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Struggling over the Boundaries of Belonging: A Formal Model of Nation Building, Ethnic Closure, and Populism[1]

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This article explores the conditions under which political modernization leads to nation building, to the politicization of ethnic cleavages, or to populism by modeling these three outcomes as more or less encompassing exchange relationships between state elites, counterelites, and the population. Actors seek coalitions that grant them the most advantageous exchange of taxation against public goods and of military support against political participation. Modeling historical data on the distribution of these resources in France and the Ottoman Empire from 1500 to 1900 shows that nation building results from strong state centralization and well-established civil societies; ethnic closure, from weak state capacity and civil societies; and populism, from medium centralization and weak civil societies. The results are consistent with French and Ottoman political histories of the 18th and 19th centuries.

The Western nation-state is based on a new form of drawing political boundaries, replacing the horizontal strata of agricultural empires with the vertical division between various national communities and their respective states. In many modernizing states in the global South, however,

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ethnic communities, rather than the more encompassing national category, became the focus of political loyalty and popular identification, while the populist alliance between elites and masses against the oligarchic enemies of the nation has characterized the political histories of many countries in Latin America and beyond. All three trajectories of political modernization lead to a (more or less encompassing) alliance between political elites and segments of the population, in contrast to the premodern polities in which the relationship between political elites and the rest of the population was mostly based on coercion and resource extraction.

How can we understand the logic of these different trajectories of political modernization? We propose an empirically calibrated, formal model of how different systems of political alliance and identification emerge. These systems result from a struggle between actors endowed with different resources and unequal power who seek to enter into an exchange relationship with some actors while excluding others from their alliance system. Basing its assumptions on carefully researched data from France and the Ottoman Empire, we then identify the historical conditions under which nations, ethnic groups, or populism results from these struggles.

In line with the comparative historical sociology of nation-state formation, we focus on three different aspects of the process of political modernization and assess how they affect which actors ally and identify with each other. First, central state elites were more or less able to establish direct rule and to monopolize the political decision-making process (Hechter 2000), control over taxation (Tilly 1975), and the provision of public goods (Wimmer 2002; the state centralization aspect). Second, the population at large was more or less mobilized in military and political terms: It played a more or less important role in the rulers' armies (Lachmann 2011), and it was more or less aware of, interested in, and indeed involved in political matters of the state rather than just local communities (Mann 1995; the mass mobilization aspect). Third, political modernization also has an organizational aspect, changing the nature of ties between members of the population at large and between these and political elites.

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The emergence of civil society organizations—of trade unions, reading circles, professional associations, and the like—represents a crucial development on which comparative historical research has focused in the past.

The model shows that encompassing systems of alliances and identities (or nation building for short) were most likely to emerge in highly centralized states as well as when dense networks of civil society organizations had emerged to provide a basis for mobilizing political support independent of degrees of cultural similarity between actors. Under these conditions, a new relationship between state elites and the nonelite segments of the population evolved, a new social contract that institutionalized the exchange of political participation against taxation and of public goods against military support. Elites and masses then identified with each other over time and defined and perceived themselves as members of an encompassing national family worthy to defend and to commit to, thus completing the process of nation building.

In less centralized states, no such encompassing exchange system could emerge. The central elites disposed of only enough decision-making power and public goods to ally themselves with their own ethnic constituencies. The counterelite thus had the opportunity to do the same with their ethnic followers, who preferred an exclusive alliance with these still powerful ethnic elites over the promise of national solidarity that state elites could not keep. This tendency toward ethnic segmentation of alliances and identities was reinforced when civil society organizations were only weakly developed and actors thus relied on cultural commonality to stabilize their alliance networks. Our analysis also demonstrates, however, that such ethnic closure emerged even when actors either did not care about matters of cultural commonality at all or did care but found themselves culturally closer to their class peers rather than their ethnic brethren.

Finally, populism resulted from a situation in between these two trajectories of political modernization. The state elite was strong and resourceful enough to offer an alliance attractive for the entire population, irrespective of ethnic divisions. But they preferred to exclude the counterelite, which remained an effective competitor for the population's support and loyalty—in contrast to the nation-building scenario, in which the counterelite no longer controlled enough decision-making power or public goods to compete with state elites. Populism becomes all the more likely the more the political and military mobilization of the masses had proceeded because this increased elite competition over the political loyalty and military support of the masses and thus provided further incentives for state elites to exclude other elite factions from the alliance system.

Nation building, ethnic closure, and populism thus represent three dif-

ferent equilibrium outcomes of the process of political modernization. By identifying the conditions under which history travels down one or the other of these three paths of political development, this article shows that a precise specification of actor-based, "robust" mechanisms (Tilly 2001) on which sociology has increasingly come to rely can deepen our understanding of macrohistorical processes as well. Overall, the article helps to illuminate one of the more interesting puzzles posed by modern history: why the 19th and 20th centuries have been characterized by ethnic politics, populist mobilizations, and national solidarity rather than politics, mobilizations, and solidarities based on social class, as Karl Marx had predicted during the heydays of the industrial revolution.

FIVE CONTRIBUTIONS

This analysis offers five contributions to our understanding of political modernization and the formation of collective identities. First, it integrates a literature that remains divided along disciplinary lines and according to geographic focus. While sociological work on the rise of nationalism and the nation-state deals mostly with Europe (see the overviews in Smith [1998] and Ozkirimli [2000]), a long line of work in comparative politics has sought to explain how ethnic pluralism has been politicized in the global South in the course of political development, often leading to the ethnic segmentation of the national political arena (Furnivall 1939; Despres 1975; Young 1976; Rothschild 1981). Finally, Latin Americanists have discussed the reasons for and conditions under which populist forms of nationalism have emerged repeatedly in the history of many countries on the continent (Ionescu and Gellner 1969; Laclau 1977; Canovan 1981). Others have extended this analysis to other regions, from late 19th-century Russia to contemporary Africa (for references, see Jansen [2011, p. 78]).

We suggest seeing nationalism, the politicization of ethnicity, and populism as different outcomes of a single process of political modernization during which political alliances and collective identities are reorganized along new lines of inclusion and exclusion. Exploring the conditions under which these three different outcomes will emerge, we contribute to a theoretical integration and empirical conversation between studies of Western nation building, ethnic pluralism in the South, and Latin American populism.

Second, these insights are gained through an innovative use of the tools of formal modeling. Rather than conceiving of isolated actors who choose between various given identities, as in many formal models of nationalism and ethnicity, we seek to understand the formation of political alliances and identities as an interactive process of group formation and social

closure (see Weber [1922] 1968; Brubaker 1992; Wacquant 1997; Wimmer 2002). To achieve this, we combine an exchange-theoretic approach to preference formation with a game-theoretic model of strategic interaction. The exchange-theoretic part of the model explains which actors seek to exchange resources with which other actors and whom they would rather exclude from their coalition (Coleman 1990; Kalter 2000). We then use game theory to determine which overall alliance system emerges from the strategic interaction between actors with different such preferences. Going beyond the purely instrumentalist approach that characterizes most rational choice approaches in historical sociology (Kiser and Hechter 1998, p. 799), we also build an additional component into the model by letting actors consider with whom they can identify on the basis of cultural similarity when choosing alliance partners.

Third, modeling political alliances and identities as the outcome of a (however partial and conflictual) agreement allows reconciling explanations that focus on the actions and strategies of political elites with those that emphasize the importance of mass sentiment. Elite-focused models (Brass 1979; Tilly 1994; Gagnon 2006) have difficulty explaining why even well-crafted historical narratives or impressive public rituals (Hobsbawm and Ranger 1983) sometimes fail to convince the population at large to shift their focus of loyalty and identity to the nation or ethnic group (see, e.g., Anonymous 1989; Smith 1990; Kirschbaum 1993). "Bottom-up" theories attribute the power of popular ethnic or national sentiment to existing folk myths, to established symbols and legends (Smith 1986), to mass resentment against alien rule (Hechter 2000), or to the spread of literacy that makes it possible to imagine national communities (Anderson 1991). But they struggle to explain why many myths, symbols, and legends are forgotten; why only few ethnicities find the political elites necessary to form effective nationalist movements even when ruled by ethnic others; [2] and why many nationalisms were supported by populations who spoke different tongues.

We overcome this division of the literature by conceiving of nation building, the politicization of ethnicity, and populism as the result of a contentious and conflictual negotiation that involves both elites and masses and leads to a more or less inclusive alliance between them. More specifically, we argue that the population at large embraces national, ethnic, or populist identities only if this offers them a favorable exchange relationship with elites. Nation building, ethnic closure, and populism require more than popular sentiment, on the other hand, because they

[2] For examples of nonpoliticized ethnicities, see Young (1976, pp. 105–10), Winnifrith (1993), and Wimmer (1995, pp. 219–29).

need to offer elites an alliance that serves their varying political ends as well.[3]

Fourth, the article contributes to the debate on formal modeling in historical sociology by exploring the middle ground between micronarratives and macrostructural approaches. Departing from the analytic narratives approach (Bates et al. 1998), we do not account for specific chains of events in particular societies. Instead, we attempt to model the shift from one macrosocietal equilibrium to another that takes place over the *longue durée* (see Carpenter 2000). We are thus considering how political modernization shifted the balance of interests and power in favor of new modes of political alliance and identity, without maintaining that our model captures the different event chains, the conjectures of processes, and the historical reversal and contingencies through which these transformations were eventually achieved. In other words, we do not model the forces that steer the daily event chains into a certain direction, but rather the equilibria that lock in these outcomes once, for a variety of reasons exogenous to the model, they come about.

