchangeably with “less fluid”. One implication is that if a culture is more fluid, it allows a richer set of cultural configurations. Figure 1 illustrates our notion of fluidity: a culture set that only permits the cultural configuration shown in red is less fluid than another culture set that allows both the red and the blue ones. Most cultures are non-comparable—of two cultures being considered, neither may be more fluid than another—because each has different attributes.¹⁰ Nevertheless, the notion of fluidity is useful, because it enables us to think *counterfactually*, asking questions such as: What is the role of feasible cultural configurations in explaining economic and political divergences? Or how would various economic and political outcomes have differed if a culture had been more fluid? It also provides us with a language to talk about the extent to which certain types of changes are feasible in one culture, but not in another.

A hardwired culture that, say, categorically bans any type of financial transactions will rule out financial markets. In contrast, in a fluid culture, there may be adaptations to take advantage of financial transactions. For example, even though usury was regarded as exploitative in Christianity, the broader fluidity of the culture of which Christianity was a part ultimately allowed a rich array

¹⁰In other words, being more fluid or more hardwired is a partial order. In particular, two cultures cannot be compared in terms of fluidity based on the number of feasible cultural configurations. This is plausible, since a culture set that allows several cultural configurations, but with each corresponding to only minor variations on the others, should not be thought of as more fluid than one that allows only a few cultural configurations, each of which offers very different meanings. In the Appendix, we describe this partial order in greater detail and emphasize that for two cultures to be comparable, they need to have the same set of attributes (or one of them needs to have a superset of the attributes of the other). This means that in comparing cultures in terms of fluidity, it may be useful to have a broad definition of attributes, for example, thinking of “religion” as an attribute, rather than separating Protestantism and Catholicism as noncomparable attributes of two different cultures.

of financial innovations and the development of financial markets.

Similar conclusions apply when we consider political arrangements. A hardwired culture might specify that authority is always given by God to a chosen leader. This may preclude political organizations that are not autocratic and only allow a monarchy or a theocracy as permissible political regimes. But many cultures, such as Confucianism, are much more fluid than that, and permit both highly autocratic regimes and more democratic alternatives.

Because there will be more feasible cultural configurations when the underlying culture set is more fluid, our discussion so far implies that discontinuous cultural change—a shift from a cultural configuration to another one with very different justifications—is also more likely with more fluid cultures. In fact, the two examples of discontinuous change we provide in the next two sections come from the English and Chinese cases. Both of these cases also illustrate how discontinuous change is made possible by a culture set containing elements that can support sharply opposed interpretations (e.g., top-down hierarchy vs. bottom-up participation or accountability).

For most of the discussion in the current paper, we focus on a cultural configuration prevailing among the members of a well-defined group. This is a simplification: a fluid culture that allows different cultural configurations over time also generates different meanings and interpretations among members of the group *at a given point in time* and in a given location. Hence, fluid cultures will generate some degree of within-group cultural discordance (consistent with Swidler’s, 2003, emphasis on cultural incoherence). Though this is not our focus here, it does have an important implication we return to later: achieving coordination among group members may be more difficult in the case of fluid cultures, because different subgroups may have different interpretations and expectations. This is one of the reasons why, as we discuss in Section 5, hardwired cultures may achieve successful coordination in the short run, but then reduce adaptability to evolving circumstances.

2.4 Culture, Politics and Institutions

How does a society end up in a cultural configuration? The answer to this question constitutes a central part of our conceptual framework. We argue that the prevailing cultural configuration is influenced not just by the contents of a culture set, but also by history (past cultural configurations), institutions (in particular, institutional arrangements that shape and regulate economic and political power), shocks (changes in economic and social circumstances), and “politics” (representing changes in the balance of political power resulting from shifts in wealth, military capabilities or coalitions, or from new ideas).¹¹ We refer to the joint determination of cultural configurations,

¹¹We follow the definition of “institutions” provided in Acemoglu, Johnson and Robinson (2005a), thus combining political and economic institutions. Political institutions include both formal arrangements such as the constitution, the electoral system, political regime and laws relevant for political participation, assembly, and informal elements, such as the extent to which the media keeps politicians accountable and general respect for civil rights and freedom of speech. Economic institutions include commercial laws, property rights, contracting institutions, and such. By

institutions and economic outcomes as a *social equilibrium*.

We now explain several central aspect of our framework using Figures 3 and 4. First, both Figures 3 and 4 represent the fact that the culture set, shown at the top, matters. As in the rest of our discussion in this paper, we take this culture set to be given and unchanging.

Second, we have two other blocks in these two figures: institutions and politics/shocks.¹²

Third, the two figures together draw an important distinction. In Figure 3, as an expositional device, we consider the hypothetical *extreme hardwired culture*, which only allows a single cultural configuration. Because there is a unique feasible cultural configuration, the realized cultural configuration is unchanging (and hence not indexed by t). This case thus captures ideas expressed in statements such as “culture is the mother; institutions are the children”. As a result, politics may impact institutions (for example, the identity of the ruling group or the electoral system can change). Yet, crucially, institutions and politics themselves do not impact the cultural configuration.

Real-world cultures never take this extreme hardwired form. Rather, they allow for some amount of fluidity, and this is the case we depict in Figure 4. In this case, there are multitudes of cultural configurations that can be produced from the same culture set, and these can support distinct institutions. This opens the way to the central role of politics and the two-way interactions between cultural configurations and institutions. Politics, in particular, directly affects institutions and the evolution of cultural configurations, and institutions also influence cultural configurations (as highlighted by the red arrows in the figure). Politics can transform culture from the top (for example during the rule of the Nazi Party in Germany), or from the bottom (for example the way that the US Civil Rights movement led to changes in attitudes towards Black Americans). Culture can also change autonomously as when cultural entrepreneurs propose new ideas and new connections between attributes.

As we discuss later in the context of 17th-century England, John Locke developed a political philosophy closely related to a new cultural configuration that provided a powerful argument for the illegitimacy of the government of James II. This contributed to both cultural and political transformation during the Glorious Revolution. Though his focus was on politics, key elements of Locke’s philosophy, particularly his emphasis on the need for toleration and his views about the origins of private property rights, spread into many other parts of the English culture. Figure 4 showcases the two-way interactions between cultural configurations and institutions: existing political legitimizations and acceptable ideas influence which types of institutions are feasible, and

“politics” we refer to changes in the balance of political or military power, for example, how merchants and commercial interests became stronger in 17th-century England as a result of profits from the Atlantic trade (Acemoglu, Johnson and Robinson, 2005b). As such, institutions represent *de jure* aspects of political power, while politics here refers to *de facto* aspects.

¹²We put politics and other shocks (such as demographic factors or major changes in economic conditions) together to keep the figures more compact.

existing institutions structure how political power is exercised and shifts between different groups and individuals, which then affects the evolution of cultural configurations. All of this can happen discontinuously, as the recombination of given attributes alters their meanings and this paves the way to the emergence of a new cultural configuration, supporting different political arrangements.

Figure 4 also illustrates the potential drivers of rapid or even discontinuous cultural change in our framework. Since the cultural configuration at $t + 1$ depends on politics or shocks at time t , major shifts in political or other factors can induce a switch to a different cultural configuration, if such an option is available among the feasible set of configurations.

Finally, the black arrow emanating from the culture set and the light green arrow from today’s to tomorrow’s cultural configuration reiterate the presence of cultural persistence. New cultural configurations and even cultural struggles will have to use existing cultural attributes, and they will be further influenced by today’s cultural configuration, for example, because the current cultural configuration determines which new arguments may be acceptable to the population.

In sum, we argue that only the most extreme hardwired cultures look like what is depicted in Figure 3. The real world, instead, resembles Figure 4. Our discussion of the English and Chinese cases in the next two sections, which illustrates how these societies have in the past transitioned from one cultural configuration to another in response to evolving political and other conditions, emphasizes this point. This potential fluidity of culture, as cultural attributes are recombined, is the leitmotif of our theory.

2.5 Abstract vs Specific Attributes

Why are some cultures more fluid than others? Our conceptual framework emphasizes two factors, one related to the nature of the attributes, and the other to the collection of feasible connections. For the first, we distinguish between “abstract” and “specific” attributes. By *abstract*, we refer to an attribute that has multiple meanings. We capture this notion in our graphical representation by allowing an abstract attribute as having more feasible links. Confucian notions of virtue and the English interpretations of Christian teachings are examples of abstract attributes that can mean different things in different contexts. So, English Christianity gained a distinct meaning, with major implications for political institutions, when combined with notions of hierarchy than when linked with notions of the ancient constitution emphasizing political participation by regular people.¹³

In contrast, a *specific* attribute has fewer feasible links, because it can be combined with fewer

¹³Importantly, however, an abstract attribute need not have more actual links in a given cultural configuration. It may end up only with a few of the feasible links. What matters for the notion of being abstract or specific is the set of feasible links.

Note also that in reality, there are degrees of abstractness. For example, an attribute can be more abstract than another if it allows more connections. For this reason, we sometimes refer to “highly abstract” attributes to emphasize those that have many possible links. But whenever this causes no confusion, we also simplify the discussion by contrasting abstract and specific attributes.

other attributes. As an example, consider the idea of “pollution” generated by Dalits and other lower castes in the Indian caste system. In our conceptualization, this is a highly specific attribute related to caste hierarchy, as it has a definite meaning, and cannot be easily combined with attributes that are against this hierarchy.

These ideas are illustrated in Figure 5. In Panel (a), the top-left attribute is abstract and has feasible connections to three other attributes (these are shown in different colors to emphasize that actual connections could be any subset of them). Panel (b) draws the alternative case where this attribute is specific and can only be connected to one other attribute (and in this comparison we are holding all other feasible connections fixed).

2.6 Entangled vs Free-Standing Attributes

While being abstract or specific is a property of an attribute, entanglement is a property of a collection of attributes. Formally, if a collection of attributes is *entangled*, then all of the attributes in this collection must have exactly the same connections to other attributes. Intuitively, this captures the idea that the function and meaning of all of the attributes in the collection are linked and cannot be separated. In contrast, a *free-standing* collection consists of attributes that have meanings and functions that are independent and can thus be connected separately from each other.

These notions are illustrated in Figure 6, where there are again four attributes and the top two are entangled as indicated by the red bubble connecting them. Panel (a) depicts a feasible configuration, where these two attributes have exactly the same connections. Panel (b), on the other hand, shows a configuration that is disallowed when these two top attributes are entangled—because they have different connections.

Returning to the English case, religion was a central part of medieval culture as elsewhere in Europe, but Catholicism was not entangled with other key attributes, and this, in our interpretation, is the reason why it could be banned and prosecuted, as Henry VIII and Elizabeth I did, but then Catholics could be rehabilitated and allowed to rise up in society, as in the aftermath of the Catholic Emancipation Act of 1829. In contrast, the Islamic culture provides an example where a greater set of attributes were entangled with attributes that were outside of the domain of religion in England. For instance, differential taxation of non-Muslims was specified in the Quran, and this entanglement made modifications similar to the Catholic Emancipation Act more difficult.

In our framework, because entangled collections of attributes cannot be separated and linked to different attributes, entanglement directly leads to a smaller set of feasible cultural configurations.

We also note that there are natural reasons why abstract attributes tend to be more free-standing. If an attribute is abstract, then it is less likely to have an interpretation that is closely tied to the presence or meaning of other attributes. Likewise, it is easier to see specific attributes become entangled with each other. The English case provides an example with both abstract and free-

standing attributes, and highlights that these properties are symbiotic. The caste system provides an example of a relatively hardwired culture, because its attributes are both entangled (as argued in the Introduction) and specific (as argued earlier in this section). Nevertheless, entanglement and specificity are conceptually distinct and do not always travel together. For example, anti-Jewish customs in medieval Europe were specific (they could not be turned against Catholics), but they were still not entangled with other attributes, and this is part of the reason why they could be largely eliminated after the Napoleonic reforms in continental Europe (see Acemoglu et al., 2011).

In our framework, intermediate cultures—with medium levels of fluidity—may result either because they have abstract but entangled (or specific but free-standing) attributes or because their attributes have middling levels of specificity and entanglement. Several African cultures may fall within this intermediate category, because they have key attributes, such as egalitarian political notions and witchcraft, which are abstract but sometimes entangled with other attributes. Supporting this interpretation, witchcraft allegations have sometimes been leveled against elites to limit their power, but in some conflictual situations, they were turned against minorities (Acemoglu and Robinson, 2019). Relatedly, because some of its key attributes are very abstract, the Confucian culture is highly fluid.

2.7 The Systems Approach at Work: Cultural Persistence

Now that we have the main elements of our conceptual framework, we can use it to clarify how culture persists and influences economic and political outcomes. Let us go back to Figure 4, which represents the general case of interactions between culture and institutions. One idea that is made evident by Figure 4 (especially in comparison to Figure 3) is that a more hardwired culture is more likely to matter—meaning having a determinate impact on outcomes, along the lines of the arguments made by many leading cultural economists and political scientists. Because more hardwired cultures allow fewer cultural configurations, a configuration in such a culture is more likely to become a “hard constraint” on institutions and social outcomes. In contrast, for the most fluid cultures, though the culture set will influence politics and institutions as in Figure 4, a given cultural configuration is unlikely to be a major constraint on social equilibria: when political factors change—for example, when power shifts from one group to another—a new cultural configuration is likely to emerge swiftly, as also highlighted by our emphasis on saltational change. Changes in cultural configurations are therefore likely to be more rapid when existing attributes can alter their connections and meanings in response to social and political changes.

Our systems perspective especially sheds light on the nature of cultural persistence. In the Parsonian view, cultures, as coherent and stable social constructs, tend to persist almost by definition. Viewed from this perspective, the recurrence of some specific customs (certain rituals, tastes, specific linguistic features or behaviors) are viewed as evidence for cultural persistence or for the

very slow-changing nature of culture (Roland, 2004). The systems approach leads to two more nuanced interpretations.

First, the durability of some elements of a culture set does not imply “cultural persistence” in the sense of an enduring cultural constraint on political and economic outcomes. For instance, many elements of Confucian culture have been present for 2,500 years. Yet this does not imply that cultural configurations are unchanging. In fact, persistence of given attributes can co-occur with rapid changes in cultural configuration, as the example of Taiwan, discussed in Section 4, illustrates.

Second, viewed in this light, if a cultural configuration persists, this may be evidence of a social equilibrium in which this cultural configuration is not a binding constraint and any persistence of social equilibria is rooted in other factors. Consistent with this interpretation, we will argue that the persistence of autocratic institutions was not the indelible consequence of an autocratic Chinese culture, but rather, an autocratic cultural configuration was selected by the prevailing power dynamics as a way of further legitimizing imperial political institutions.