On the other hand, our formal approach is better able than most macrostructural accounts to explore the key mechanisms through which modernization brings about a transformation of political alliances and identities. Macrostructural accounts argue that industrialization is functionally related to nation building (Gellner 1983), ethnic politics to unequal modernization (Horowitz 1985), or populist nationalism to a certain type of industrialization (Cardoso and Helwege 1991), without systematically showing that the mechanisms postulated can indeed logically and empirically bring about the observed outcomes. By contrast, our formal model follows the program of an analytical sociology (Hedström and Bearman 2009) and fully specifies all key mechanisms and assumptions.

Fifth, the article makes some methodological advances as well. The specific assumptions regarding the distribution of resources over actors are not based on plausibility arguments alone, as in much of the rational choice literature. Indeed, one of the most frequently raised criticisms against that literature is that model builders often play around with input parameters until the actually observed historical outcome is produced (the problem of "post-hocery"; see Skocpol 1994, p. 325; see also Elster 2000, pp. 686–87; Parikh 2000). The model introduced here will operate with carefully researched historical data on the distribution of taxing capabilities, public goods provision, and military support in France (1300–1900)

[3] Treating collective identities as a negotiated accomplishment extends the line of nationalism studies pioneered by Hroch ([1969] 2000) and pursued by Mann (1993, chap. 4) and Wimmer (2002).

and the Ottoman Empire (1500–1900).[4] These data help to ground the model in empirical reality and prevent us from simply assuming the parameter values that will generate the hypothesized outcomes. Online appendix A documents this extensive historical research.

Such calibration is not possible for the preferences of actors (for this problem in general, see Kiser and Hechter [1998]). We do believe, however, that it is necessary not simply to deduce preferences from general theoretical propositions but to show their plausibility for concrete, historically situated actors (in line with Somers [1998], Parikh [2000], Skocpol [2000], and the "critical realism" of Bhaskar [1979]). Without interview or survey data, this is best done by paying attention to revealed preferences through assuming—according to a weak version of standard rationality assumptions—that actors did X because they wanted to achieve Y, which is often the consequence of doing X (see Bates et al. 2000, p. 698). Our assumptions about preferences are based on such historically grounded plausibility arguments that we derive from the literature on France and the Ottoman Empire.

These assumptions obviously involve a considerable degree of uncertainty. We thus go beyond standard practices in the formal modeling literature and perform a cutting-edge sensitivity analysis (Saltelli et al. 2004, 2008; Campolongo, Cariboni, and Saltelli 2007). As online appendix C documents, this establishes the robustness of our main findings against reasonable variation in parameter values.

The next section describes the model architecture. We then introduce the empirical data used to calibrate the model and specify hypotheses derived from the comparative historical literature. The following three sections present results and show, through a detailed analysis of actors' preferences and the strategic interactions between them, how these results were brought about. The next section demonstrates that this model meaningfully relates to the histories of nation building in France and of the ethnopolitical fragmentation of the Ottoman Empire. The final section concludes with an outlook on how the model architecture can be modified to study other aspects of the politics of nation building and ethnic closure.

[4] We choose these two societies since they are sufficiently removed from each other to rule out any direct influence on each other's development (at least until the 19th century) and because they are considered in the comparative literature to represent starkly different examples of the process of modern state building (Barkey 1991). France is one of the first states in which nationalist ideologies emerged endogenously and is considered a prime example of successful nation building. The Ottoman Empire, by contrast, is one of the very earliest examples of a multiethnic empire from which ethnonationalist secessionist movements emerged (of Greeks, Serbs, Armenians, etc.). These two societies thus represent ideal cases for the analysis of the endogenous political forces behind the politicization of ethnicity and the formation of national communities that form the core of our analysis.

A GAME-THEORETIC EXCHANGE MODEL

Actors and Alliance Systems

The model architecture is based on a simple two-dimensional social structure. On a horizontal dimension, we distinguish between actors according to the amount of power they hold, that is, between political elites and masses, similar to the well-known polity model of Tilly (1978). We thus do not differentiate, as in some Weberian and Marxian traditions in sociology, between economic, political, and cultural elites, but focus exclusively on the political domain—in line with the thematic focus of this article.

On a vertical dimension, we introduce a center-periphery cleavage by distinguishing between a central and a peripheral segment of the population. This division between core and peripheral regions and populations is a universal feature of states (Gerring et al. 2011), especially of premodern states that relied on indirect rule through peripheral elites to control the peripheral regions of the kingdom or empire.[5] The division between core and periphery often goes together with a marked differentiation of cultural traits and often with a corresponding ethnic cleavage or at least strong regional identities. This vertical, ethnic or regional division is thus orthogonal to the horizontal division between elites and masses.

We therefore arrive at four types of actors: the *central elite* (cE), the *peripheral elite* (pE), the *central masses* (cM), and the *peripheral masses* (pM).[6] To illustrate, it is useful to briefly envisage real-world exemplars of these actors in the context of the two historical cases that we will use for empirical calibration. The central elites (cE) represent those groups in control of the central state. In France, this refers to the king and his extended family and entourage, the royal house, until the Revolution, and to the Parisian political elite thereafter. The central elite in the Ottoman

[5] For empires, see Howe (2002, pp. 14–16) and Lieven (2000, chap. 2), who also discusses the Chinese exception; for elite divisions in premodern centralized bureaucratic polities, including postfeudal Europe, see Eisenstadt (1963); on indirect rule within center-periphery relations in premodern polities, see Hechter (2000).

[6] Note that in the model introduced below, the two masses do not constitute groups with the ability to act collectively, but merely represent placeholders for different sets of individuals who face the same objective social conditions (i.e., who share the same position in the distributions of resources, interests, and cultural traits). As in similar game-theoretic models (e.g., Kiser and Linton 2002; Gehlbach 2006), this means that we do not have to presuppose some kind of collective identity or capacity to act. Also note that this general framework can in principle be adapted to any number of actors, although a sufficiently realistic model of nation building can be already constructed with these four types of actors. Robustness analyses showed that increasing the number of peripheral elites and masses makes inclusionary coalitions less likely (in line with Kalter [2000, p. 437]) but otherwise produced substantially similar results.

Empire consisted of the sultan and his government, including the slave administrators and elite soldiers that formed the inner palace.

The peripheral elite is composed of all those who exert political authority in the state but who are not a member of the central elite, thus the provincial French nobility outside of Versailles under the *ancien régime* and the provincial political elites after 1789 and, in the Ottoman Empire, the provincial *timar* holders and governors, including the leadership of Christian *millets* that held official state functions.

The masses consist of the inhabitants of the towns and villages, including their notables and local leaders, who are not directly involved in the governance of the state: commoners and nonfunctionaries in France and, in the Ottoman Empire, all those who are not members of the military-administrative caste. The differentiation between central and peripheral masses might correspond in the case of France to the division between Paris and the provinces (or more broadly but relatedly between speakers of *langues d'oïl* vs. *langue d'oc*) and in the Ottoman Empire to the provinces with Muslim majorities versus the largely Christian Rumelia or, after the loss of many of the European provinces in the 19th century, the Arabic-speaking provinces versus those with Turkish-speaking majorities.

These four actors can enter into various exchange and alliance relationships. Each alliance system assigns the four actors to one of a series of mutually exclusive groups within which resources are exchanged. Logically, they can combine into 15 possible alliance systems. Figure 1 contains those alliance patterns that are the most interesting from our point of view because they come close to empirically observable patterns. We assume that actors who enter into an alliance with each other will also develop a shared identity over time.[7] This assumption is grounded in a long line of research in social psychology that stretches from Tajfel (1981) to Kurzban, Tooby, and Cosmides (2001), who have shown how coalitional alliances determine identity patterns and that newly formed coalitions can even trump over established modes of categorization such as race in the United States.

An *estate order* separates elites and masses, corresponding to Gellner's (1983) classic description of the social order of agrarian empires. We represent this alliance system as {cE, pE}{cM, pM}. Although central and peripheral actors can be distinguished from an observer's point of view, the politically salient boundary here runs along the horizontal divide,

[7] Similarly, Posner (2005, p. 3) conceives "ethnic politics . . . in terms of the politics of coalition building and ethnic identity choice . . . in terms of the quest to gain membership in the coalition that will be most politically and economically useful."