2.8 Cultural Struggles and Saltational Change

How does a society switch from one cultural configuration to another? To answer this question, we need to recognize that the choice of cultural configuration has both an individual and a collective aspect.¹⁴ If a particular attribute, say Christian teachings in the English example discussed next, has multiple potential meanings, then an individual, depending on their social status, economic choices and disposition, may adopt one of those meanings. These choices may also be influenced by the individual’s community and family (Sewell, 2005). These individual-level dynamics are important, especially for determining the scope for coordination and certain basic behaviors in society.

Our focus is more on the collective aspect. We have already emphasized the role of outside shocks and shifts in political power as important elements, and our framework clarifies how large changes in these factors are expected to lead to corresponding changes in cultural configurations—in a discontinuous manner, within the same timescale.

Three additional drivers of cultural change, which can further contribute to saltational change, are worth pointing out here. The first is cultural struggles. There is typically a struggle between different interpretations and cultural configurations, for example, as in 17th-century England, and such a struggle is more likely when the relevant cultural configurations support very different political and social arrangements. The result of this struggle depends on many factors, including

¹⁴One dimension of our conceptual framework that needs a much more modeling is how cultural configurations change in practice—for example, whose decisions matter directly and indirectly, and how these strategies are chosen. The reason why we leave this aspect of the framework loose is both for simplicity and also because the exact game-theoretic interactions vary across settings and institutions (e.g., democracy versus non-democracy or the degree to which there are collective choices based on learning and diffusion of ideas).

social and political dynamics, and the plausibility and other attractive features of the worldview implied by the different cultural configurations. The second is “cultural entrepreneurship”: new possible cultural configurations need to be articulated and popularized by some individuals and often require certain “innovations” (i.e., new ideas or arguments). In the English case, philosophers like Thomas Hobbes (1996[1651]), John Locke (2003[1689]) and Sir Edward Coke, as well as groups such as the Levellers, played this role by developing and popularizing an alternative to the prevailing configuration that favored absolutist rule (see also Mokyr, 2016, for a broader interpretation of cultural entrepreneurship). Such entrepreneurship becomes even more important in the context of cultural struggles. Third, cultural change in some domains can spill over to others—once the supreme authority of a monarch starts being questioned, this can pave the way to challenges to the authority of other institutions, such as the church, as our discussion in the next section will also illustrate. This broadening of the scope of cultural change is another aspect of saltational change.

3 English Culture, Autocracy and Popular Sovereignty

We now introduce a specific example of a culture set, that of 17th-century England. This set had a fairly uniform collection of attributes throughout the territories that now make up England. Underdown notes “English people of all regions and types of communities had much in common, and shared many assumptions about church and state, family and locality” (1985, pp. 44-45). However, we will see that different people and groups interpreted and combined these attributes in different ways and that this paved the way to the very rapid emergence of a new cultural configuration, emphasizing *Popular Sovereignty*, which was diametrically opposed to the prevailing configuration, the *Divine Right of Kings*, which justified a much more autocratic institutional arrangement. This new configuration brought fairly broad social and religious changes in England and motivated the parliamentary side in the English Civil War and later the Glorious Revolution. We will also see that this transition took place in the context of major shifts in political power and as a result of a process of cultural struggle.

3.1 The English Culture Set

By the 17th century, there was a clearly identifiable and broadly shared set of (cultural) attributes among the English, which had evolved over time, combining elements from the pre-Norman Anglo-Saxon epoch with Norman feudal institutions and interpretations of Christian doctrine. This culture set had many elements that were not directly related to political institutions and philosophy, and here we focus on the subset of attributes relevant to social hierarchy and political institutions.

As elsewhere in early modern Europe, religion was central to English culture, and English people believed that God had created a set of *natural laws*, which determined what was right and wrong and how society should be governed. As Laslett (2000, p. 71) explains: “our ancestors were literal

believers, all of the time”. The simplest version of such laws were the *Ten Commandments*, but usually they extended far beyond this. These beliefs impacted every aspect of English life in the 17th century, and most importantly for our focus, they shaped what the English people viewed as politically and socially legitimate. Although everybody looked to the Bible for these teachings, the Bible afforded a rich set of interpretations depending on which passages or which parts of Jesus’s life and pronouncements were emphasized, making them a good exemplar of abstract attributes in our framework. *Religion* therefore was open to different interpretations and meanings, which we capture in Figure 7 by means of its connections to other attributes.¹⁵

England was indubitably a hierarchical society in the 17th century. There was a clear distinction between aristocrats with their titles and different ranks, and non-aristocrats. Gregory King, in his 1688 *Social Table*, distinguished between those he claimed increased the “wealth of the kingdom” such as the 800 Barons, 600 Knights and 3,000 Esquires, and those who decreased the wealth, which included 364,000 Laboring People and Out Servants and 400,000 Cottagers and Paupers (Laslett, 2000, pp. 32-33). Aristocrats even had specific forms of address. An Earl had to be addressed as “My Lord”, while a Baron was “Your Lordship”. Hierarchy extended not just to the relationships between the nobles and the rest, but permeated every aspect of society, including the family. A yeoman, a relatively well off farmer, was “Goodman”, while Laslett (2000, p. 38) records the required form of address for a “Craftsman, Tradesman or Artificer” as “None”. We capture these elements with the attribute *hierarchy*, which is also a highly abstract one, because whether wealth, title, age or other features was the basis of hierarchy was determined by context.

Hierarchy was naturally related to another key aspect of English society, *paternalism/deference* which Wrightson (2015) defines as “reciprocity in unequal relations” based on “permanent inequalities ... and the recognition of the power of one party and the dependence of the other” (p. 57). Wrightson also emphasizes a quite opposed attribute, “neighborliness” which “implied a degree of equality and mutuality” in local communities. This applied “irrespective of distinctions of wealth or social standing” (2015, p. 51). Hence, we additionally include the attribute *neighborliness*.

Another key attribute of the English culture set was *nuclear family*. There is no consensus in the literature on when broader kin relations became relaxed and family obligations started centering around the nuclear family. Some, like Macfarlane (1978), argue that this had been in place at least since the 10th century. In the words of Laslett (2000, p. 19): “England was an association between the heads of such families”. Though what *nuclear family* means is very clear, how it integrated with notions of hierarchy was variegated, making this a fairly abstract attribute too.

Notions of legitimate governance in 17th-century England went back not just to the Bible but also to Anglo-Saxon times. These emphasized the participatory institutions and norms, which Wickham calls “assembly politics”, inherited from Germanic tribes, such as the *Witan* (see Mad-

¹⁵To keep things simple, in Figure 7 and subsequent figures we only depict the attributes and particular configurations rather than the whole set of feasible connections between attributes.

dicott, 2012, Wickham, 2016, Acemoglu and Robinson, 2019). Although English institutions were reshaped by the feudal order imposed by the Normans after 1066, ideas about the legitimacy of these types of participatory modes of governance survived almost everywhere, often in the common law, and were highly visible in local politics throughout the intervening 600 years (e.g., Hindle, 2000). The 15th-century scholar Sir John Fortescue argued that the common law of England had survived as was often said since ‘time out of mind’ or since ‘time immemorial’, and “The kingdom of England was first inhabited by Britons, then ruled by Romans, then again by Britons and then it was possessed by Saxons, but finally by Normans ... And throughout this period, the realm has been continuously regulated by the same customs as it is now” (Fortescue, 1997[1543], p. 26). Although these notions were everywhere in 17th-century England, in the context of politics they were often invoked under the rubric of “The Ancient Constitution” (see Burgess, 1992, Part I). They are clearly visible in important documents such as the Magna Carta of 1215 and in the pushback that centralizing efforts by monarchs such as Henry II encountered (see Acemoglu and Robinson, 2019). We represent these ideas under the *Ancient Constitution* attribute in Figure 7 (which signifies respect for customs of self-governance associated with the Ancient Constitution).

This attribute also represented the notion that in England there were customs that were “above both prince and people” (Sommerville, 1999, p. 83). Sommerville explains that, according to these ideas, “Parliament’s decrees were inferior not only to those of God and nature, but also to the fundamental precepts of the common law” (1999, p. 95). It was generally accepted that the common law had not been enacted by a sovereign and it constrained him and empowered the people. For instance, it implied that the sovereign could not “impose tallages and other burdens without consulting them [the people]” (Fortescue, 1997[1543], p. 17). This, in particular, meant no taxation without representation. Sir Edward Coke, the greatest common lawyer of the era of James I, summed it up in 1610 (Tanner, 1930, p. 188) : “the King hath no prerogative but that which the law of the land allows him.”

Another related attribute, which following Thompson (1971) we call *moral economy*, recognized the right of the poor to be “able to live”, and if they could not, they had the right to riot and seize food and “The ... natural justice of their cause was widely acknowledged even by the authorities” (Laslett, 2000, p. 149). By its nature, this attribute was also fairly abstract, with an often changing meaning.

A final attribute is a basic element of every human society and thus an element of virtually all culture sets: the *in-group* and the *out-group*, typically intersecting with notions of hierarchy and privilege. These could have been important, for example, in whether the in-group included all of the English people, also the Scots and the Welsh, and in issues of how Catholics would be treated after the Reformation and how different types of Protestant denominations would be regarded in

the civil war.¹⁶

Because all of these attributes are abstract, as we have argued, and because they are free-standing as well (e.g., religious ideas could be separated from those related to hierarchy, tradition and family), we think that all of the possible edges between them are feasible (though these feasible connections are not shown in Figure 7).

3.2 English Cultural Configurations

The basic attributes of the English culture set could be combined together in different ways to produce cultural configurations with diametrically opposed political justifications and social implications.

The Divine Right of Kings

The political institutions favored and propagated by the Stuart kings James I and his son Charles I concentrated power in the hands of the monarch. These institutions were, in turn, supported and justified by a cultural configuration, which we summarize by the term the *Divine Right of Kings*. According to this doctrine, the Bible’s natural law determined the proper order of the world and God’s subjects had to obey and work to advance it. Within this order, the king had been given the power to rule by God, was above all other humans. One of the most eloquent defenders of this view was the philosopher Sir Robert Filmer (1991[1680], p. 35), who argued: “For as kingly power is by the law of God, so it hath no inferior law to limit it”. The king was subject to God’s laws and it was not the place of people to hold him to account. This philosophy naturally legitimized absolutist political institutions that concentrated all political power in the hands of the monarch.¹⁷

In Figure 7, we interpret the *Divine Right of Kings* as being produced from a combination of four attributes linked together: *religion*, *nuclear family*, *hierarchy* and *paternalism/deference*.¹⁸

¹⁶The *in-group* attribute can be linked with others to generate various forms of social hierarchies. We do not dwell on these for brevity, and instead focus on how the English attributes were combined to generate two cultural configurations justifying the two most important political philosophies of the time.

One could also identify many other attributes. Identity was based not on kinship, but on residential location, notably a village and possibly a parish. Drinking, especially as social bonding, was important at least since the 14th century as recounted in *The Canterbury Tales*, and probably much earlier. In the 17th century, England was still predominantly rural and agrarian with common institutions such as the open field system. This system involved a lot of cooperation when planting or harvesting took place, and local society had elaborate rules of governance for this and for deciding who had access to other resources like the commons (see Heldring, Robinson and Vollmer, 2022). We do not introduce these attributes and many others one could add to the list, since we do not think they are critical given our focus on political institutions.

¹⁷Decades before Filmer, the Frenchman Jean Bodin had developed a theory of absolutism based on the same notions, stating: “there is nothing greater on earth, after God, than sovereign princes, and since they have been established by Him as His lieutenants for commanding other men” (Bodin, 1992[1576], p. 46).

¹⁸Patriarchal ideas were particularly important for this cultural configuration as well, and the *nuclear family* in this period is typically described as “patriarchal”, which was an important part of the 17th-century English cultural configuration (Laslett, 2000, p. 76, Wrightson, 2015, Chapter 4). We do not add patriarchy as a separate attribute, because this notion could be understood as a product of three of the attributes we already have: *nuclear family*,

Filmer provided a succinct account of this configuration in his book, *Patriarcha*, whose first chapter is entitled “That the first kings were fathers of families”, followed by others with titles such as: “It is unnatural for the people to govern or choose governors”. Filmer argued that “men are born in subjection to their parents”, and “The father of a family governs by no other law than by his own will, not by the wills of his sons or servants. There is no nation that allows children any action or remedy for being unjustly governed; yet for all this every father is bound by the law of nature” (Filmer, 1991[1680], p. 35). From this it was a short step to associate the king with the father. Filmer’s argument started with Adam in the Garden of Eden; “I see not then how the children of Adam ... can be free from subjection to their parents. And this subjection of children is the only fountain of all regal authority, by the ordination of God himself” (p. 7).

King James I, in developing his absolutist political project, proposed this patriarchal vision of monarchical authority. As he told Parliament in 1610, “As for the father of a family they had of old under the Law of Nature fatherly power, which was the power of life and death, over their children or family” (1994, p. 182). Here James is following Filmer in erecting the *Divine Right of Kings* on the foundations going back to natural laws from God. These ideas combined to form a coherent doctrine in support of absolutism.

This cultural configuration thus leant itself to a hierarchical interpretation of religion, akin to the doctrine of the Catholic Church. The Stuarts favored a powerful Anglican Church, controlled by them, with the Book of Common prayer and many rituals and celebrations, converging towards a type of crypto-Catholicism.

Hierarchy is central in Figure 7 and the configuration we depict emphasizes how this attribute itself was shaped by *religion*. We do not link *paternalism/deference* directly to *hierarchy* (though such a link is feasible and recall that we are not depicting all feasible links on this diagram), but instead do so indirectly via *religion*. This is to stress that what *paternalism/deference* meant depended on religious interpretations and a divinely-based model of the contemporary social structure, known as the “Great Chain of Being” (Tillyard, 1959). In this context, English paternalism was hierarchical, but it could also imply reciprocity and mutual aid or insurance.

It is also worth noting that this cultural configuration did not borrow many important ideas from either the *Ancient Constitution* or the *moral economy*, even if these were clearly recognized parts of English culture at the time. We also do not connect it to the *in-group* attribute, since the exact identity of the in-group does not appear to be central in this context. For example, Tudor and Stuart monarchs had different conceptions of the in-group (including about the treatment of the Catholics), while attempting to build similarly proto-absolutist institutions. Nevertheless, we included the *in-group* attribute in our discussion, because this attribute was important in other domains (e.g., in the context of discrimination against Jews or at times Catholics in social life) and

religious teachings and hierarchy.

thus highlights that the same attributes play varying roles in different domains.