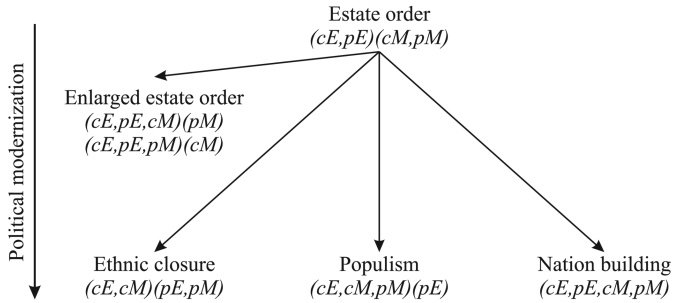

FIG. 1.—Types of alliance systems in modernizing states. cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses.

creating a single elite and a single mass.[8] In a more inclusive variation of such elite rule, one of the masses is included in the alliance system. An example for such an *enlarged estate order* is post-Napoleonic France under the Orléanists, when the younger Bourbon king ruled a constitutional monarchy that granted full voting and citizenship rights to small segments of the population in and around Paris.

In contrast to these two essentially premodern alliance patterns, the three remaining groupings in figure 1 represent varieties of modern systems of alliance and identity. They are all structured around at least one alliance between elites and masses, thus replacing a relationship between elites and masses characterized primarily by force and resource extraction (as in the estate order) with one that is relying more on consent, mutually beneficial exchange, and thus reciprocal identification (for a similar analysis, see Levi [1997]).

Ethnic closure describes an exchange system, and thus social identities, that is segmented along ethnic lines such that the central elites ally with the central masses and the peripheral elites with the peripheral masses. Such closure along ethnic rather than along national lines can be observed in a variety of contexts such as in the pre–Civil War era United States and many postcolonial states in the South in which political arenas and identities are thoroughly compartmentalized along ethnic lines (Horowitz 1985; Wimmer 2002).

In *populism*, the peripheral elite is excluded from the domain of ex-

[8] In our notation, the braces that separate different categories (e.g., between estates in {cE, pE}{cM, pM}) denote political salience. They thus show in which alliance group the four actors end up without implying that the center-periphery distinction was the most salient in all of these alliance systems, even if there might be plenty of political conflict between central elites (e.g., the king's house) and peripheral elites (the aristocracy) (see Eisenstadt 1963).

change and shared identity that encompasses all other actors. Best known are the Latin American cases (Roberts 1996; Weyland 1996), in which the state elite portrays itself as the defender of the entire population's interest against an exploitative (agrarian or industrial) oligarchy allied with the forces of imperialism. As we will see below, however, populism is not restricted to Latin America. The Bonapartism of the Second Empire and the ideology of Tanzimat reformers in the Ottoman Empire are other examples of this form of political organization and alliance. Note that in our understanding, populism represents not a particular rhetorical style or mode of popular mobilization (as in Jansen [2011]) but a specific structure of political alliances.

Finally, *nation building* corresponds to an exchange involving all four actors, thus the idea and institutionalized practice of solidarity among all elite and nonelite sections of the population. This represents the most inclusive alliance system, drawing the boundaries of belonging against nonnational others rather than against a particular segment of the domestic population (Brubaker 1992; Wimmer 2002). France during the Third Republic represents a classic example, as we will see further below.

In the following, we formally model key mechanisms through which political modernization leads to the emergence of these three varieties of modern alliance systems and identities. Starting from the estate order as the established alliance system (status quo) at time t_0, we analyze the conditions that support the institutionalization of ethnic closure, populism, or nation building at time t_1. The model has two parts: We first seek to understand which actors prefer to ally themselves with which other actors. This is derived through a modification of Coleman's well-known exchange model. The second, game-theoretic part of the model then determines how the various actors who have different preferences regarding the structure of alliances strategically negotiate with each other and arrive at a—more or less partial, more or less exclusionary—settlement regarding who is included in which exchange group.

The Model in a Nutshell

For readers who are not interested in the particulars of the model and who would like to directly move on to the hypotheses, we offer a brief summary of the main model features here. The exchange-theoretic part determines which actor prefers which of the possible alliance systems discussed above (nation building, ethnic closure, etc.). One therefore first needs to know who has what and who wants what: the distribution of resources over all actors as well as which actor shows how much interest in these resources. If many actors want the same resource and few actors have them, prices for these resources will be high (a simple market mech-

anism). If an actor already has a lot of what she wants, she will be less interested in additional amounts of that resource (a marginal utility assumption).

Actors can choose not only what to exchange but also with whom: They want to keep those who offer the same resources at arm's length (because competition depresses prices) and, on the other hand, to get what they want from as many sources as possible (because a supply monopoly increases prices). All these elements together then allow us to calculate if an actor would be better off than at present under the different possible alliance systems, such as ethnic closure, the national community, an estate order, and so forth. Actors prefer those exchange systems from which they gain the most, leading to a ranked order of preferences for all alliance systems for each individual actor.

Going beyond this purely utilitarian logic, we introduce cultural similarity as another element of how actors might evaluate different alliance systems. The cultural difference between each pair of actors is expressed as a number between 0 and 1. A value of 1 means that two actors do not share a single cultural trait in common and 0 that they share all cultural traits with each other. Each possible exchange system can be expressed in a similar way (0 if two actors ally with each other, 1 if they do not). Comparing these two sets of figures, one can calculate how well each possible alliance system fits onto the map of cultural similarities. Whether or not actors really care about such cultural similarity can change, and the model allows varying the relative weights given to the resource gain component and the cultural similarity component when actors rank different alliance systems.

The first part of the model thus determines which actors prefer which alliance system. Since actors are unequal in the kind and amount of resources they control and those they want, they will have different preferences (one actor prefers ethnic closure, others a national community, etc.). How then do they arrive at a settlement regarding who will finally exchange what and thus will end up identifying with whom? To answer this question, we use a simple game-theoretic setup: State elites first make a proposal (e.g., "let's all exchange with each other," or nation building); the peripheral elites then can make a counterproposal ("let's exchange between those who share the same ethnic background," or ethnic closure); the masses evaluate these proposals and decide whether to accept one of them or stick to the status quo. Actors who embrace the same proposal will then enter into an alliance with each other. All these alliances together then form the exchange system that will prevail in a society. In what follows, we describe the two parts of the model in more detail.

The Exchange Model in Detail

In line with recent work in political sociology that emphasizes the relational networks underlying processes of state formation and political modernization (see Gould 1995, 1996; Wimmer 2002; Ikegami 2005; Tilly 2006; Barkey 2008; Martin 2009), we model alliances as a series of resource exchanges that bind state elites and other actors together. We consider those economic and political resources that the comparative historical literature has identified as crucial for the development of the modern state (Tilly 1990; Mann 1993; Hechter 2000; Kiser and Linton 2001; Wimmer 2002):[9] taxation and public goods provision on the one hand and military support and political decision making on the other hand. Each of these resource dyads is symmetrical: Elites can offer access to public goods and services in exchange for the taxation of the masses. Masses can offer military support and loyalty in exchange for being granted political participation.

This exchange of resources is modeled using Coleman's (1990) "linear system of action." The basic elements of this exchange model are actors' interest in and control over resources: c_{ij} describes the control that actor i ($i = 1, \ldots, n$) exercises over resource j ($j = 1, \ldots, m$) and x_{ji} describes her interest in this resource. These parameters are arbitrarily scaled such that all actors' control over each resource sum to 1.0 and the interests of each actor sum to 1.0. Hence, an actor's control over a resource equals her share of control, relative to shares held by the other actors. Likewise, her interest in a resource is measured relative to her interest in the other resources. The initial distributions of interests in and control over resources can be summarized in a control matrix C and an interest matrix X.

The preferences of actor i are expressed by the Cobb-Douglas utility function

$$U_i^{\text{control}} = c_{i1}^{x_{1i}} \cdot c_{i2}^{x_{2i}} \cdot \cdots \cdot c_{im}^{x_{mi}}. \tag{1}$$

It implies the usual assumption that the marginal utility of a resource for an actor diminishes when all other resources at her disposal are held constant. The model also assumes that actors demand control over resources proportional to their interests in them, while taking into consid-

[9] Tilly (1990) and Kiser and Linton (2001) have laid most emphasis on taxation and the military aspect of modern state formation, Hechter (2000) underlined the centralization of political decision-making power, while Mann (1993) added the political mobilization of the population to the equation and Wimmer (2002) has pointed to the role of public goods, including policing, infrastructure, and welfare support. Our model also builds on and extends the work of Barzel and Kiser (2002), who have analyzed the exchange of voting rights (granted by the state) against consensual taxation for public works projects in early medieval France and England.

eration their prices and their own budget (see Coleman 1990, pp. 682–84).

The control over resource k exercised by an actor i *after exchange*, that is, in *equilibrium*, can be shown to equal

$$c_{ik}^{*} = \frac{x_{ki} b_i}{v_k}, \tag{2}$$

where v_k is the value or price of this resource and b_i denotes the actor's initial budget. Intuitively, this formula states that an actor i's control over resource k after the exchange will be higher the more she is interested in the resource (x_{ki}), the lower its price (v_k), and the more she has to offer in return (b_i).

The budget of each actor can be interpreted as an actor's *exchange power*. It is equal to the sum of her initial shares of control, each weighted with the price of the respective resource:

$$b_i = \sum_{j=1}^{m} v_j \cdot c_{ji} \quad \text{for all } i = 1, \ \ldots, \ n. \tag{3}$$

The *prices* of the resources derive from the distributions of interests and control. In equilibrium, they can be computed by solving the matrix equation

$$v = XCv; \tag{4}$$

that is, they equal the elements of the eigenvector v of the matrix XC (for the derivation, see Coleman [1990, pp. 682–84]).

Coleman's exchange model describes a simple logic of trading.[10] Those who are mutually more interested in the resources controlled by others than in their own will engage in exchanges until no further mutually beneficial exchange is possible. In general, all actors gain from the possibility of mutual exchanges. We extend and modify Coleman's exchange model in a crucial point, following Kalter (2000): Actors may also want to exclude others from the exchange system because their exchange power and thus their gains crucially depend on who exchanges resources with

[10] We adopt Coleman's model precisely because it allows for a simple representation of exchange systems from which the value of resources and the exchange power of actors can be determined. This analytical power rests on a number of simplifying assumptions that it shares with traditional market models (e.g., the possibility of a centralized exchange among all actors or the absence of externalities; see Coleman 1990). While it is crucial to relax some of these assumptions in other analyses, the task to model long-term historical processes calls for the high degree of abstraction found in Coleman's original model, not the least because this makes it easier to empirically calibrate the model given the scarcity of historical data.

whom.[11] In other words, the distribution of interests and control within an exchange system depend on the structure of alliances. The price that actors' can get for the resources they control is determined by who else is exchanging these very same resources with the same exchange partner. Therefore, actors not only consider what they want and at which prices they are willing to exchange resources; they also are concerned with whom to enter into an exchange relationship. In general, actors attempt to monopolize the supply of resources they offer by excluding competitors, and they try to demonopolize the demand for these resources by including as many potential buyers as possible.[12] The exchange model thus assumes that actors make an exclusive choice of alliance partners: When they have decided and agreed on with whom to ally themselves, they will exclude all others from this network of relationships. In other words, we model a process of monopolistic closure with drastic consequences for the structures of political exchanges and identities (Tilly 2006; Wimmer 2008).[13]

Adding Considerations of Cultural Similarity

So far, the model assumes that actors prefer an alliance that allows them to maximize their control over political and economic resources. However, it is not enough to focus exclusively on such instrumental interests, as the majority of rational choice models do (Elster 2000). Rather, a sufficiently realistic model should incorporate the insight that some boundaries and collective identities are more plausible than others in view of a given

[11] This article is the first to empirically apply Kalter's (2000) extension of Coleman's model. It involves a simple method to analyze situations in which actors split up into two or more subgroups with exchanges taking place only within these separated systems of exchange. Technically, one simply has to normalize the shares of control within each subgroup (Kalter 2000, p. 447). This is done by dividing the shares of control over a resource k by the sum of control that remains in the respective system of exchange. Aside from that, one can derive the equilibrium in the same way as before. To compare the equilibrium values of demand, supply, and utilities across exchange systems, one has to get rid of the normalization again by multiplying the equilibrium control values by the respective weighting factor (i.e., with the total share of control over the respective resource available in the subgroup).

[12] Note that expanding a group to incorporate an additional exchange partner can yield costs but also benefits to group members. Thus, we do not model social closure as a *zero-sum* game and therefore do not predict coalitions of minimum winning size as does Riker's (1962) classical work on coalitions in political science.

[13] Assuming total closure between groups of exchange partners is not to deny that individuals from different sides of a boundary engage in transactions in their everyday lives (such as in paternalistic and clientelistic social systems). However, we want to capture only exchanges that are institutionalized and involve major political and economic resources.

distribution of cultural traits over the population (Chandra and Boulet 2005).

We therefore assume that actors also consider the varying degrees to which possible systems of alliance map onto empirical distributions of traits such as religion, language, skin color, cultural dispositions, and the like (cf. the "diacritical markers" in Barth [1969]).[14] Why should correspondence between possible alliance systems and the trait distribution matter? The literature offers various suggestions (see Cornell 1996; McElreath, Boyd, and Richerson 2003; Hale 2004). We shall argue that actors care about the empirical correspondence between an alliance system and the landscape of cultural similarity and difference when civil society organizations are only weakly developed. This argument will be more fully developed below. We limit the discussion here to how we formally represent the correspondence between possible alliance systems and the trait distribution.

We assume a stable distribution of traits over actors. For simplicity, we express the empirical difference between each pair of actors as a number between 0 (no difference at all) and 1 (maximum possible difference).[15] This allows representing the empirical distribution of traits over actors as a vector *TD* in which each element corresponds to the dissimilarity between a pair of actors (for a similar approach, see Shayo [2009]). In the analysis that follows, we distinguish between two ideal-typical trait distributions. In one of them, dissimilarity runs along ethnic divides. In the other, class boundaries are marked by differences in cultural traits, as in the following example:

	cE|pE	cE|cM	cE|pM	pE|cM	pE|pM	cM|pM
TD =	(0.2	0.8	0.8	0.8	0.8	0.2)

We can now compare this structure of similarity with that of each possible alliance system. In an alliance system, two actors find themselves

[14] Agent-based models offer the most sophisticated formal approach to this aspect of group formation processes (Axelrod 1997; Lustick 2000). They start from two-dimensional grids inhabited by a high number of agents who are characterized by strings of cultural traits. In Cederman's (2002) artificial social world, e.g., actors in each grid choose the most likely neighboring actors as conationals as soon as the ideology of "nationalism" enters this world from the outside. Cultural difference and similarity therefore start to matter for the structure of political alliances and processes of cultural drift and assimilation come to an end. Since we operate in a simpler game-theoretic environment with far fewer actors, we adopt a more parsimonious but comparable specification of how cultural similarity influences social boundary making.

[15] Conceptually, this number should be thought of as expressing differences in averages between groups with respect to the relevant traits, so that empirical plausibility is judged on the basis of those group averages. Hence, we do not have to assume trait homogeneity within groups.

either on the same or on opposite sides of a boundary.[16] Hence, an alliance system can also be represented in the form of a vector whose elements correspond to pairs of actors indicating either the presence (1) or absence (0) of a boundary between them. We illustrate this with the example of an estate order:

	cE|pE	cE|cM	cE|pM	pE|cM	pE|pM	cM|pM
S =	(0	1	1	1	1	0)

We can now measure the correspondence between an exchange system and the trait distribution by simply aggregating the differences between the two vectors. Formally, we define the empirical correspondence $m(S_j)$ of an alliance system S_j as 1 minus the average of the absolute differences between all elements k of S_j and the elements k of the empirical distribution of traits:

$$m(S_j) = 1 - \left(\sum |S_j(1, k) - TD(1, k)|\right)/n, \tag{5}$$

where n denotes the number of columns of the vectors S_j and TD.[17]

We are now ready to fully specify actors' preferences over different exchange systems. Actors evaluate them with respect to the gains they would allow and with respect to how well they correspond to an observed distribution of cultural traits. The exchange gains that an actor i can expect from an alliance system S_j are equal to the difference $\Delta U_i^{\text{control}}(S_j)$ between her utility after exchange under this system and her utility after exchange under the established system of alliances. The second part of the utility function consists of the empirical correspondence $m(S_j)$, that is, the perceived match between the exchange system S_j and the empirical distribution of cultural traits across actors, weighted by U_i^{meaning}. The exogenous parameter U_i^{meaning} describes the relative impor-

[16] This is a simplifying assumption that would need to be relaxed in an analysis of systems of graduated and overlapping classifications, such as those associated with different degrees of racial admixture in the Caribbean.

[17] This averaging of perceived differences over multiple traits is broadly in line with principles of categorization in social psychology (see Turner 1985). However, in assuming that the similarities between groups are common knowledge, we abstract from the variable- and context-dependent nature of group and self-perception in micro encounters (Haslam and Turner 1992; Haslam et al. 1992). Rather, the traits are meant to represent institutionalized cultural practices and publicly recognized cultural differences that provide a basis for political mobilization and discourse. These are thus more stable and path dependent (see Cornell and Hartman 1998). This perspective has some affinity with the view in social psychology that individuals tend to perceive groups in a way that helps to rationalize and perpetuate existing social structures and often adopt an essentialistic stance to support such perceptions (Yzerbyt, Rocher, and Schadron 1997; Hamilton 2007).

tance of such empirical correspondence in the actor's utility function, which later on will be interpreted as a consequence of how well developed civil society organizations are. This produces the following simple, additive utility function:[18]

$$U_i(S_j) = \Delta U_i^{\text{control}}(S_j) + m(S_j) \cdot U_i^{\text{meaning}}. \quad (6)$$

The Game-Theoretic Model in Detail

Now that we have described actors and their preferences for different types of exchange systems, we turn to the strategic interaction between actors with different such preferences and differential power to attract the exchange partners they desire. The outcome of this struggle will determine which exchange system eventually prevails and, thus, who will eventually come to identify with whom, and who will remain excluded from this emerging system of alliance and identification. An alliance system should be stable as long as no actor has an incentive to unilaterally deviate from it. From a game-theoretic perspective, the struggle over the boundaries of belonging therefore constitutes a noncooperative game.