Popular Sovereignty

Highlighting both the importance of our systems approach and the fluid nature of English culture, key attributes of this culture set could have very different meanings, and the interpretation undergirding the *Divine Right of Kings* became hotly contested. John Locke spent the whole of his *First Treatise* debunking Filmer's arguments and began the *Second Treatise* by stating boldly:

It having been shown in the following discourse, I. That Adam had not, either by natural right of fatherhood, or by positive donation from God, any such authority over his children, or dominion over the world, as is pretended (Locke, 2003[1689], p. 100).

Here, Locke is denying the type of "power of life and death, over their children or family" that James I had claimed. In the next section of the *Second Treatise*, entitled "Of the State of Nature", Locke reinterprets the "law of nature" as justifying, not absolutism, but constitutional monarchy created by a social contract. Thus monarchy was accountable to the people and removable by revolution if the monarch acted very badly.

A critical idea here is that monarchs' control over political power has to be interpreted as a result of the delegation of this power to them from a sovereign people. If a monarch abuses these powers or fails to act in the interests of the nation, then people have the right to withdraw that delegation. Thomas Stephenson, a conspirator in the "Gunpowder Plot" to blow up James I in 1605, articulated this view as follows: a Prince who governed badly could be "deprived of his kingdom by the authority of the assembly of the people" (Sommerville, 1999, p. 70).

English people who opposed absolutist government not only disputed the ideas of the *Divine Right of Kings* configuration, but also articulated an alternative political philosophy rooted in the same English culture set. They argued in favor of a contractual basis for power as manifested in the coronation oath where the king promised to rule wisely. They maintained that the king was indeed bound by a social contract that empowered him in the first place, and by man-made laws, not just by particular interpretations of natural ones.

This type of theory reached its apogee in the wake of the civil war, 1642-1649, when several radical groups mobilized (e.g., Hill, 1972). Most famous were the Levellers who emerged out of the Parliamentary armies and advocated for a republican government based on a broad distribution of voting rights. In 1647 they, along with other members of the army, debated Oliver Cromwell in Putney Churchhouse in West London. On October 29 Cromwell was presented with the Leveller manifesto, "An Agreement of the People". Colonel Thomas Rainborough told Cromwell: "I do think that the poorest man in England is not at all bound ... to that government that he has not had a voice to put himself under" (Robertson, 2007, p. 69). This was followed by a show of hands

in favor of extending voting rights to “all free Englishmen”. Subsequent version of the agreement included the clause “all men of the age of one and twenty years and upwards (not being servants, or receiving alms, or having served the late King in Arms or voluntary contributions) shall have their voices” (Haller and Davies, 1944, p. 321).

We represent the cultural configuration based on this very different political philosophy and justifying distinct political institutions, in Figure 8 and call it *Popular Sovereignty*. This figure has exactly the same attributes (and feasible connections) as in Figure 7, but a different set of edges are selected. Central to the *Popular Sovereignty* configuration is the linking of the attributes *Ancient Constitution* and *moral economy* to *hierarchy*, which alters what types of hierarchy are viewed as legitimate and what the rights and obligations of different individuals are in the social order of the country. Also significant is the replacement of *paternalism/deference* with the much more “horizontal” solidarity embodied in *neighborliness*. As stressed by our systems approach, once these attributes are in the picture, the meaning of *hierarchy* is almost completely transformed.

Figure 8 also removes the direct link between *nuclear family* and *hierarchy*, which emphasizes that this configuration supported a less patriarchal model of the family which ultimately allowed different gender relations.

The meaning of the *religion* attribute, which is abstract and free-standing, is also fundamentally altered when it is interpreted through the lens of *neighborliness* and the *Ancient Constitution*. This can be seen from the fact that the defenders of the *Divine Right of Kings* cited Proverbs 8:15, which states “By me kings reign, and princes decree justice”. Moreover, Psalms 82:6 says “I have said, Ye are gods”. Yet this did not mean that kings were literally gods, but just that they received their power from God (see Sommerville, 1999, pp. 35-36). As Sommerville (1999, p. 60) puts it: “Since natural law did not mark out any particular person or persons to rule the commonwealth ... it followed that political power had first resided in the community as a whole.” The anti-absolutist Matthew Kellison made this argument concisely in 1621 “seeing that Nature made all equall, and that there be no more reason why this power should be in one rather than another, it followeth that it is first in the communitie” (Somerville, 1999, p. 60).

A telling example of differing interpretations of the Bible is the exchange between Roger Maynwaring, a supporter of Stuart absolutism, and John Pym, who went on to spearhead the Parliamentary side of the civil war against Charles I. Maynwaring argued that Jesus’s statement that one should “render to Caesar the things that are Caesar’s” implied that the natural law allowed the king to raise taxes. Pym disagreed, arguing that Jesus was referring to the ancient Jews whose homeland was a province of Rome at that time and “their case is different from us” (Sommerville, 1999, p. 66).

Another commonly cited passage was St. Paul’s statement in Romans 13:1 that “Let every soul be subject unto the higher powers. For there is no power but of God: the powers that be are

ordained of God”. Absolutists interpreted this to support the *Divine Right of Kings*, while their opponents, using the lens of *Ancient Constitution*, interpreted the phrase to imply not that God had granted power directly to the king, but rather he gave power to the sovereign people who then delegated it to the king on conditions defined by a social contract (Sommerville, 1999, p. 10, f. 1).

The meaning of *religion* is also modified by the egalitarian principles of *neighborliness* and with a re-interpreted notion of *nuclear family*. Such a combination could be bolstered by Matthew 19:24: “it is easier for a camel to pass through the eye of a needle than for a rich man to enter the kingdom of God”, which clearly had a natural egalitarian interpretation. These different interpretations were linked to the broader context in which they were situated. For example, various forms of Protestantism, emphasized a direct relationship between the believer and God, without the need for institutionalized intermediaries like priests and bishops. This was more compatible with egalitarian interpretations, as in the beliefs of Protestant dissenting sects like the Puritans and so-called nonconformist groups, including the Anabaptists and Quakers.

What is notable in these opposing political interpretations is that they were both based on the same English cultural attributes. This is what Laslett (2000, p. xi) stresses: “early modern England had both poles of the authoritarian/egalitarian vector established in its attitudes. Filmerian patriarchal despotism stands at one end and the egalitarianism of Hobbes, the Levellers and Locke stands at the other.” As in our framework, any cultural configuration has to select attributes and interpret them. Sommerville observes: “early modern English people were fond of citing precedents”, but “precedents had to be interpreted” (1999, p. 103).

We also note that *Popular Sovereignty* was not just a philosophy. It became a potent cultural configuration legitimizing and then propagating new political institutions in the aftermath of the civil war and then again after the Glorious Revolution. As in our framework, this configuration emerged as a way of supporting very different political arrangements.

All of this highlights the cultural struggle between the two essentially diametrically-opposed worldviews and corresponding cultural configurations in 17th-century England. The articulations by people like Sir Robert Filmer and James I on the one side, and the cultural entrepreneurs, such as John Locke and Sir Edward Coke, favoring *Popular Sovereignty*, on the other. This struggle mattered because the two sides were trying to convince English society to accept the legitimacy of their interpretation. Since the choice of cultural configuration supporting a particular set of political institutions is largely a collective one, persuading a large fraction of the English public was a major battleground. How well and plausibly these ideas were articulated thus mattered greatly. We will next see that this competition was also shaped crucially by shifts in political power.

3.3 Politics and Saltational Cultural Change in England

What explains the surge of interest in the *Popular Sovereignty* configuration? As we have argued, this was not caused by a sudden change in the English culture set. The elements that were combined together to create the *Popular Sovereignty* configuration were present all along and did not undergo any major metamorphosis. Rather, as Sommerville sums it up (1999, p. 75): “Talk of resistance became more common after 1640 not because of the sudden discovery of resistance theory, but because resistance had become a practical possibility”. By “resistance theory” Somerville means the doctrine that it was acceptable to resist illegitimate political authority.

Resistance became a practical possibility because, in terms of Figure 4, politics transformed. A long process of social change, shifting economic power away from the aristocracy and the supporters of the monarchy had been underway since the late 16th century, and this gathered pace with the Reformation and its reverberations in England, especially with the break with the Catholic Church (Tawney, 1941; Stone, 2001, Heldring, Robinson and Vollmer, 2021).

Equally important was the bottom-up process of local organization and associated demands that picked up speed during the 16th century, often emboldening the middling sort of English-person and drawing support and inspiration from the ideas represented by the attributes *Ancient Constitution* and *moral economy* (Hindle, 2000; Acemoglu and Robinson, 2019). Many communities were already formulating such political ideas, even before these were gelled into a coherent configuration of *Popular Sovereignty* at the national level. Cultural entrepreneurship mattered because it determined whether the configuration of *Divine Right of Kings* could be dislodged in the ensuing cultural struggle.

Arguably more momentous was the effect of the growth in overseas trade and ventures, which were for the most part led by new people who had no ties to the monarchy and were resentful of crown monopolies that excluded them from other lucrative trades (Acemoglu, Johnson and Robinson, 2005b; Brenner, 1993; Pincus, 2009; Jha, 2015). These merchants, adventurers and in some cases minor nobility started challenging the absolutist model of James I and Charles I in the first half of the 17th century, and their political struggle ultimately led to the English Civil War. As our discussion of the Levellers above emphasized, many of the ideas that became the *Popular Sovereignty* configuration were articulated and started gaining acceptance in this process. Thomas Hobbes’s and John Locke’s ideas about the social contract were in turn inspired by these developments.

In terms of the conceptual structure summarized in Figure 4, we can interpret the major change as a shift in the distributional political power, triggering the emergence of a new cultural configuration tapping into the same culture set, but generating very different implications and justifications. The political power of these new groups, which turned out to be quite formidable, as witnessed by the outcomes of the two civil wars of the 17th century, facilitated the spread and acceptance of the

new cultural configuration: as power shifted away from the monarchy, an interpretation emphasizing the ruler's dependence on society and limitations on their powers became more meaningful and broadly acceptable.

What was transpiring was not just military and political conflict, but also cultural struggle. Underdown (1985), for example, argues that "Cultural conflict is, then, the thread that links early Stuart popular politics with its Interregnum counterpart, and ultimately with the Restoration" (p. 268). Thus, Englishpeople favored different configurations and they fought over them.

While our focus above was on the switch from one political configuration to another, these configurations had major consequences for other aspects of culture. When conflict undermines a particular configuration, new connections may become more likely to be selected, opening the way to broader cultural changes, going beyond the initial cultural struggle. For example, in the English Civil War, it was not just political culture that transformed, but also religious beliefs and interpretations (Hill, 1980). Como remarks: "One effect of the civil war was to throw up a dizzying array of competing ideas and discourses" (2018, p. 7). In particular, "the civil war helped to produce a kaleidoscopic landscape of competing Protestant groupings" (p. 18), and Como observes a "slew of theological deviations erupting among the godly by 1643. Hallowed Christian verities, such as strict predestination, the existence of an incorporeal soul, even the Trinity, were being questioned" (p. 180). Braddick notes the new forms of religious association "were in themselves a threat to learned divinity and religious order, and their teaching threatened fundamentals of received doctrine—about sin, the soul, salvation, and the role of scripture in guiding Christian belief and practice" (2008, p. 345). Morrill's emphasis is similar: "The chaos of the civil war created a bewildering variety of sects and gathered churches" (2000, p. 79).

After the civil war broke out in 1642, Parliamentary forces repealed "the Elizabethan statutes setting up the Church of England", abolished "the Book of Common Prayer, which was full of ceremonies and prayers which were Catholic in origin", and banned "the celebration of Jesus's birth (Christmas), and of his death and resurrection (the Easter Triduum)" (Morrill, 1993, p. 14). They created the Westminster Assembly to design a new church but no generally acceptable design emerged from this. Morrill points to cultural changes such as "attacks on primogeniture and other key aspects of property rights", and arguments for "a radical democratization of legislature, executive and judiciary" as being significant. But he also states, "most remarkable of all, a surrender by the state of the right to determine and impose on all citizens a uniformity of religious belief, observance and practice" (1993, p. 17). His conclusion about the consequences of the civil war is that "As the most fixed and daunting structures of the external world—monarchy, lords, Church—crumbled, so the internal pillars of thought crumbled. Men were freed to think hitherto unthinkable thoughts" (1993, p. 19).¹⁹

¹⁹An interesting implication of this, discussed in Como, is the emergence of the principle of "toleration", which is also at the heart of Locke's thought; see Locke (1983[1689]).

The English civil war was initiated by an invasion of Scottish forces, compelling Charles I to summon Parliament since he did not have money to raise an army. This event led to the sitting of the Short and Long Parliaments which outlined their grievances against the monarchy. Morrill and Como are thus arguing that once the political conflict was ignited, there was a protracted cultural struggle that resulted in a sudden, discontinuous remaking of the cultural configuration towards *Popular Sovereignty*. We can see these radical changes readily in the religious sphere. Morrill writes: “In the early and mid-seventeenth century, most intellectuals and most governors believed that there was a divine imperative to bring godliness, good discipline and order to the English nation. God was guiding his people towards a Promised Land ... No such vision survived the interregnum” (2000, pp. 80, 81). The cultural consequences of this “breakdown of a world-view dominated by religious imperatives” (2000, p. 82) were immense and “can be seen in literature and in science” (p. 82).

This English case illustrates several key themes of our essay. First, cultural change was produced by combining well-established attributes in a way that provided completely different meanings. Second, cultural change and political conflict were inseparable. Third, political conflict was accompanied by a major cultural struggle, as illustrated by the dynamics of religious beliefs as well as the broader discussions over political legitimacy. Finally, cultural change was saltational—both very rapid and broad in its reach. This last point is clear from the religious changes that occurred at the start of the civil war. It can also be seen from the ideas of the Levellers, who articulated the foundations of a very different cultural configuration and social order. This group came out of the New Model Army, formed by Parliament in 1645 (Gentles, 2022). Within two years this army had given birth to the Levellers and the Putney Debates, and it began to publish a series of documents called “An Agreement of the People”, which set out a radically egalitarian vision of English politics.

The English case also showcases the distinguishing features of our framework, for the cultural changes we have discussed here cannot be easily accounted for by existing theories. In contrast to the gradual, intergenerational evolution of culture in these approaches, we are seeing fundamental changes in key aspects of English culture within the span of a couple of years. Moreover, any theory that does not incorporate a systems approach cannot explain how a process that started with Charles I’s partial loss of legitimacy could be a trigger for wide-ranging transformations in political and religious beliefs.

4 Confucian Culture, Autocracy and Democracy

In this section, we turn to Chinese culture, which illustrates both the importance of the systems approach to culture and how given attributes can gain very different meanings and thus underpin discontinuous change in fluid cultures, such as Confucianism.

The term “Confucian” is often used to describe Chinese culture, since it is argued to have major elements that go back to the thought of Confucius and his followers (e.g., Weber, 1951[1915], Huntington, 1991, 1993, Yew, 2000, Kissinger, 2011). Many Western writers have also argued that this culture is rigid and inimical to democratic participation. Kissinger, for example, describes the Confucian “canon” as “something akin to China’s Bible and its Constitution combined” (2011, p. 14), while Huntington (1991) has no doubt about the consequences of this for political institutions, claiming that “no scholarly disagreement exists regarding the proposition that traditional Confucianism was either undemocratic or antidemocratic” (1991, p. 24).²⁰ At some level this seems plausible. Since at least the rise of the Qin dynasty in 221 B.C., China has been ruled by autocratic political systems—the imperial state until 1912; shifting warlords and the Kuomintang until 1949; and since then the Communist Party. Apart from a brief window around 1912, and recently in some local elections, China never had any sort of representative or democratic institutions in this approximately 2,250-year period. We will argue, in contradistinction to this perspective, that Confucian culture is made up of highly abstract attributes and allows a rich array of different cultural configurations. We then illustrate how these cultural configurations have emerged under different circumstances, most importantly in Taiwan over the last few decades.

4.1 The Confucian Culture Set

Confucius’s philosophy emphasizes that everyone is morally perfectible and should engage in a process of self-improvement to find “*The Way*” (*Dao*), which can be understood as “becoming virtuous”. Virtue is linked with ritual and starts in the family, making its meaning depend on notions of respecting hierarchy, both within and outside of the family. Once virtue is established in the private sphere and the family, it spreads in society all the way up to the state, which, according to Confucius, has to be run by virtue, not rules or bottom-up participation.

One of Confucius’s most famous observations states (*Analects* 16.2, p. 193): “When the Way prevails in the world, commoners do not debate matters of government.” This is often interpreted as saying that good governance cannot be achieved by means of political participation. Another famous aphorism summing this up (much quoted by President Xi) is (12.19 p.134):

Ji Kangzi asked Confucius about governing ... Confucius responded, “In your governing ... The Virtue of a gentleman is like the wind, and the Virtue of a petty person is like the grass—when the wind moves over the grass, the grass is sure to bend”.

In light of these ideas in Confucian culture, it is natural to conceptualize cultural configurations that are organized around *The Way* (as in Figure 9) as providing unwavering support to autocratic

²⁰Others have drawn similar conclusions from certain specific aspects of Chinese culture, such as its “collectivist” nature (Talhelm et al., 2014), or the fact that it is based on “face” (Ho, 1976), or the prevalence of a practice like *guanxi* (connections) (Gold, Guthrie and Wank, 2002).

political institutions. Nevertheless, Confucian philosophy, and the interpretation of *The Way*, is much more changeable than this simple account would imply.

Confucius's sayings were collected after his death by his students in a text called the *Analects*. These consist of highly aphoristic dialogues between Confucius (identified as the Master) and various students. This aphoristic manner of communication is one of the major reasons why the meaning and interpretation of Confucian precepts are not determinate and, in terms of our framework, correspond to highly abstract attributes.

This is particularly important in the case of *The Way*, which represents much more than unwavering respect for rulers and hierarchy. Consider this passage of the *Analects* (12.7, p. 128):

Zigong asked about governing. The Master said, "Simply make sure there is sufficient food, sufficient armaments, and that you have the confidence of the common people". Zigong said, "If sacrificing one of these three things becomes unavoidable, which would you sacrifice first?" The Master replied. "I would sacrifice the armaments". Zigong said, "If sacrificing one of the two remaining things becomes unavoidable, which would you sacrifice next?" The Master replied "I would sacrifice the food. Death has always been with us, but a state cannot stand once it has lost the confidence of the people."

Highlighting the importance of the systems approach, there are many different ways of interpreting virtuous behavior. Indeed, the statement "a state cannot stand once it has lost the confidence of the people" can be given an explicitly democratic interpretation. In this interpretation, *The Way* stands for the expectation, or even the right, of people to be ruled by virtuous rulers. If the ruler is not virtuous, disobedience may be justified.

As important as virtue to Confucian thinking are social roles. A telling and well-known passage goes as follows (15.24 p. 183): "Zigong asked: 'Is there one word that one can practise throughout one's life?' The Master said: 'Is it not *shu*? What you yourself do not desire, do not do to others'." The word *shu* can be translated as 'understanding' (2003, p. 183) or 'reciprocity' (Goldin, 2011, p. 15), making this the Confucian version of the Golden Rule. However, its usual meaning is a little different. As Goldin (2011, p. 16) explains it, it should be interpreted as "doing unto others as you would have others do unto you *if you had the same social role as them*". An early text, the *Book of Rites*, emphasizes the distinct roles people had to occupy, and decrees: "Everyone should stay in his place" (Fei, 1992[1947], p. 65). These included the "ten relationships": "Gods and ghosts, monarchs and subjects, fathers and sons, the noble and the base, the intimate and unconnected, the rewarded and the punished, husbands and wives, public affairs and private affairs, seniors and juniors, and superiors and inferiors—these are the principle types of human relationships." Even more explicitly, as Fei (1992[1947], p. 66) emphasizes, "the basic character of traditional Chinese social structure rests precisely on such hierarchical differentiations as these." These statements

emphasize the importance of hierarchical social roles in Chinese culture and motivate our choice of *hierarchy* as another key attribute.

Additionally, key rites for finding *The Way* revolved around the family and filial piety. Once this was established inside of a person, it would extend to the family and from there outwards to the whole society. A later Confucian text, the *Great Learning*, puts it like this (Legge, 1893, pp. 358-359):

Their thoughts being sincere, their hearts were then rectified. Their hearts being rectified, their persons were cultivated. Their persons being cultivated, their families were regulated. Their families being regulated, their States were rightly governed. Their States being rightly governed, the whole kingdom was made tranquil and happy.

Consistent with this interpretation, in a famous metaphor, Fei (1992[1947]) argued: “In Chinese society, the most important relationship—kinship—is similar to the concentric circles formed when a stone is thrown into a lake ... Everyone stands at the center of the circles produced by his or her own social influence. Everyone’s circles are inter-related” (pp. 62-63). These elements are represented by our next attribute: *lineages* (encompassing both family relations and kinship).²¹

Equally important in Confucian thinking is the role of ritual, already highlighted by some of the quotations above. Confucius emphasized that *The Way* could be achieved by attending to the rites (12.1 p. 125): “Yan Yuan asked about Goodness: The Master said: ‘Restraining yourself returning to the rites constitutes Goodness.’” In fact, Confucius built on ideas about how people learned tradition and lore from peers, arguing that “Being able to take what is near at hand as an analogy could perhaps be called the method of Goodness” (6.30, p. 63). Even a handshake was a tool of ritual (see Finagrette, 1972, p. 9). This motivates our next attribute: *ritual*.

The Way is related to God, *Tian*, and Confucian culture has been characterized as “humanistic religion” or “religious humanism” (Yao, 2000, p. 46) since it does not draw of the clear distinction between the human and the divine that Abrahamic religions do. Religious beliefs have therefore played an important role in the interpretation and propagation of Confucian philosophy, so in Figure 9 we also include *traditional religion* (where “traditional” emphasizes that this was not the state religion). Finally, as in the English case, we include *in-group identity*, which plays an important social and political role, even if it is less central for our focus here. Of course, there are other important aspects of Confucian culture as well, but we focus on these attributes, which we view as central for aspects of cultural configurations involved with political institutions.

²¹Recall that Confucianism maintains that one must subordinate oneself to hierarchy, especially within the family. Yet, highlighting the abstract nature of these attributes, Confucius argues in another text, the *Canon of Filial Piety*, that this is conditional on correct behavior: “Thus whenever there is unrighteousness, a son cannot but expostulate with his father and a minister cannot but expostulate with his lord. Thus whenever there is unrighteousness, one expostulates about it. To follow one’s father’s decrees - how can that be filial piety?” (quoted in Goldin, 2011, p. 36). Hence, even filial piety has limits. Indeed, this exact passage is quoted by those who now argue that Confucianism is consistent with democratic practices (e.g., Bell, 2012, p. 12).

Since these attributes all come from and are related to Confucian teachings, they are not fully free-standing. In particular, we interpret *The Way* and *Ritual* to be entangled. Nevertheless, the Confucian culture is still very fluid, because all its attributes are highly abstract: as Goldin (2011, p. 10) notes, “Confucius wished his statements to remain fluid.” This is not only because many ideas are communicated via aphorisms, but also because everything in Confucian philosophy was context specific and relative to a particular human relationship (Goldin, 2011, p. 15).

4.2 Cultural Configurations

Unsurprisingly, given such abstract attributes and the resulting rich set of cultural configurations, Confucian culture has been very fluid throughout the ages. This can be seen in its adaptability and durability in the face of major upheavals in the ethnic, ideological and political priorities of different dynasties.²² It is most saliently illustrated, however, by the contrast between the various cultural configurations that supported a highly autocratic conception of politics during the Imperial times and the cultural configuration that has provided the justification for democratic institutions in Taiwan over the last 30 years. We refer to the former set of cultural configurations as the “*Mandate of Heaven*”, to capture the idea that the mandate of emperors comes from heaven, and to the latter cultural configuration as “*Confucian Democracy*”, to emphasize the justification it provides to democratic institutions

The Mandate of Heaven

Figure 9 depicts the linkages that make up the cultural configuration we call the *Mandate of Heaven*. The term goes back to the Zhou Dynasty, whose rulers had claimed the right to rule because of the mandate coming from the heavens. This notion was then appropriated by the Lord of Qin, and thereafter all Chinese emperors claimed to have received the *Mandate of Heaven*. This was all imposed from the top, with no ability for regular people to object to this interpretation.

It is easy to see how Confucian culture can generate a cultural configuration supporting such political institutions. In Figure 9, we represent this configuration as comprised of five attributes, *The Way*, *hierarchy*, *ritual*, *lineages* and *traditional religion* all being interconnected. *The Way* and *hierarchy* play a defining role by enshrining the idea that legitimate power, authority and virtue all emanate top-down. In the political sphere, this means they originate from the ruler, who has the right to rule given to him by tradition or religion. To the extent that the mandate is literally interpreted as coming from heaven, religious ideas are important as well, and these are

²²In particular, although the emphasis on Confucianism ebbed and flowed during different dynasties, Confucian ideas remained a central part of Chinese people’s culture and part of the governing philosophy of the elite. We interpret these changes in political institutions and the supporting cultural configurations as being undergirded by the fluidity of Confucian culture as well. For example, somewhat different elements of Confucian teaching were emphasized during the despotic Ming Dynasty and the more permissive and less repressive Tang and Song Dynasties (see the discussion and references in Acemoglu and Robinson, 2019).

often rooted in *traditional religion*—captured by the link to this attribute and representing the justification coming from God (Tian) for the ruler’s right to rule.

These nodes are then connected to both *ritual* and *lineages*, which reflects the importance of these two attributes in Confucian thinking and simultaneously stresses that they thus redefine *ritual* and *lineages* in the context of this hierarchical nature of society. Note further that the two other attributes are not linked to the rest. The *in-group identity* could have also been linked to these attributes to indicate that the identity of the in-group, for example as the Han Chinese, is a defining feature of the cultural configuration in question. We do not include this link because the *Mandate of Heaven* configuration has supported the dynasties of Mongols and Manchus as well.

Our representation of the *Mandate of Heaven* also has similarities to the ideological foundations of the Chinese Communist Party’s reign today, especially under President Xi, who often appeals to Confucian justifications for his authority. In this case, the mandate is not literally from the heavens, but the autocratic rule of the Communist Party is justified by the virtuous behavior and nature of its leaders. Yet, in a classic top-down fashion, it is not some outside body or the people that decide whether the ruler is virtuous, and it is sufficient for virtue to be claimed by the ruler and other elites.

Confucian Democracy

Claims of the unwavering autocratic nature of Confucianism in the literature notwithstanding, since the late 1980s Taiwan has developed a vibrant democracy and the past decade has witnessed a sustained movement demanding democracy in Chinese controlled Hong Kong. As in our discussions in the last two sections, it is remarkable how rapid these cultural changes have been. It took less than a generation in both societies for ideas of democratic rule and bottom-up political participation to become central to the political discourse.

One interpretation would be to maintain that this was the result of Westernization and Confucian culture being abandoned, as argued by Huntington (1991) and Henrich (2020). The evidence contradicts this view, however. First, if anything, there was less reason for Confucianism to decline on these two islands, since they avoided the anti-Confucian drive of Mao’s Cultural Revolution. Second, the Kuomintang who ruled Taiwan between 1945 and 2000 emphasized Confucianism as part of an attempt to distinguish itself from the communists on the mainland.

Available survey evidence confirms the enduring importance of Confucian ideas in Taiwan. Fetzer and Soper (2012) use data from the World Values Survey and the Asian Barometer to document the extent of Confucianism in Taiwan, China, South Korea and Singapore. They do this by using the answers to three questions. The first captures family values; “for the sake of the family, the individual should put his [or her] personal interests second”. The second involves social hierarchy; “if there is a quarrel, we should ask an elder to resolve the dispute” and also “being

a student one should not question the authority of [one's] teacher". Finally, they look at social harmony; "when one has conflict with a neighbor, the best way to deal with it is to accommodate the other person". The authors find little difference between the way that people answer these questions in Taiwan and China, thus providing no support for the retreat or collapse of Confucian values in Taiwan.

Highlighting the competition between different cultural configurations and worldviews, Fetzer and Soper (2012) also document an interesting pattern: in 1995 "adherence to Confucian values has no effect on a respondent's support for democracy ... the separation of the state from Confucianism in Taiwan has freed the tradition from its association with authoritarian values" (p. 13). By 2001, however, after the first democratic presidential elections, the correlation between Confucian values and attitudes towards democracy began to turn positive and Confucianism was "gradually transforming itself into an ideology that either had no impact on such political attitudes or bolsters enthusiasm for certain aspects of democracy and human rights" (Fetzer and Soper, 2012, p. 43).