We model this struggle as a sequential game because this allows us to capture the effects of symbolic power in two simple ways. First, we assume that only elites are able to formulate and propose new alliance systems, whereas masses can react toward these publicly communicated proposals or choose to stick to the existing alliance system. This assumption is realistic since in modernizing states the power to effectively propose new identities and political alliances was restricted to political elites, even if such new models of political organization and identity were originally developed by others, such as nationalist intellectuals, street-level populist firebrands, or ethnic entrepreneurs at the village level. Masses lacked both the necessary communicative skills and the access to the public sphere. Note, however, that the masses influence the proposals of the elites through their control over crucial economic and political resources (e.g., military support) and through their capacity to reject any proposal that does not conform to their perceived interests. As we will show below, this is why elites sometimes envision inclusive alliance systems and propose the national community as a new form of collective identity. Our model therefore stays clear of the elite manipulation arguments criticized in the introduction.

A second assumption is that the central elites move first. This reflects

[18] This additive specification allows analyzing the impact of empirical correspondence above and beyond that of instrumental considerations. Robustness analyses that used a multiplicative linkage produced qualitatively identical results.

their superior symbolic power compared to that of peripheral elites. The central elites have more control over cultural institutions such as schools or the print media and can thus more effectively propagate their "vision of the legitimate divisions" of society, to paraphrase Bourdieu. In any case, we modified the order in which actors move to check the results for robustness and report results in footnotes.

As depicted in figure 2, the resulting model comprises three stages: First, the central elites propose one out of eight possible alliance groups of which they are a part (or an "in-group" for short). In the next stage, the peripheral elites likewise propose an in-group. In the third and last stage, the central and peripheral masses choose simultaneously between the central elites' proposal, the peripheral elites' proposal, and the established in-group.[19] Since elites propose in-groups, the masses accept membership either in one of these two in-groups (if it includes them) or in the corresponding out-group (if they are excluded). Thus, the sets of alternatives among which actors choose are not entire exchange systems but in-group proposals, reflecting the greater psychological and instrumental importance that individuals attach to their own identity and interests vis-à-vis those of others.

The outcome of the game is derived according to the following aggregation rule: Two actors i and j belong to the same category if and only if both propose identical in-groups (cf. Hart and Kurz 1983; Yi and Shin 2000). Consider the example given in figure 2, following the path marked in bold that leads to the second outcome from the top. The central elite proposes {cE, pM}, while the peripheral elite proposes {pE, cM, pM}. Assume further that the dominant masses follow the central elite by choosing the complement of their proposal, {pE, cM}, whereas the peripheral masses agree to the peripheral elite's proposal, {pE, cM, pM}. The resulting exchange system then is {cE}{cM}{pE, pM} since only the peripheral elite and the peripheral masses propose identical in-groups. This so-called principle of consensus means that actors who enter into an exchange relationship with each other have to agree to belong to the same group.[20]

[19] These are obviously not necessarily distinct alternatives since the elites' proposals and the established alliance system could imply identical in-groups for the masses. Thus, the number of distinct alternatives faced by the masses varies between one and three.

[20] Our model therefore assumes that group formation and collective identities cannot be directly generated by force. In extreme cases of subordination, actors might be forced to display certain markers of identity (as the example of the Star of David in Nazi Germany illustrates), but whether or not they will adopt and embrace that category of identification is a different matter. In line with Scott's (1990) writings, we tend to believe in the possibility and relevance of "hidden" forms of resistance, especially when it comes to subjective identification processes. Note that our model does not

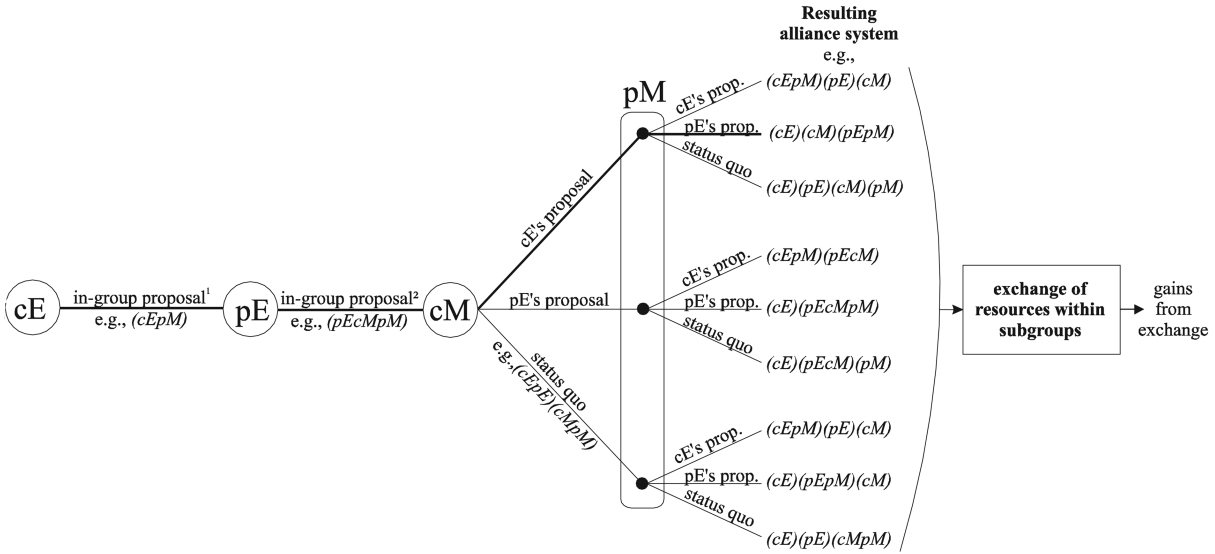

FIG. 2.—The structure of the sequential game. cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses. [1]Out of choice set: {(cEpEcMpM), (cEpEcM), (cEpEpM), (cEcMpM), (cEpE), (cEcM), (cEpM), (cE)}. [2]Out of choice set: {(cEpEcMpM), (cEpEcM), (cEpEpM), (pEcMpM), (cEpE), (pEcM), (pEpM), (pE)}.

Notwithstanding this consensus principle, the struggle over the boundaries of belonging involves conflicting interest and often results in the exclusion of weaker actors by more powerful ones—whether the former like it or not.

As a solution concept for this sequential game, we employ subgame perfect equilibrium in pure strategies. Nontechnically, this means that in equilibrium, actors' strategies are mutually best responses that involve no incredible threats (see, e.g., Osborne and Rubinstein 1994). Actors therefore have no incentive to unilaterally deviate from the equilibrium outcome. Basically, actors anticipate the exchange system that might result from their proposal and evaluate their empirical correspondence as well as the exchange gains that would result. The elites take into account the interests and equilibrium behavior of the actors who move after them. On the side of the masses, however, no such sequential rationality needs to be assumed since they move last and simultaneously.[21]

The Characteristics of the Model in Comparative Perspective

Taking its different parts together, the model displays certain features that it shares with other approaches or that distinguish it from them. First, in most rational choice models, either actors choose between an ethnic and a national affiliation (e.g., Congleton 1995; Laitin 1995; Kuran 1998; Penn 2008) or their ethnic group membership is exogenously given and stable (Fearon and Laitin 1996; Dickson and Scheve 2006). In contrast, our model describes a process of group *formation* that foresees a variety of possible alliances and identities, including of a nonethnic nature, that emerge and disappear over time.

Second and relatedly, the model also avoids the solipsistic bias that characterizes many formal models of individual identity choice (e.g., Chai 2005). It recognizes that social classifications result from the interplay between self-identification and classification by others (in line with the theoretical propositions of Jenkins [1997] as well as the analysis of role taking by Leifer [1988]). Other formal models that pursue a similarly

preclude, however, that those excluded from an exchange system might develop a shared identity precisely based on their common fate.