Therefore, rather than Confucianism being abandoned as Huntington and Henrich suggest, the rapid—arguably saltational—change in Taiwan (and possibly Hong Kong) was driven by an emergent configuration that fundamentally altered the meaning of *The Way*. Figure 10 depicts this configuration, which we call *Confucian Democracy*. *The Way* and *ritual* are again connected to *lineages* and *traditional religion*, but these two are no longer linked to each other, emphasizing the less central role of lineage-related ideas in the political equilibrium. More importantly, *hierarchy* is no longer connected to *The Way* and *ritual*, and this fundamentally alters the meaning of *The Way*.²³ As already emphasized in the Introduction, the fact that only a few connections are different in this case than in the *Mandate of Heaven* in Figure 9 also explains why cultural change can be so discontinuous—most of the key attributes are playing similar roles, but are now part of a system that modifies the meaning of *The Way* and alters which types of political arrangements can be legitimized by the resulting cultural configuration. It also reiterates that a systems approach is necessary even when a single attribute changes its meaning.

The alternative configuration represented in Figure 10 should not be seen as a completely new invention of the 1990s. Similar interpretations of what virtuous behavior meant were present in the justification for the huge revolts that Chinese empires witnessed. These included Liu Bang's insurrection that ended the Qin Dynasty, the An Lushan Rebellion in the 7th century, and the Taiping and Boxer Rebellions in the 19th century, which all pointed to the unvirtuous behavior of rulers. Fetzer and Soper's conclusion, echoed by Shin (2011), is in line with our interpretation that Confucianism is inherently compatible with a democratic interpretation:

²³In this alternative configuration, social hierarchy is still important in other domains, especially within the family, as also emphasized by the survey responses from Taiwan discussed above. Indeed, *ritual* and *lineages* are still central and consequently structure relations within families and kin groups in a somewhat hierarchical way, consistent with the evidence from the World Values Survey.

the Confucian tradition is flexible ... it allows for more than one interpretation, and it can be used as a basis for democracy and human rights (p. 3)

These ideas are related to an emerging literature, including Qing (2012), Chan (2013), Bell (2016), and Bai (2019), who provide models of “Confucian Democracy”. These scholars argue that Confucian principles are perfectly compatible with democratic practices and they use many citations from the broader Confucian historical and philosophical literature to make this case. Qing (2012), for example, proposes a model of a modern Confucian constitution with three bodies, one of which is democratically elected by the people (the “House of the People”). He traces the origins of this idea to *The Gongyang Commentary*, a commentary on Confucius’s writings from the Spring and Autumn period, between 771 and 476 B.C., overlapping with Confucius’s life (551 to 479 B.C.). *The Gongyang Commentary* argues that to rule one must “share in the realms of heaven, earth and human beings” (quoted in Qing, 2016, p. 27). Qing interprets this to mean that “The legitimacy of the ‘human’ refers to the legitimacy of the will of the people because conformity to the will of the people directly determines whether or not people will obey political authorities” (p. 27). He adds (p. 32): “monarchy is not the sole, unwavering choice of Confucianism ... Changes in historical circumstances may necessitate changes in the form of rule.”

Though consistent with this emerging scholarship, our account provides a key new conceptual element, the systems approach, which is essential for understanding how the meaning of the same cultural attributes can be so rapidly transformed.

4.3 Political Foundations of Cultural Interpretations

We have argued that Taiwan may have become democratic not because it abandoned Confucian culture, but rather because there were always other types of political institutions that were compatible with Confucianism. Why do we not see these types of more democratic cultural configurations in Chinese history? The answer is politics—more democratic configurations were not selected because political power rested with monarchs and groups that had authoritarian interests and agendas.

The origins of the first Chinese imperial dynasty, the Qin, lie with the highly authoritarian political project of the “legalists” (the loci classici are Han Feizi, 2003, and Shang Yang, 2019). These ideas were then linked with Confucianism and were effectively used by successive dynasties. Even if there were rebellions, power never consistently shifted to groups that could or would want to strengthen bottom-up participation in politics. This started to change with the brief period of republican rule after 1912, but was cut short by the communist takeover of power. Mao Zedong’s conception of politics was not too different than the *Mandate of Heaven* configuration developed above, and certainly agreed with the main top-down precepts of legalism. Bell and Pei note: “In China, the supposedly egalitarian ideals of communism became transmuted into hierarchical social forms without much controversy” (2020, p. 23).

In fact, the legalist project was applauded by the young Mao who, as an 18 year-old, wrote an essay praising Shang Yang whose laws “were good laws” and Mao despaired at “the stupidity of the people of our country” (Spence, 2006, pp. 17-18). After Mao’s death, there was a major transformation of Chinese institutions, but the monopoly of power of the Communist Party did not change, and one-party rule once again selected a configuration similar to the *Mandate of Heaven*. As de Bary (1998, p. 164) argues, “it can hardly be doubted that Confucianism ... has become the claimed ideological justification for one-party rule, for openly rejecting peaceful evolution to democracy, and for suppressing demonstrations.”

In contrast, once political power shifted away from narrow elites in Taiwan and Hong Kong, a different facet of Confucian philosophy emerged, enabling an alternative configuration that could support more democratic practices and institutions. Hence, in our framework, it is not surprising that the Communist Party in China has used the Confucian legacy to attempt to sustain its despotic rule, while the same legacy is synergistic with vibrant democracy in Taiwan. This is what Weber (1951[1915], p. 249) understood seven decades ago, when he wrote: “the basic characteristics of the [Confucian] “mentality” ... were deeply co-determined by political and economic destinies”.

The conclusion from this discussion is that Confucian culture should be viewed as a repertoire of ideas, practices and concepts and cannot be boiled down to a determinate cultural configuration supporting a specific set of political institutions. Nor should it be thought of as creating an unwavering tendency towards authoritarianism. We can see the same forces at work in the ease with which mainland Chinese culture has adapted to a much more individualistic lifestyle and social structure over the last two decades (see Yan, 2009).

Overall, aspects of the Confucian culture set can be, and have been, interpreted to support different political systems—an autocratic one as in the Imperial era, and more democratic one as in Taiwan and Hong Kong.²⁴ As with the English culture, the fluidity of the Confucian culture is at the root of this reinterpretation and makes very rapid, almost discontinuous change possible. Also, as with the English case, the Chinese setting highlights the distinctive aspects of our theory. The divergence of cultural configurations between mainland China and Taiwan makes both the central role of political factors and the importance of rapid cultural change clear. Even more centrally, without the systems approach, it is very difficult to account for the simultaneous persistence of critical attributes of the Chinese culture set and very different legitimization for political rule that these attributes have provided in Imperial China, Communist China and post-democracy Taiwan.

²⁴One interesting implication of our framework in this context is that if China can completely defeat the democracy movement in Hong Kong, then the prevailing cultural configuration in Hong Kong may start resembling the one in mainland China rather than the Taiwanese one.

5 Benefits and Costs of Hardwired Cultures

In our conceptual framework, cultures differ in terms of their attributes and their feasible connections, and this creates differences in how fluid or hardwired they are. In this section, we explore these issues. We first illustrate some costs of less fluid cultures using the quintessential example of the Indian caste system, which enshrines a rigid hierarchy across castes. We then discuss the emergence of monotheism, and especially what are sometimes referred to as “Big Gods”, which are moralizing deities that promote coordination and rule-following among their subjects. We interpret these Big Gods as a transition from a relatively fluid, polytheistic culture to a fairly hardwired culture. This transition nonetheless ushered in a range of benefits at least initially, because Big God religions allowed greater within-society cooperation and better economic and political coordination. Finally, we turn to the Islamic culture. Though highly fluid in some aspects, the way in which many attributes were entangled due to the nature of the Sharia law makes some of Islam’s political traditions more hardwired. We argue that this feature was useful in the early flourishing of Islamic civilizations and their military expansion, but then became an impediment to political change.

5.1 The Caste System

Though there is an intense debate over the evolution of the Indian caste system, and the role that colonialism may have played in its evolution, it was present in Indian society as early as 2,500 years ago in the *Vishnu Smriti*, one of the most ancient Indian texts. There it says

Brahmanas, Kshatriyas, Vaisyas and Sudras are the four castes. The first three of these are (called) twice-born. Their duties are. For a Brahmana, to teach (the Veda). For a Kshatriya, constant practice in arms. For a Vaisya, the tending of cattle. For a Sudra, to serve the twice born.

Here the book is describing the division of Indian society into four varnas. Embedded inside the varnas are jatis, which are usually referred to as ‘castes’. There are around 3,000 jatis in India. Duties of the different varnas in the *Vishnu Smriti* include “reverence towards gods and Brahmanas”. A final group, the untouchables, or Dalits, of whom there may be 200 million in India today, sit at the bottom of the hierarchy, and in fact, are formally outside the caste system. In our framework, the attributes generated by the Indian caste system are specific and entangled. The attributes of the caste system are, by definition, specific: almost every aspect of social life is regulated according to caste identity. These attributes are also entangled, as economic functions, social roles, status, family structure and living arrangements are all related to the same foundational caste roles, and these roles are enforced by religious authority.

The best way to understand the implications of the caste system is via the writing of the great Dalit intellectual and statesman B.R. Ambedkar, whose 1936 lecture, “the Annihilation of Caste”, is a devastating condemnation of the system. He wrote:

the caste system is not merely a division of labor. It is also a division of laborers. Civilized society undoubtedly needs division of labor. But in no civilized society is division of labor accompanied by this unnatural division of laborers into water-tight compartments. The caste system is a hierarchy in which the division of laborers are graded one above the other. In one of its aspects, it divides men into separate communities. In its second aspect, it places these communities in a graded order one above the other in social status. (Ambedkar, 2014[1936], pp. 233-234).

Ambedkar elsewhere likened Indian society to “a multi-storeyed tower with no staircase and no entrance. Everybody had to die in the story they were born in” (quoted in Roy, 2014, p. 104).

Organizing society like this obviously has many implications (see Acemoglu and Robinson, 2019). For our purposes it stands as a salient example of a hardwired culture. Its attributes are entangled (originating from the same caste hierarchy) and specific—everyone is born into the jati and varna of their parents, and this determined not just their occupation but their station in life. Already in the *Vishnu Smriti*, different varnas have distinct occupations and within the varnas, jatis have more specific occupations.

That this system has bite can be seen from the data collected by the first person who systematically investigated it, the British colonial administrator E.A.H. Blunt. Blunt’s 1931 book *The Caste System of Northern India* used data about occupations and jatis from colonial censuses to explore whether different jatis actually undertook the occupations with which they were traditionally associated. He merged the jatis into 12 categories, beginning with agriculture, laborers and village menials, pastoral occupations, learned professions, trade and industry, dealers in food and drink, with the final category being beggars. Each of these categories was made up of more specific lines of work and Blunt matched the jatis with these different occupations. His conclusions were striking: 90% of agricultural jatis remained in their agricultural occupations. Elsewhere, the patterns were even more remarkable, with jatis predominantly specializing in their narrow traditional occupations: 75% of sweepers swept, 75% of goldsmiths continued in that line of work (the jati was called Sonar), 60% of barbers and washermen continued to shave and wash, 50% of carpenters, weavers, oil-pressers and potters also occupied their traditional professions (Blunt, 1931, p. 240).²⁵

The economic consequences of hardwiring people’s castes and occupations are clear and were identified by Ambedkar: “the division of labor brought about by the caste system is not a division based on choice. Individual sentiment, individual preference, has no place in it. It is based on

²⁵See Deshpande (2011) for more recent evidence on occupational patterns by jati.

the dogma of predestination” (2014, p. 235).²⁶ As a result, this system was bound to be highly inefficient, and not just economically.

Ambedkar’s analysis of the stifling role of caste in Indian society also explains why even as the country became democratic, there were severe limits imposed on democratic practices coming from its relatively more hardwired culture. For example, as the country was getting ready for the beginning of its republican phase, Ambedkar noted:

On 26 January 1950, we are going to enter into a life of contradictions. In politics we will have equality and in social and economic life we will have inequality. In politics we will be recognizing the principle of one man one vote and one vote one value. In social and economic life, we shall, by reason of our social and economic structure, continue to deny the principle of one man one value. How long shall we continue to live this life of contradictions? (Ambedkar, 1949, p. 428).

5.2 Big Gods

The Indian caste system provides the canonical illustration of the costs of hardwired cultures. The most obvious are social and economic, but as we pointed out in Acemoglu and Robinson (2019), the caste system also creates political impediments, because it makes it difficult for society to cooperate and solve its collective action problems, especially in keeping politicians and elites accountable, which is critical for building inclusive institutions.

However, hardwired cultures can also generate economic benefits, because they coordinate expectations, facilitate coordination and may provide better incentives. One of the most interesting examples is that of “Moralizing Gods” or what are sometimes called “Big Gods”. Historically, human societies had a multitude of gods and supernatural figures that were often morally quite ambiguous, like the Greek Gods. These gods either did not typically intervene in people’s lives or were happy to coexist with other gods.

Then, in a short span of time, in several societies there emerged new more powerful gods that claimed a monopoly of supernatural power, demanded allegiance, laid down moral rules and specified punishments for deviations (Skaperdas and Vaidya, 2020, develop a model of this). A typical example is the Christian religion, where the *Ten Commandments* lay out certain patterns of desired behavior. If one deviates from them, one is sinning, and sinners will be judged and may not be able to enter heaven. In the *Book of Exodus*, the commandments are followed by a long list of other rules with more prosaic punishments, such as “And he that curseth his father, or his mother, shall surely be put to death.”

In terms of our framework, the switch to a Big God religion would correspond to the emergence

²⁶For more recent evidence on the effects and the economic costs of the caste system, see Hoff, Kshetramade and Fehr (2011), Gupta, Mookherjee, Munshi and Sanclemente (2022), Munshi (2019) and Oh (2023).

of a new culture set that supports a fairly hardwired culture. This is because polytheistic societies had behaviors that were not highly standardized (corresponding to abstract attributes) and did not have many entangled attributes, since customs and proscribed behaviors did not all originate from the commands of a Big God and often were not even congruent with each other. For example, Henrich (2020, p. 128) describes the benefits of Big Gods using the example of Islam: “Religions have fostered trade by increasing trust, legitimizing political authority, and expanded people’s conceptions of their communities by shifting their focus from their own clans or tribes to larger imagined communities like all Muslims”.