[21] The only rationality assumptions with regard to the masses are that they have consistent preferences regarding the three alternative exchange systems and that they choose mutually best responses in equilibrium, i.e., arrive at an outcome from which they have no incentive to unilaterally deviate. This makes sure that no unrealistic claims are made with regard to the rationality of everyday actors (see the critique by Elster [2000]).

interactionist logic are Cederman (1996), Fearon and Laitin (1996), or McElreath et al. (2003).[22]

Third, the model contributes to a growing literature that attempts to translate certain strands of the constructivist literature on nationalism and ethnicity into a formal modeling architecture (Lustick 2000; Chandra and Boulet 2005; Chandra, in press). Adopting a markedly different modeling strategy, evolutionary and agent-based models have shed light on the diffusion and spatial aspects of identity and group formation processes as well as on their multilevel nature (Young 1998; Lustick 2000; Cederman 2002). Our model complements these approaches since it disregards diffusion mechanism and spatial dynamics and instead focuses on the political economy of group formation within societies. To adequately capture these domestic dynamics, it is crucial to move the exchange of resources between collective actors center stage, which so far has escaped evolutionary and agent-based modeling strategies.

Finally, we go beyond standard game-theoretic models that do not consider the unequal distribution of resources and treat the preferences of its players as exogenous—a major point of critique by scholars both sympathetic (Elster 2000) and unsympathetic to rational choice theory (Somers 1998). Combining a game-theoretic model of strategic interaction with an exchange-theoretic approach to preference formation allows us to endogenize how actors come to prefer certain political alliances and identities over others. While this is crucial for our analytical purposes, it comes at the price of an increase in the model's complexity. The high number of exogenous parameters makes a general analytical, that is, mathematical, solution infeasible. We therefore derive the equilibrium outcomes of the model computationally.[23]

[22] How identity processes are embedded in social interaction has been prominently discussed by the identity theories of Stryker, Burke, and colleagues. These have been concerned with internal, cognitive identity formation and with the impact that social networks and role relationships have on these processes (see the overview by Stryker and Burke [2000]). While being compatible with these perspectives, our model is concerned with group-level boundary making, i.e., the process of forming and changing these networks and roles over time.

[23] The model is programmed in the following way: The user specifies the distributions of control and interests, the trait distribution, the status quo, and the relative weight of empirical correspondence in the overall utility function (U^{meaning}). On the basis of the control and interest matrices, a C++ program calculates exchange equilibria and actors' gains from exchange for all 15 alliance systems, using eqq. (1)–(4) and Kalter's (2000) normalization method for segregated exchange systems. On the basis of the trait distribution, the program computes the empirical correspondence of the 15 alliance systems, using eq. (5). Combining these results according to eq. (6) gives the overall utility of each alliance system for each actor. This yields complete preference rankings over alliance systems, which provide the basis for the strategic interaction model. To calculate the subgame perfect equilibria of the sequential game (depicted in fig. 2), the

HYPOTHESES AND EMPIRICAL CALIBRATION

Hypotheses

This model architecture allows us to analyze the key mechanisms through which the estate order of premodern polities is transformed into an encompassing national community, an ethnically segmented political arena, or a populist mode of alliance and identity. Under which conditions do we expect these three different political trajectories to emerge? The following series of hypotheses is derived from the relevant literatures in comparative historical and political sociology. First, a highly centralized state will lead actors to settle on an encompassing nationalist compromise. We define state centralization as the degree to which the central elites have been able to establish direct rule and thus to monopolize control over political decision making, taxation, and the provision of public goods (Tilly 1994; Hechter 2000). Second, other authors have argued that nation building is also a consequence of the political and military mobilization of the masses, that is, the degree to which they have become engaged in the politics of the center and to which they provide manpower for the ruler's armies (Mann 1995; Lachmann 2011).

Combining hypotheses 1 and 2, we arrive at two different scenarios. In a centralized state with a highly mobilized mass of citizens, which we term the "strong scenario," we expect an exchange of political and military loyalty of the masses against political participation and public goods provision by the state elite—and thus the most encompassing system of alliances and identity (nation building). Conversely, ethnic segmentation will emerge in states that are weakly centralized and whose population is less mobilized, in other words, in a "weak scenario" (see Wimmer 2002). Under these conditions, the elites do not have the political and economic resources to distribute public goods and political participation evenly over the population. The masses, on the other hand, can expect less from the state elites and thus will less likely identify themselves with an encompassing nationalist project and more likely find the ideology and practice of ethnic solidarity attractive. The result should be political closure along ethnic lines.[24]

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program uses the Python interface of the game theory software Gambit (McKelvey, McLennan, and Turocy 2007). The code is available from the authors on request.

[24] As this discussion makes clear, we treat state centralization and the political and military mobilization of the masses as two exogenous variables. We do not model how the structure of the international system, especially the nature and frequency of war between competing states, affects state centralization and mass mobilization. This is the object of Tilly's (1975) classic work on early modern state formation, which thus provides the backdrop for our analysis. Our model focuses on how domestic exchange relationships are affected by different degrees of centralization and mobilization without further exploring the reasons for such variation.

Our third hypothesis states that ethnic closure is all the more likely in states with a weak civil society. This hypothesis is derived from Wimmer's (2002) comparative work on nation building in Iraq, Switzerland, and Mexico, as well as from Varshney's (2003) study of the conditions under which communal violence is more likely in Indian cities. A civil society is strong if a dense network of clubs, associations, trade unions, and the like has emerged. When only a few such organizations have been established, political elites and followers alike will be more likely to rely on ethnocultural similarity as a means to organize transclass alliances. In other words, they prefer to ally themselves with actors who share certain ethnocultural traits. Conversely, where civil society organizations are strong, elites will rely on these established networks in order to mobilize followers and to gain political support. Elite competition is then more likely to follow the dividing lines of ideology and interest.

Fourth, populism should result from medium state centralization. Drawing on analysis of the reemergence of populist nationalism in Latin America (Roberts 1996; Weyland 1996), we suggest that medium state centralization leaves the central state elite with too few resources and too little political power to be willing to integrate and co-opt all elite segments of society. But they are resourceful enough to ally themselves with the masses who will follow populist and anti-elite appeals in the hope of gaining access to public goods and political participation. Thus, by being able to attract both masses with an attractive exchange offer, the central elites win the struggle for support against competing elite factions. We therefore expect populist forms of political closure to lie between the nation building and the ethnic closure variants, in terms of both the conditions that produce it and the degree of inclusiveness that follows from it.

Fifth, populism will be more likely in societies with weak civil societies because appeals to the undifferentiated "people" are especially attractive, as the literature on waves of populist mobilizations in Latin America suggests, where large segments of the population are not integrated into stable, institutionalized networks of political organizations and thus constitute a reservoir of political support that can be used in the struggle against competing elite segments. A weak civil society thus makes nation building less likely by providing incentives to settle on ethnic closure or a populist compromise.

We use the game-theoretic exchange model to test whether these hypotheses hold against an explicit specification of the underlying micro mechanisms. In order to proceed in as transparent a way as possible, we first model scenarios in which civil society is strong and actors therefore need not care about cultural similarity when choosing alliance partners (setting the parameter U^{meaning} to 0). In a second step (in the section When Cultural Traits Matter), we will modify this assumption and calculate

scenarios with a weak civil society and different distributions of cultural traits over actors, following class divisions in one scenario and ethnic division in the second. Before we present results, however, we familiarize the reader with the empirical data used to calibrate the model.

Empirical Calibration 1: Empire and Strong Scenario

As online appendix A documents, the empirical data used for model calibration refer to various stages in the process of political modernization: the French Renaissance kingdom (13th and 14th centuries) and the Ottoman Empire of the classical age (16th and 17th centuries) provide the data for modeling the premodern imperial scenario; the absolutist French state of the 18th century, a comparably highly centralized state under the modernist last sultan, Abdulhamid, who reigned until the Young Turk revolution in 1908, as well as the fully centralized state under the French Third Republic before World War I represent further points along the continuum of state centralization and mass mobilization. The model calibration for the strong scenario—defined as a combination of high state centralization and high mass mobilization—lies in between those of absolutist France and the late 19th-century Ottoman Empire, thus reflecting the points in the developmental trajectory just before nationalism emerged in the French and Young Turk revolutions.

Before we discuss the calibrations for the strong scenario in more detail, a word about the premodern situation is in order. According to the model calculations that are detailed in online appendix B, the specific distribution of resources and interests in the French Renaissance kingdom and the Ottoman Empire of the classical age lead the four actors to settle on an estate order—pitting masses against elites. The model thus adequately retrodicts the premodern alliance system prevalent in these two societies and can thus capture the historical starting point of subsequent historical developments. In the following tables, we include the empirical estimations of resource controls in the French Renaissance kingdom and the Ottoman Empire of the classical age in order to provide the benchmark information against which the different paths of modernization can be specified.