The natural conclusion to draw is that: “If people believe that their gods will punish them for things like stealing, adultery, cheating, or murder, then they will be less likely to commit these actions even when they could get away with it” (Henrich, 2020, p. 133). Ensminger and Henrich (2014), Norenzayan (2015) and Lang et al. (2019) provide cross-cultural experimental evidence consistent with these ideas, documenting a correlation between belief in Big Gods and willingness to follow various rules. Therefore, Big Gods, both via the incentives they generated and because of the common identities they created, were quite successful in coordinating behavior and helped solve various collective action problems, which is one of the reasons why their emergence was often associated with state-building efforts (see Acemoglu and Robinson, 2019, and Wright, 2009). Perhaps it is not surprising that Big God religions (Hinduism, Judaism, Christianity and Islam) greatly expanded and today cover more than half of the world’s population.

5.3 Benefits and Costs of Islamic Hardwiring

Islam, as Henrich points out, is an example of a religion with a moralizing god and strong supernatural enforcement. It also developed elaborate institutions so that law-breaking could be punished not just in the afterlife but in this world too. For example, the punishment for charging interest was that you would “rise up on the Day of Resurrection like someone tormented by Satan’s touch”, and this was typically preceded by equally harsh punishments in the hands of an Islamic state or the community.

Although, as we have seen, Islam had sufficient fluidity to adapt to and coexist with tribal customs in the Arabian Peninsula and later with the traditions of Turkic tribes (Rogan, 2012), in some important respects it is also relatively hardwired. Most importantly for our focus, unlike in the English or Chinese case, Islam leaves no room for legislation, for the law has already been created by God (see Gitmez, Robinson and Shadmehr, 2022, for a discussion of this and its consequences for political institutions). Gibb (1955) states: “Since God is Himself the sole Legislator, there can be no room in Islamic political theory for legislation or legislative powers” (p. 3). Zubaida (2003) concurs, arguing “rulers cannot play a part in legislation” (p. 74). The principle that God created the law which could not be changed by people—what Cook (2014) refers to as the “divine monopoly

of legislation” (p. 332)—makes most attributes rooted in the Quran and Hadith quite specific. In our framework, this additionally implies that many attributes, especially those relevant for political legitimization, are entangled as well, because they trace their origins to religious doctrine and it is difficult to separate one part of the Quran from another.

The historical evidence is fairly clear that Islam had various benefits to the societies that adopted it. Appeal to religious authority allowed Mohammed and the first four Caliphs to unite the peoples of Arabia and build a state where none had existed before. The fact that laws and legislation came directly from God, and arguably even that key attributes were entangled and one could not pick and choose, was helpful in this initial phase. Its political legitimization enabled Islamic leaders to support coordination and cooperation on a scale previously unimaginable. The most obvious effect of this was the rapid military expansion of the new Caliphate. Within 30 years Arab armies had conquered not just the entire Arabian penninsular but also what is now Isreal, Palestine, Lebanon, Syria, Iraq, Iran, Egypt and Libya. They created a vast new state whose capital moved first to Damascus and then to Baghdad.

The new state provided stability, security and a fair amount of predictable dispute resolution over a large territory, unparalleled in the region. This led to rapid growth of trade in a framework created by Islamic law. As the great Islamic scholar Ibn Khaldun pointed out, the Islamic state “imposes only such taxes as stipulated by the religious law, such as charity taxes, the land tax, and the poll tax. They mean small assessments ... They have fixed limits which cannot be overstepped” (2004, p. 90). Khaldun argues that this system generated a favorable incentive environment. The Islamic state additionally provided public goods such as irrigation, and these along with the opportunities and incentives presented by expanding markets, triggered considerable investment and innovation in agriculture (Watson, 1983, see also Rodinson, 2007). There were various scientific breakthroughs and a great intellectual flowering as well.

Although the highly structured political system of Islam generated early benefits, it also constricted cultural adaptations in response to fundamental international and technological changes in later centuries. Prohibitions on usury, for example, are generally believed to have retarded financial development in the Islamic world (Rubin 2017).

Other economic institutions, like the *waqf*—a type of religious charitable foundation—may have at first played a useful role by providing some form of property rights against state expropriation. Kuran (2011) has argued that it has also impeded investment and retarded the development of modern corporate forms. Well-off people started setting up *waqfs* to provide public goods, and sometimes to provide resources to their offspring. This organizational form was useful, because it was not possible to maintain intact business assets, and the *waqf* provided a way of partially circumventing these restrictions, precisely because it was an institution entangled with Islamic teachings, for it had emerged from the interpretation of several hadiths. Yet this entanglement

subsequently made it difficult for Islamic societies to move from the institution of *waqf* into something better fitted to a modern economy, such as nascent forms of legal private property. As Kuran (p. 128) puts it: “An unintended consequence of the *waqf* system was the dampening of incentives to develop organizational forms suitable to large and durable commercial operations”. He also points out that Islamic inheritance laws “tended to fragment the estates of successful businessmen” (p. 77). Comparatively, he notes that Christian canon law had practices that were “relatively easy to modify, and attempts at reform were less likely to be resisted as sacrilegious” (p. 81). In our conceptualization, this again made the cultures using Christian law quite fluid, while those using Islamic law, undergirded by Islamic teachings, were on the whole fairly hardwired.

The entanglement of Islamic cultural attributes may have also prevented configurations that would have allowed political reform toward non-autocratic political institutions. Legislation remained God’s monopoly, reducing the role of legislative bodies. In addition, Platteau (2017) has argued that Islamic culture has generated an “obscurantist” equilibrium, whereby any argument against current rulers has to be couched in Islamic language. In Platteau’s words: “When despots use religion to legitimize themselves in a highly contested environment they may provoke a counter-move in the form of religious backlash in which the ruler and his opponents compete to demonstrate their superior fidelity to the faith” (p. 245). This type of equilibrium makes any political reform towards more representative institutions very difficult (see also Acemoglu and Robinson, 2019 and Kuran, 2023).

6 Conclusion

This paper has provided a new framework for understanding and studying the interrelationships between culture and institutions. We differ from the view that cultures are coherent and stable, which is central to many of the early sociology works, for example those following Talcott Parsons’s seminal contributions and to current approaches in economics and political science that build on them. Rather, we emphasize the fluidity of cultures, especially in their ability to generate cultural configurations that embody different political ideas and support distinct political institutions.

Our framework has a number of distinctive features that set it apart from most of the existing literature. First, we adopt a “systems approach” to culture. This means, in particular, that the meaning and function of given attributes are determined within the whole configuration and political equilibrium. As a result, attributes can modify their meaning rapidly as conditions are altered, and the persistence of a given attribute does not imply broader cultural persistence.

Second, our framework emphasizes discontinuous or saltational changes in culture as attributes are recombined and acquire new meanings in response to evolving circumstances. This perspective contrasts sharply with existing approaches that are implicitly or explicitly based on evolutionary theories and allow only gradual change in culture.

It also implies that once saltational change happens as a consequence of one type of cultural struggle, it may lead to quite general reconnections of cultural attributes in other domains, as in the case of the English Civil War, opening the way to broader cultural change.

Third, our framework suggests a key property of a given culture is its degree of fluidity, which determines the extent of adaptation to new environments. Fluidity in turn depends on whether attributes are abstract or specific and whether they are free-standing or entangled. Importantly, however, hardwired cultures are not necessarily detrimental to economic success, because they can enable more effective coordination and more powerful political legitimization. Nevertheless, relatively fluid cultures may be able to adapt better to certain changes.

Finally, our framework enriches the relationship between institutions and culture. In addition to the degree of fluidity, “cultural struggles”—which result from efforts by adherents of different political and social projects to convince others—are often intermingled with political conflict, and the outcomes of these struggles determine the direction of institutional and cultural change.

We also took a stab at using this framework to interpret aspects of the nature and some key transitions in several major cultures, ranging from England to China, Islam and the Indian caste system.

This paper is a preliminary step. If the conceptual framework we propose is useful (something to be decided by other scholars in reference to other theoretical ideas, history and empirical evidence), then it will need elaboration and new ways of being operationalized in empirical and historical work. We end this paper with brief discussions of a couple of these directions.

Theory: The first area that requires considerable work is to improve the conceptual framework proposed in the Appendix, including with formal modeling. Our preliminary attempt here has been no more than a sketch. Let us mention five directions we see as particularly important in future theoretical inquiries. First, it would be fruitful to explicitly recognize and model the diversity of interpretations and frameworks that exist within a population at any given point in time. From a modeling point of view, this would necessitate explicitly allowing for a distribution of cultural configurations within a group. These configurations interact, as people come into personal, economic and political contact, and thus, in general they need to be mutually understandable—so that people can coexist with those that have a different worldview and elements of social meaning. These contacts also provide one way in which different cultural configurations spread in the population at the expense of others. Elite efforts and innovations by cultural entrepreneurs aimed at spreading some cultural configurations and producing new configurations can then be incorporated into this framework. An equilibrium in such a setting would be an evolving, and occasionally jumping, distribution of cultural configurations within the population.

Second, proper game-theoretic foundations, which recognize how cultural configurations are used and are endogenously updated, would be an important direction for future work as well.

A preliminary attempt in this direction is Acemoglu and Jackson’s (2015) work, where cultural configurations emerge as different generations interpret the signals they receive from the past to decide whether they are in a cooperative or noncooperative equilibrium. These agents then take actions anticipating how their actions will be interpreted in the future. Discontinuous change occurs because of random events, due to highly informative actions (for example, from the behavior of prominent agents) or as a result of endogenous leadership. Incorporating more realistic interactions within a generation, conflicts of interest, the role of institutions, and richer forms of cultural perceptions into this type of framework would be challenging but worthwhile directions.

Third, much more is needed in the modeling of the joint evolution of culture, politics and institutions. One avenue that looks promising is to introduce elements that allow for broader interpretations of cultural configurations and discontinuous change into the type of model of the dynamics of institutions and culture analyzed in Bisin and Verdier (2024).

Fourth, it would be interesting to model how different types of attributes—including whether they are abstract or specific, or free-standing or entangled, or whether they are different in other dimensions than those emphasized here—influence the variety of cultural configurations that can be formed, how these interplay with game-theoretic aspects, and how they shape the fluidity of cultures.

Finally, an important direction for expanding the reach of this conceptual framework is to tackle the evolution of culture sets. While English or Chinese culture sets have much in common with those several centuries ago, there are also important new elements added to these sets as a result of major invasions and migrations (e.g., the arrival of Anglo-Saxons and Normans in the British Isles) or historic political changes (e.g., mass democracy in Britain or communist rule in China). A natural approach would be to allow slow, evolutionary changes and very rare disruptions in culture sets, while there are faster and more endogenous responses in cultural configurations produced out of these culture sets.

Empirical Work: Our emphasis has been on empirical implications of our framework that differ from existing ones—such as the possibility of discontinuous change; the spillover of cultural change from one domain to another; the importance of cultural struggles; and the coexistence of persistence of cultural attributes together with cultural change. More careful empirical testing of the ideas proposed here is a challenging area for future research and here we simply share some possible strategies that may be fruitful. One direction is to build data sets for the analysis of cultural dynamics using historical documents, relying on a combination of natural language processing (NLP) methods and other approaches to classify texts. This strategy would exploit both the codification of important elements of cultural configurations in written documents and the potential links between language and modes of thinking (along the lines of work in linguistics using

phylogenic methods, such as Gray and Atkinson, 2003, and Mace, Holden and Shennan, 2005).²⁷ Using such data, one can investigate when cultural change accelerates and whether this takes the form of new arguments and innovations introduced by some prominent agents (elites or cultural entrepreneurs) spreading within the population. Although causality will be difficult to establish, both the timing and the way in which new and unusual argument and sentence structures become more popular in new written texts may provide one window into developing such an understanding.

Similar methods applied to detailed texts can be used to measure the degree of cultural heterogeneity within the population and how different cultural configurations spread over time. One interesting dimension within this context would be to investigate whether, during certain periods, different cultural configurations become inconsistent with each other, adding a new dimension of polarization to social and political equilibria.

In addition, new NLP methods can be used to measure to what extent different attributes are abstract vs. specific or whether collections of them are free-standing vs. entangled, as well as other relevant dimensions. For instance, attributes that significantly change their meaning over time can be classified as abstract, while collections of attributes that have and maintain the same or very similar links to each other can be counted as entangled. Using such measurements, one can obtain an assessment of the degree of fluidity of different cultures and relate the interplay between institutional and cultural change to these fluidity measures.

Finally, it would be worth investigating empirically and historically whether attributes and cultural configurations shape individuals' modes of thinking. Consider the Confucian case discussed in Section 4. As we have emphasized, the *Mandate of Heaven* configuration is not a political institution, but a cultural configuration providing justification to certain autocratic political arrangements. It may be achieving this legitimization by inculcating in people a particular way of thinking that makes autocracy more likely or even pervasive within society. How does it do that? Once such a mode of thinking is in place, how difficult is it for a new cultural configuration to arise? Does a mode of thinking persist even after elements of an alternative cultural configuration are in place? These questions would necessitate new empirical methods combining ideas from social psychology, sociology, political science and economics.

Appendix

In this Appendix, we explain of how a cultural configuration is formed from the (feasible) combinations of available attributes more formally.

Mathematically, we can express the main ideas of our conceptual framework using the language of networks or graph theory. As noted in the text, real-world cultures differ in terms of their attributes, but when two cultures have non-overlapping attributes, they cannot be ranked easily

²⁷One creative example of this type of work in economics is Michalopoulos and Xue (2021).

in terms of their flexibility. For this reason, in this Appendix, we focus on two *cultures*, C and C' that have the same *attributes*, given by the set A (the set A is also the set of nodes or vertices of a graph, as shown in Figure 1).²⁸

These two cultures may have different culture sets, because they have different feasible connections between these attributes. The set of all possible edges of these two cultures is E (where $|E| = \frac{|A| \cdot (|A|-1)}{2}$), which is shown with the light gray connections in Figure 1. We denote the set of all possible graphs G that can be constructed from the attributes in the set A (given the number of all possible edges $|E|$, the number of feasible graphs is $|G| = 2^{|E|}$).

The *culture set* (of either C or C') is given by the set of attributes A and the set of feasible graphs $G_f \subset G$ that can be constructed from these attributes. It is useful to have the culture set specify the set of feasible graphs (rather than, say, feasible edges) because the culture set may rule out some combinations of connections (as will be the case when we introduce the concept of entanglement below).

A *cultural configuration* can be represented by an element of the set of feasible graphs, that is $g \in G_f$. For example, in Figure 1, the set G_f consists of the blue and red configurations, while G includes all the distinct graphs (64 of them in total) that can be formed by the same four attributes. In this instance, only these two configurations in G_f are feasible cultural configurations.

This terminology also clarifies the distinction between a culture (together with its culture set) and a cultural configuration: the culture set defines G_f , while a cultural configuration is an element g of G_f .

Using this notation we can next define a partial order over the set of cultures in terms of fluidity. Culture C is *more fluid* than culture C' if $G_f^{C'} \subset G_f^C$. An extreme hardwired culture has, by definition, a culture set that allows only a single cultural configuration, and thus cannot be more fluid than any other culture. This definition clarifies that cultures with distinct attributes cannot be ranked in terms of fluidity.

To understand the relationship between cultural configurations and political institutions, we introduce the “political mapping” $\pi : G \rightrightarrows P$ that specifies how any possible cultural configuration translates into a political equilibrium (represented by elements of the set P), and note that we write this as a correspondence, not a function, to allow for the possibility that a given cultural configuration may be consistent with multiple political institutions. We are also specifying the mapping π not just for feasible cultural configurations in the culture set G_f , but for all $g \in G$, since we want to compare the political implications of cultural configurations across two societies that may have different sets of feasible cultural configurations. As an example, consider the case where the set P contains three elements: democracy, denoted by p_D ; monarchy, p_M ; or theocracy,

²⁸We could allow the attributes of one culture, say C , to be a superset of the attributes of another culture, C' , which can still be consistent with C being more fluid than C' . We do not do this in order to keep the notation simpler.

p_T . Clearly, if culture C is more fluid than culture C' according to our definition (i.e., $G_f^{C'} \subset G_f^C$) and the mapping π is bijective, then we also have $\pi(G_f^{C'}) \subset \pi(G_f^C)$, where $\pi(G')$ is defined as the set of all political institutions supported by the cultural configurations in the set G' . Hence, $\pi(G_f^{C'}) \subset \pi(G_f^C)$ means that the set of cultural configurations that can be supported with culture C' is a subset of those that can be supported under C .²⁹ For instance, we may have a situation in which $\{p_D, p_M, p_T\} \in \pi(G_f^C)$, while $\pi(G_f^{C'})$ only includes p_T . In other words, a more fluid culture tends to generate justifications for and allow the emergence of a richer set of political institutions.³⁰ This also explains why discontinuous cultural change is more common when a culture is more fluid: when only one or a few political arrangements can be supported by a culture set, a discontinuous switch becomes less likely.

We now use this notation to clarify how abstract vs. specific attributes and entangled vs. free-standing collections of attributes may matter. First consider entanglement. Entangled attributes travel together and thus reduce the set of feasible connections. To express this notion formally, let us write $aa' \in g$ to denote the link between nodes a and a' being present in graph g . Then, a subset \bar{A} of the set of cultural attributes A is *entangled* if for any two attributes of this set, a and a' , any other attribute $a'' \in A$ and a feasible graph $g \in G_f$, $aa'' \in g$ implies $a'a'' \in g$. In other words, a link between an element, here a , of an entangled collection of attributes and another attribute a'' can only be present if there also exists a link between any other element, here a' , of that entangled collection and the attribute a'' . We say that culture C' has *more entangled attributes than* culture C , if the set of entangled attributes of C' contains the set of entangled attributes of C .³¹ We say that a collection of attributes is *free-standing* if none of its subsets is entangled.

We next discuss how entanglement affects the fluidity of a culture. To do this, consider two cultures C and C' with the same set of attributes $A = \bar{A} \cup \tilde{A}$. Let us denote by $G_{f|\tilde{A}}^C$ the set of feasible subgraphs that can be produced with attributes in the set \tilde{A} under culture C . Suppose that \bar{A} is a collection of attributes that are free-standing under C , and suppose that we make this collection entangled under C' , and keep everything else the same (in particular, $G_{f|\bar{A}}^C = G_{f|\bar{A}}^{C'}$). This implies that for any $g \in G_f^C$ for which there exist $a \in \bar{A}$, $a' \in \bar{A}$ and $a'' \in A$ such that $aa'' \in g$ and $a'a'' \notin g$, we must have $g \notin G_f^{C'}$. In words, any cultural configuration that involves separate links

²⁹However, recall once more that our notion of fluidity is based on $G_f^{C'} \subset G_f^C$. The fact that $\pi(G_f^{C'}) \subset \pi(G_f^C)$ follows as an implication under the additional assumption that π is bijective.

³⁰As noted in the text, the degree of fluidity cannot be captured by the number of elements of the set of attributes or the number of feasible cultural configurations, since a culture may have many such configurations but they may have similar political implications. Our partial order circumvents this problem, because it only ranks two cultures when the set of cultural configurations of one of those is a superset of the other.

Our formalism also points out how a more general partial order can be developed directly in terms of the mapping π , ranking two cultures C and C' by whether $\pi(G_f^{C'}) \subset \pi(G_f^C)$, or the other way around, even when G_f^C and $G_f^{C'}$ are not nested. We do not pursue this route here to conserve space, though it is an interesting avenue to pursue in future work.

³¹Or in other words, if \bar{A} is an entangled collection under C , then there exists an entangled collection \bar{A}' such that $\bar{A} \subset \bar{A}'$. Note that this definition allows for the presence of multiple collections of entangled attributes.

for the two attributes a and a' is infeasible when these two attributes are entangled. Moreover, because everything else is the same between the two cultures, we have that any $g \in G_f^{C'}$ is also in G_f^C . Therefore, when culture C' has more entangled attributes than culture C , we have $G_f^{C'} \subset G_f^C$, i.e., C is more fluid than C' .

Next, let us turn to abstract vs. specific attributes. As explained in the text, abstract attributes allow more connections. To formalize this notion, let us denote the set of feasible connections between an attribute a and another set of attributes \tilde{A} under culture C by $E_{f|a\sim\tilde{A}}^C$. Now consider culture C with the set of attributes $A = \tilde{A} \cup \{a\}$, and another culture C' with the same set of attributes, but with a under C being *more abstract than* a under C' . Mathematically, this means $E_{f|a\sim\tilde{A}}^{C'} \subset E_{f|a\sim\tilde{A}}^C$, or in other words, the set of feasible connections between a and \tilde{A} under culture C , $E_{f|a\sim\tilde{A}}^C$, is a superset of the set of feasible connections between a and \tilde{A} under culture C' , $E_{f|a\sim\tilde{A}}^{C'}$.

We next discuss how abstract attributes affect the fluidity of a culture. For this purpose, we introduce one final piece of notation. Let the set of attributes of culture C be $A = \tilde{A} \cup \{a\}$. Then, for a graph $g \in G_f^C$ and subgraph $g'' \in G_{f|\tilde{A}}^C$, we write $g = ag''$ if there exists $a'' \in g''$ such that $aa'' \in g$. This means that there is a link between attribute a and one of the nodes in subgraph g'' , or in other words, the feasible cultural configuration g is formed by connecting attribute a to subgraph g'' (which could be a subcomponent or just a node in g''). Again consider cultures C and C' , as described in the previous paragraph, and suppose again that a under C is more abstract than a under C' and this is the only difference between the two cultures, and in particular, $G_{f|\tilde{A}}^C = G_{f|\tilde{A}}^{C'}$. Now for any $g \in G_f^C$ that includes a link $aa'' \in E_{f|a\sim\tilde{A}}^C$ but $aa'' \notin E_{f|a\sim\tilde{A}}^{C'}$, we have that $g = ag'' \notin G_f^{C'}$. In other words, cultural configuration g is feasible under C , but not under C' . Moreover, because everything else is being held fixed between the two cultures, for any $g = ag'' \in G_f^{C'}$, we also have $g = ag'' \in G_f^C$ since $E_{f|a\sim\tilde{A}}^{C'} \subset E_{f|a\sim\tilde{A}}^C$. This implies that $G_f^{C'} \subset G_f^C$ and thus C is more fluid than C' .

We next discuss the implications for economic arrangements. In this case, it is useful to introduce an underlying state of nature denoted by $\sigma \in \Sigma$. Denote economic arrangements by x , so that we have a mapping $\xi : G \times \mathcal{C} \times \Sigma \rightrightarrows X$ specifying which economic arrangements are feasible given the set of feasible cultural configurations G , the entire set of allowed culture sets \mathcal{C} , and the underlying states of nature Σ (this mapping is again written as a correspondence to allow for the possibility that a cultural configuration support multiple economic arrangements). Suppose that we can summarize economic success, for instance, GDP or economic growth, with a function $Y(x, C, \sigma)$ —depending on economic arrangement x , the full culture set C and the underlying state of nature σ . One reason why Y may depend on the entire culture set is that the degree of heterogeneity in society, determined by C , may impact coordination. For simplicity, suppose throughout this discussion that, among the available options, the output-maximizing economic arrangement will be chosen. Suppose also that the output-maximizing economic arrangement is $x = x^*(\sigma)$ when

the underlying state is σ , which is assumed to be independent of the exact cultural configuration and culture set (this is for simplicity, and we could easily allow for the output-maximizing economic arrangement to be culture-specific). A key question is whether $x^*(\sigma) \in \xi(G_f^C, C, \sigma)$ for the relevant state σ . An interesting situation is one where a more hardwired culture may be successful initially (for example, because it allows better coordination), but then leads to worse economic performance later (because it cannot adapt to changing circumstances). Suppose that C is more fluid (less hardwired) than C' , and also suppose that the output-maximizing economic arrangement is feasible under both culture sets initially: $x^*(\sigma) \in \xi(G_f^C, C, \sigma)$ and $x^*(\sigma) \in \xi(G_f^{C'}, C', \sigma)$ for the initial state of nature σ . Suppose also that $Y(x, C, \sigma) < Y(x, C', \sigma)$, meaning that when the same economic arrangement is chosen, the less fluid (more hardwired) culture generates more output because of better coordination. In this case, provided that $x^*(\sigma)$ is chosen initially under both cultures, the more hardwired culture C' will start doing better economically, capturing the possibility of early success for more hardwired cultures. But then suppose that the underlying state changes from σ to $\tilde{\sigma}$, and that $x^*(\tilde{\sigma}) \in \xi(G_f^C, C, \tilde{\sigma})$ but $x^*(\tilde{\sigma}) \notin \xi(G_f^{C'}, C', \tilde{\sigma})$ —meaning that the new output-maximizing economic arrangement $x^*(\tilde{\sigma})$ is only feasible under the more fluid culture C . In this situation, the more hardwired culture C' will lead to an economic arrangement different than the output-maximizing one $x^*(\tilde{\sigma})$. Suppose also that $Y(x^*(\tilde{\sigma}), C, \tilde{\sigma}) > Y(\tilde{x}, C', \tilde{\sigma})$ for any $\tilde{x} \in \xi(G_f^{C'}, C', \tilde{\sigma})$ (meaning that failure to choose the right economic arrangement is more important than the coordination benefits of the more hardwired culture under any of its feasible cultural configurations). Then the more hardwired culture will fall behind after the change in the underlying state.

Finally, we reiterate a point we made in footnote 14: we are abstracting from the key issue of who makes decisions about connecting different attributes and thus shapes the evolution of cultural configurations. We are also not specifying strategies relevant for change in cultural configurations in this setting. Any fully-specified theory of cultural change will have to enumerate different agents' strategies, how these strategies interact (e.g., learning and the diffusion of ideas in society) and the manner in which these behaviors map into changes in cultural configurations.

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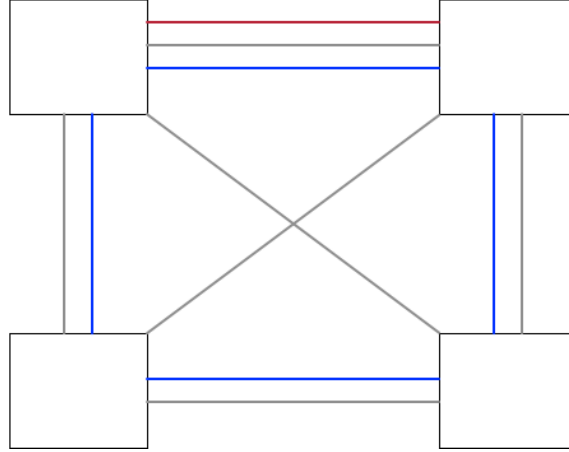


Figure 1: Attributes, connections and cultural configurations. In this graph, there are four attributes. The set of all possible connections is shown in gray. Note that for clarity we show possible connections (there are in total six possible connections between four attributes), rather than all possible configurations (there are 64 possible distinct configurations). Not all of the possible configurations may be feasible in a culture set, however. As an illustration, the figure also shows a culture set consisting of two feasible cultural configurations (in blue and red) based on these attributes.

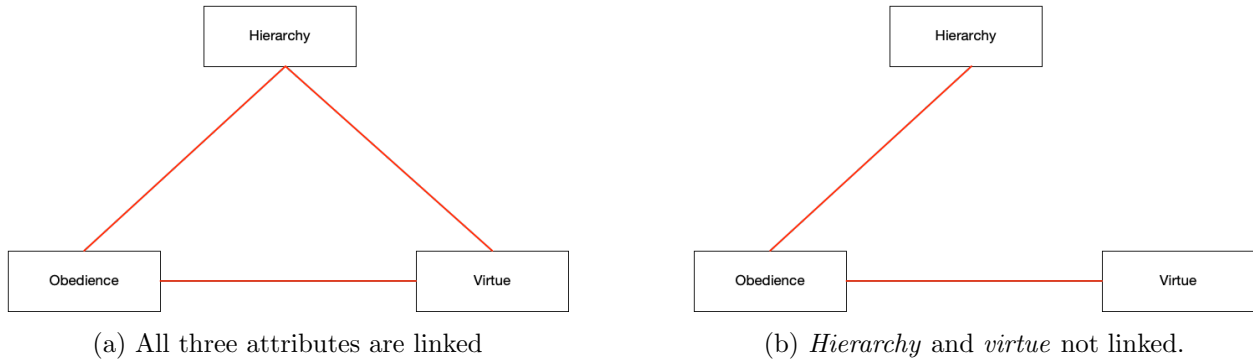


Figure 2: When *hierarchy* and *virtue* attributes are no longer linked in Panel (b), this changes both the cultural configuration and the meaning of *hierarchy* relative to Panel (a).