Let us now turn to the calibration of the strong scenario that combines high state centralization with high mass mobilization. According to the historical research described in online appendix A, the central elite almost exclusively control public goods provision in such highly centralized states (from an average of about 0.05 in the two premodern empires to 0.91)[25]

[25] As described in online app. A, we use data on expenditures to estimate control over public goods provision. We assume that the highest institutional level through which

and hold the greatest share of control over taxation as well (from 0.1 in the premodern empires to 0.5).[26] This reflects the change from indirect rule through peripheral elites to direct rule, a key aspect of political modernization. Conformingly, the peripheral elites gradually lost control over their two main sources of power—public goods provision and taxation—and thus no longer served as intermediaries between the central elites and the masses of the population. As part of the same transition, we assume that the central elite came to almost exclusively control political decision making (from 0.6 in empires to 0.9 in strongly centralized states). Given the scarcity of historical data, we could not empirically calibrate control over political decisions and instead had to rely on plausibility assumptions here. Sensitivity analyses (documented in online app. C) establish that our results are robust to variation in these assumptions.

It is realistic to assume that the development of such strong, centralized states also changed the interests of actors. The masses and the peripheral elite show a heightened relative interest in public goods, given that the absolute volume and quality of state-provided goods and services increase so dramatically. Conversely, their relative interest in control over taxation decreases compared to the situation in a premodern empire.

The other aspect of the strong scenario relates to the mobilization of

money used for public service provision circulates also controls these resources. Compared to earlier periods, the Ottoman state of the classical age had vastly wider concerns in the area of public goods provision and was involved in public works, education, the administration of justice in both Muslim and non-Muslim areas, policing, pensions for former government workers, postal and telegraph services, funding of the holy cities and pilgrimages, and so on. In 18th-century France, the king financed the police, postal services, major infrastructure construction and repair projects, and education and also spent considerable sums for the support of hospitals. Under the Third Republic, the state provided all of this and declared major public services (including caring for the needy, policing, and mandatory schooling) a municipal task mandated by law and financed through centrally collected taxes (see online app. A for details).

[26] These initial shares of control over taxation were empirically calibrated indirectly because it was possible to measure only postexchange values in this case. In equilibrium, our model generates postexchange shares of control close to the empirical measures. As described in online app. A, these measures are based on of tax revenue data. In France, the development of a centralized bureaucracy under absolutism, such as through the system of royal intendants (Harding 1978), is well documented, as are the corresponding efforts under the Tanzimat reformers in the Ottoman Empire (Lewis 1962, chap. 4). The capacity to directly tax the population increased accordingly (see the research documented in online app. A). By the late 18th century, the French state was collecting a wide variety of taxes, both direct (property taxes, income taxes, and a general head tax) and indirect (mostly sales taxes levied on a wide variety of goods). Some of these indirect taxes were collected by the state, while others were handled through tax farming, the state lacking the bureaucratic capacity for gathering taxes directly, contrary to the tax collectors under Abdulhamid (Shaw 1975) and the Third Republic (Kiser and Kane 2001), which formed part of a more modern, bureaucratically integrated state apparatus.

the masses. This process had a military as well as a political dimension. First, the transition to the modern territorial state implied a shift in control over military support in favor of the masses (from an average of about 0.05 in the empires to 0.45 each, as the historical data documented in online app. A show).[27] The second, political aspect of mass mobilization is best modeled as a change in the interests of the masses. We assume that they became strongly interested in political decision making (relative interest of 0.50) because the shift from indirect to direct rule, the centralization of power, and the administrative penetration of society dramatically increased the relevance of the decisions of the central state for the everyday life of its citizens (see Mann 1995). Together with their increased interest in public goods provision discussed above, this implied that the masses' relative interest in taxation sank considerably (from 0.85 in empires to 0.10).[28]

This model specification is supported by the fact that after the Fronde rebellion of the mid-17th century, tax increases no longer resulted in popular rebellions in France (Kiser and Linton 2002), arguably because the king was becoming more efficient at preventing them, but also, as Kiser and Linton (p. 905) suggest, because the population may have started to identify with the state and envision, as we would argue, a different exchange relationship with the central elites. Also note again that we test, in online appendix C, whether a certain degree of variation in the specific values of relative interests and control change our main findings, which is not the case.

The various model assumptions and the empirical data that support them are reported in table 1.

Empirical Calibration 2: The Weak Scenario

The weak scenario of political modernization ends in a state with a lower capacity to tax directly, a lower degree of centralization of decision-making

[27] Historically, the reason for their increased importance as a source of military support was the dramatic evolution of military technology that, in the case of France, made the feudal *arrière ban*, and thus the military power of the peripheral elite, gradually irrelevant, all the while constantly increasing the importance of navy sailors and infantrymen, who either were foreign mercenaries or were recruited from the general population—a development that culminated in the introduction of universal conscription by the French Revolution and the Ottoman army reforms of 1843 and 1869 (see online app. A for details). In the Ottoman Empire, the tribal militias that Abdulhamid institutionalized in 1892 and that wreaked havoc on the Armenian population of Anatolia were the only remaining bulwark of military power left for the peripheral elites, while their role in the army of the Third Republic was comparatively much smaller.

[28] Note, though, that this does not imply a decrease in absolute interest in maintaining a low taxation level.

power, and the provision of public goods divided between the central and the peripheral elites, as well as lower levels of popular mobilization. We specified the control and interest matrices for a weakly centralized state by using the midpoints between the empirical values of the premodern empire scenario and those of a highly centralized state. We preferred this strategy over collecting historical data on additional cases because we realized that the various "snapshots" of the French and Ottoman control distributions aligned almost perfectly along a linear continuum, leading from Renaissance France to the 16th and 17th-century Ottoman Empire of the classical period to 18th-century absolutist France, Abdulhamid's empire, and finally the Third Republic (see again online app. A). It thus made sense to define the weak transition as any development that would stop halfway on this continuum, thus a situation resembling the Ottoman Empire in the Tanzimat era or France in the 16th century.

However, we deviated from this interpolation principle on one point because weak states—such as the 19th-century United States—also differed from the Tanzimat Ottoman Empire or 16th-century France. While in these societies the midpoints represent transitory phases in a steady political development, in weak states they conform to a longer-term equilibrium. This has two consequences. First, the masses regain some control over taxation because neither indirect rule nor direct rule is fully institutionalized in a permanently weak state (0.10 of control over taxation by each mass vs. 0.05 under the empire and 0.20 under the strong transition scenario). Second, when the weak state is permanent, the peripheral elites become predominately interested in control over military support in order to secure their position in a situation of uncertainty given the weakness of the political center (0.38 vs. 0.15 under the empire scenario and 0.25 under the strong scenario). The interpolation procedure plus these two modifications produces the control and interest matrices for the weak scenario (table 2).

RESULTS: STRONG AND WEAK SCENARIOS WITH WELL-DEVELOPED CIVIL SOCIETIES

We are now ready to present the results that the game-theoretic exchange model produces for strong and weak scenarios. Figure 3 depicts the alliance systems that result in equilibrium for different levels of state centralization (y-axis) and mass mobilization (x-axis). We first focus on panel A of the figure, in which we are still assuming that civil societies are well developed and actors thus do not take the distribution of cultural traits into account. This assumption is modified in panel B of the figure, to which we will turn below (in the section When Cultural Traits Matter).

TABLE 1
CONTROL AND INTEREST DISTRIBUTIONS IN EMPIRES AND IN THE STRONG SCENARIO

	Control over					Interest in			
	Political Decision Making	Public Goods	Military Support	Taxation		cE	pE	cM	pU
Model Assumptions for the Strong Scenario									
cE	.9	.91	.05	.5	Political decision making	.2	.3	.5*	.5*
pE	.1	.03	.05	.1	Public goods	.01	.2	.4	.4
cM	0	.03	.45*	.2	Military support	.2	.25	0	0
pM	0	.03	.45*	.2	Taxation	.59	.25	.1	.1
Empirical Data for the Strong Scenario									
France, 1690–1789:									
cE	NA	.865	.12	.873					
pE	NA	.018	.08	.083					
cM	NA	.0585	.4	.022					
pM	NA	.0585	.4	.022					
Ottoman Empire, 1876–1908:									
cE	NA	.934	.005	.9					
pE	NA	.915	.12	0					
cM	NA	.03	.44	.05					
pM	NA	.03	.435	.05					

France, 1870–1914:				
cE	NA	.934	.004	.9
pE	NA	.06	.042	.04
cM	NA	.003	.477	.03
pM	NA	.003	.477	.03

	Empirical Data for the Empire Scenario			
France, 1280–1350:				
cE	NA	.005	.185	.42
pE	NA	.915	.68	.46
cM	NA	.04	.065	.06
pM	NA	.04	.065	.06
Ottoman Empire, 1470–1670:				
cE	NA	.152	.325	.36
pE	NA	.588	.61	.49
cM	NA	.13	.05	.07
pM	NA	.13	.015	.07

	Model Assumptions for the Empire Scenario			
Political decision making	.2	.45	0	0
Public goods	.01	.1	.15	.15
Military support	.2	.15	0	0
Taxation	.59	.3	.85	.85

NOTE.—cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses. The control matrix gives the preexchange distribution of control for each resource (i.e., the relative shares of control exercised by the actors). The interest matrix gives the distributions of interest for each actor (i.e., his relative interest in the resources). Empirical data on control over taxation, however, represent postexchange values because preexchange controls cannot be measured empirically. The comparable postexchange values generated by our model in equilibrium are (.876, .05, .037, .037) for the strong scenario and (.42, .48, .05, .05) for the empire scenario.