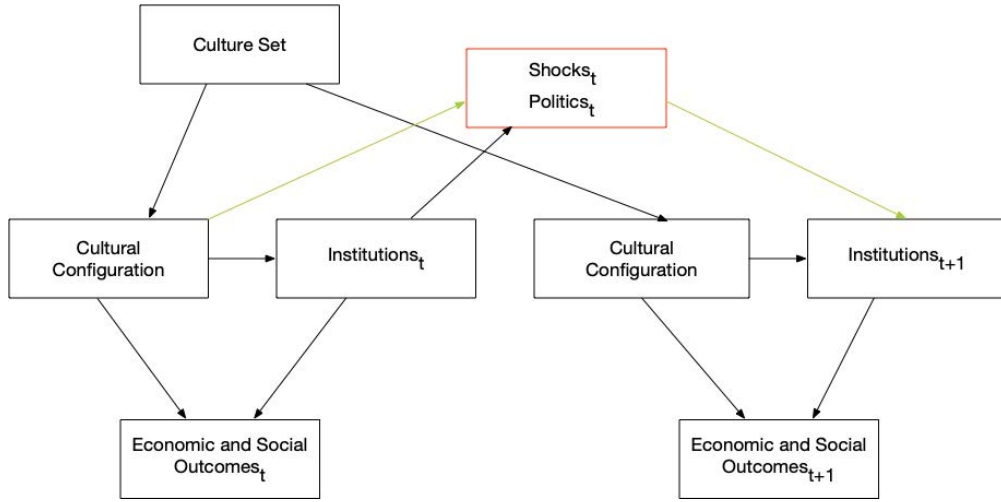


Figure 3: Culture-institution interactions for an extreme hardwired culture. Institutions and politics (and shocks) have no effect on cultural configurations.

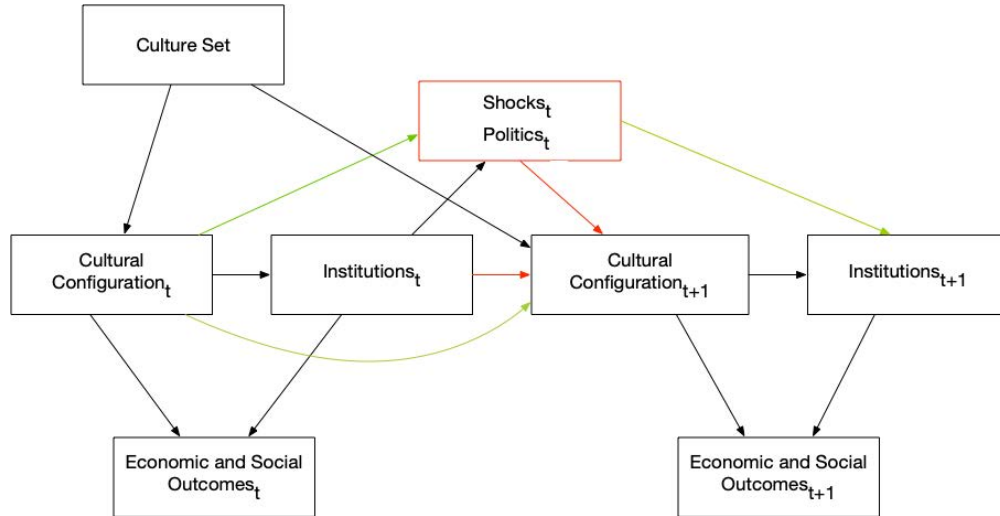
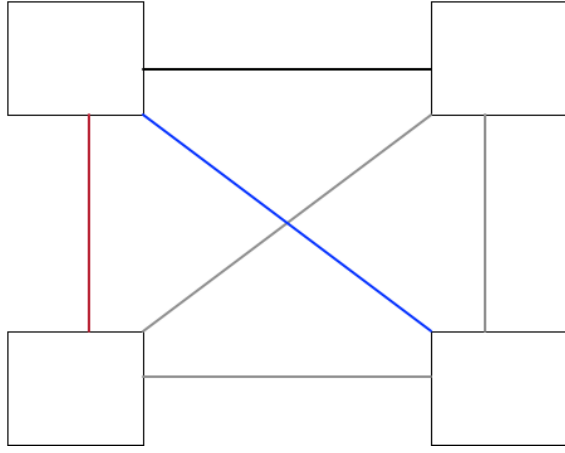
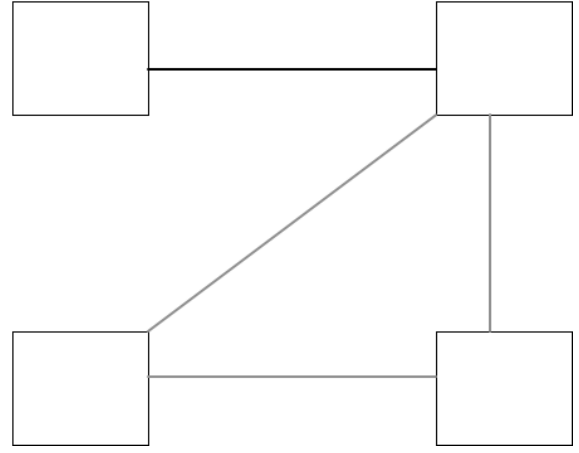


Figure 4: Culture-institutions interactions for a more fluid culture. Now institutions, politics and shocks also affect cultural configurations (and these new possibilities are shown by the red arrows). Additionally, past cultural configurations can affect the current cultural configuration as well (shown by the green arrow).

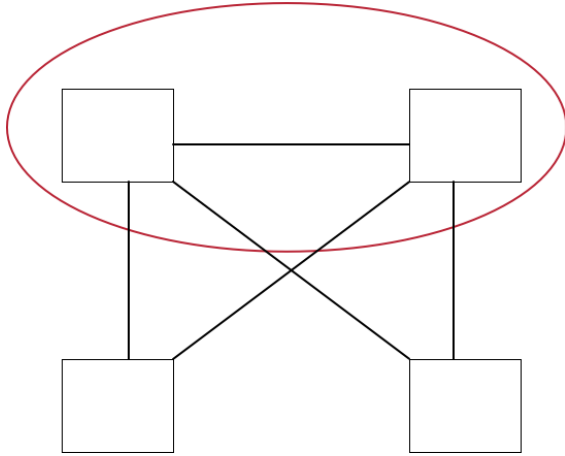


(a) The top left attribute is abstract

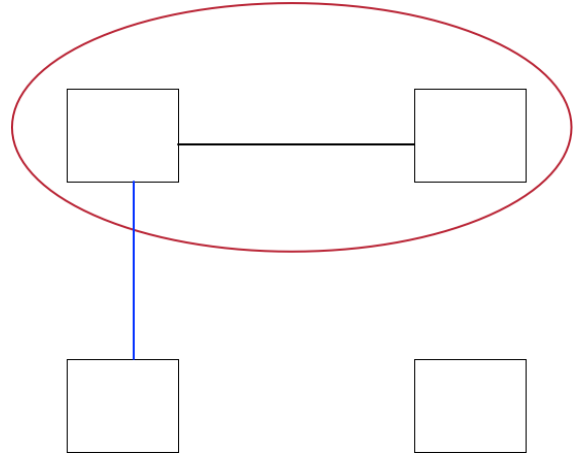


(b) The top left attribute is specific

Figure 5: Panel (a) depicts the case where the top-left attribute is abstract and can be linked to all three other attributes (these links are shown in different colors, red, blue and black, to highlight that they are feasible links but need not all be part of a given cultural configuration). We also show in lighter gray the feasible connections between the other three attributes. Panel (b) shows the alternative case in which the top-left attribute is specific, and can only be linked to one other attribute.



(a) This pattern is allowed when the top two attributes are entangled



(b) This pattern is **disallowed** when the top two attributes are entangled

Figure 6: The top two attributes are entangled, and thus must have the same connections. Panel (a) depicts a feasible configuration, where these two attributes have exactly the same connections. Panel (b) shows a configuration that is **disallowed**, because the two top (entangled) attributes have different connections.

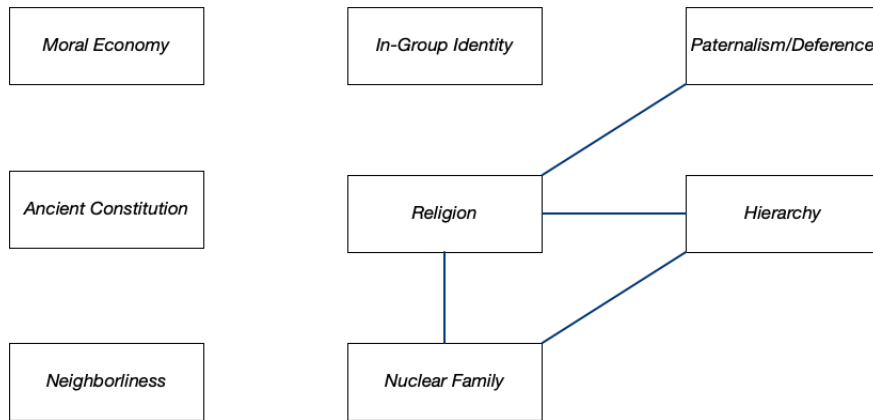


Figure 7: This figure lists some of the key attributes in the English culture set and shows how they may generate a cultural configuration, we call the *Divine Right of Kings*, which legitimizes absolutist rule.

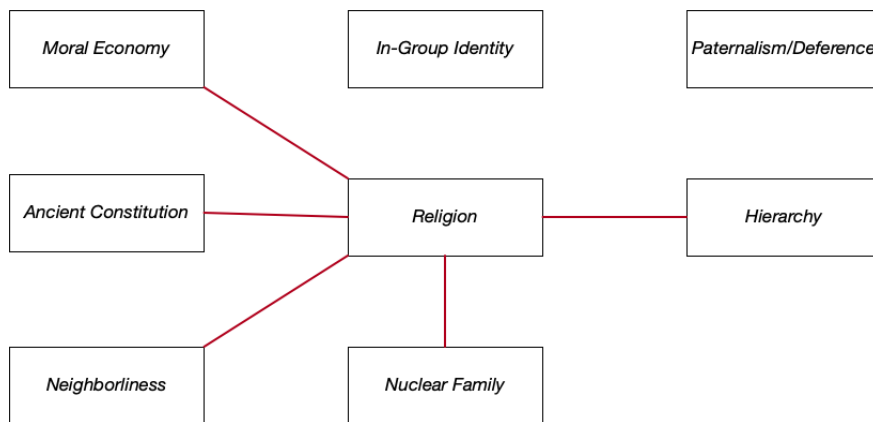


Figure 8: This figure shows how the same key attributes in the English culture set may generate a cultural configuration legitimizing *Popular Sovereignty* and democratic institutions.

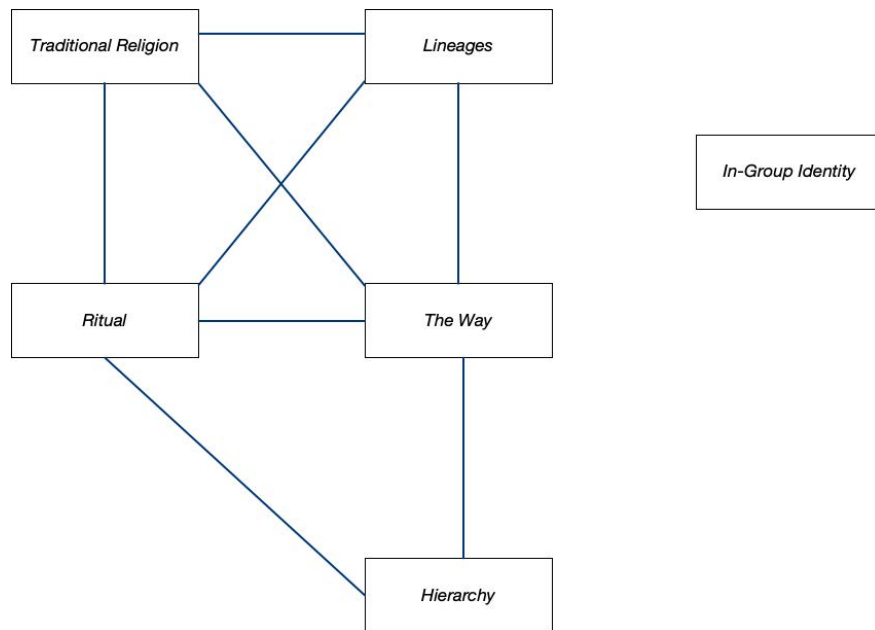


Figure 9: This figure lists some of the key attributes in the Chinese culture set and shows how they may generate a cultural configuration, the *Mandate of Heaven*, legitimizing absolutist imperial rule. Because *The Way* and *rituals* are entangled, they have the same connections.

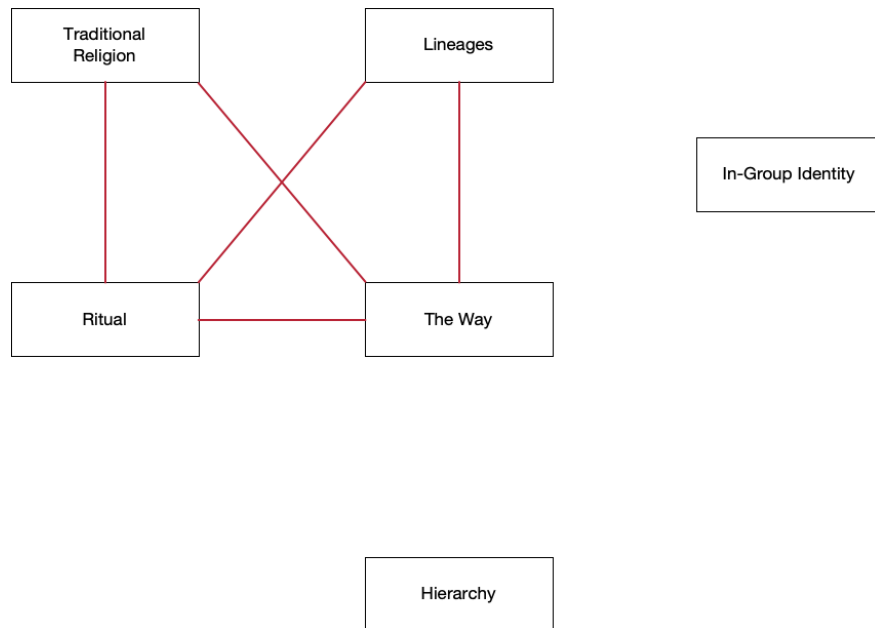


Figure 10: This figure shows how the same key attributes in the Chinese culture set may generate a cultural configuration, which we call *Confucian democracy*, supporting democratic participation. Because *The Way* and *rituals* are entangled, they have the same connections.