* Indicators of a strong mass mobilization.

TABLE 2
CONTROL AND INTEREST DISTRIBUTIONS UNDER THE WEAK SCENARIO

	CONTROL					INTEREST			
	Political Decision Making	Public Goods	Military Support	Taxation		cE	pE	cM	pM
cE	.75	.56	.13	.20	Political decision making	.20	.10	.20*	.20*
pE ...	.25	.38	.38	.20	Public goods	.01	.15	.20	.20
cM ...	0	.03	.25*	.30	Military support	.20	.50	0	0
pM ...	0	.03	.25*	.30	Taxation	.59	.25	.60	.60

NOTE.—cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses. The control matrix gives the preexchange distribution of control for each resource (i.e., the relative shares of control exercised by the actors). The interest matrix gives the distributions of interest for each actor (i.e., his relative interest in the resources).

* Indicators of a weak mass mobilization.

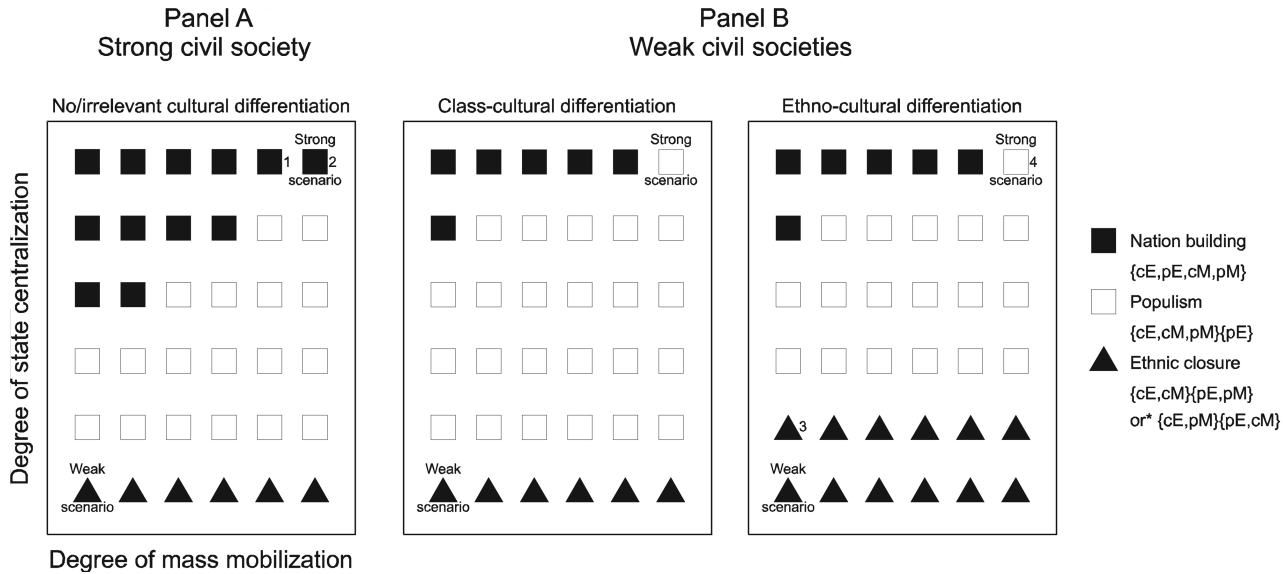

FIG. 3.—Alliance systems as a function of state centralization and mass mobilization under no cultural differentiation, a status, and an ethnic differentiation. cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses. *In the right graph, only {cE,cM}{pE,pM}. Numbers indicate simulations that correspond most closely to empirical measures: 1 = France 1690–1780s, 2 = France 1870–1900, 3 = Ottoman Empire circa1800, and 4 = Ottoman Empire 1870–1908.

Each point in the graphs corresponds to a specific distribution of control and interest. The point in the lower-left corner represents the weak scenario. The point in the upper-right corner conforms to the strong scenario; the diagonal connecting them thus represents a continuum between weak and strong scenarios. All other points were calculated by varying the indicators of state centralization and of mass mobilization in equal-sized steps from their weak to their strong scenario values. This gives a more complete picture of the separate effects that increasing state centralization and mass mobilization have on the emerging system of exchange and alliance.

The strategic interaction process results in three types of equilibria: nation building (black squares in fig. 3), populism (white squares), and a multiple equilibrium in which each elite group aligns with only one of the masses (black triangles). For simplicity, we refer to the latter equilibrium as ethnic closure, although it also includes the reverse assignment of elite groups and masses. If we allowed for only an infinitesimal significance of an ethnocultural trait distribution in actors' preferences, ethnic closure would obviously be the sole equilibrium in these cases.

Overall, the results in panel A of figure 3 lend strong support to the first hypothesis: Nation building results only if the state is strong, whereas ethnic closure results only if the state is weakly centralized. Populism results for medium state centralization, thus confirming that state centralization is positively related to more inclusive forms of alliance and identity. We also see that the mobilization of the masses has hardly any effect on the resulting exchange system, contrary to hypothesis 2. It is only under conditions of medium to high levels of state centralization that mass mobilization matters, by leading to populism and away from nation building. Thus, contrary to our expectations, mass mobilization does not emerge as a factor promoting nation building and acting against ethnic closure. We will discuss this result in the subsection on the Populist Equilibrium.

Remarkably, our model also shows that given our assumptions, ethnic closure can be the equilibrium outcome even if actors do not care at all about the empirical correspondence between exchange systems and the distribution of cultural traits. In other words, ethnic closure may result from a purely instrumental interaction process that is exclusively geared toward maximizing exchange gains and is not influenced by considerations of cultural commonality. The mechanisms underlying this finding will become clear as soon as we discuss actors' preferences and their strategic interaction in detail.

MECHANISMS UNDER THE MAGNIFYING GLASS

How did elites and masses, according to our model, arrive at these different, more or less encompassing settlements over where the boundaries of belonging will lie? We begin explicating the underlying mechanisms in the weak scenario, that is, the point in the lower-left corner of figure 3 (still focusing on panel A only).

Ethnic Closure

We proceed in the two steps foreseen in our model architecture. First, we show how actors' preferences over alliance systems derive from the exchange gains that these would imply for them. Note that these preference orders are not based on plausibility assumptions but are calculated on the basis of the exchange-theoretic part of the model, which is in turn based on the historical data documented in online appendix A. Second, we describe the strategic interaction process, modeled with the help of game theory.

The lower part of table 3 shows the preference orderings in the weak scenario. Strikingly, the first preference of both elite groups is to form a coalition with both masses while excluding the other elite group (i.e., populism). The two elite groups compete for the military support of the masses and therefore have an incentive to draw a political boundary that excludes the other elite group. This can be seen from the upper part of table 3, which shows actors' exchange power, the prices of resources, and the demand and supply that would result under the three major alliance systems: nation building, populism, and ethnic closure. If all actors were to exchange resources with each other (nation building), both elite groups would compete for the military support of the masses. When the peripheral elite is excluded (populism), the central elite becomes the sole demander of military support. The price of military support would fall from .200 (in the nation-building system) to .095 (under populism) and the central elite's exchange power would increase from .312 to .467. The same considerations hold for the peripheral elites.

Further down the preference order, the peripheral elite also prefers ethnic closure over nation building, whereas the central elite prefers nation building over ethnic closure. For both elites, these alliance systems involve a trade-off since ethnic closure would allow them to circumvent the competition of the other elite group at the cost of losing the military support of one of the masses. For the central elite, this trade-off plays out in favor of nation building, since they control more of the resources demanded by the masses: political decision making and public goods provision. As can be seen from table 3, the central elite holds greater exchange power under

TABLE 3

THE WEAK SCENARIO: EXCHANGE RELATIONS UNDER THREE POSSIBLE ALLIANCE SYSTEMS AND RESULTING ACTORS' PREFERENCES

	Nation Building {cE, pE, cM, pM}	Populism {cE, cM, pM}{pE}	Ethnic Closure {cE, cM}{pE, pM}
Power of actors:			
cE	.312	.467	.563
pE	.272		.617
cM	.208	.266	.437
pM	.208	.266	.383
Price of resources in subgroup 1:			
Political decision making	.172	.199	.200
Public goods	.113	.111	.093
Military support	.200	.095	.114
Taxation	.515	.595	.594
Price of resources in subgroup 2:			
Political decision making			.138
Public goods	No subgroups	No exchange partner	.138
Military support			.310
Taxation			.414

Equilibrium supply and demand (changes in initial shares of control)

	Pol.	Pub.	Milit.	Tax.
cE	−.33	−.54	+.19	+.16
pE	−.14	−.13	+.31	−.04
cM	+.24	+.34	−.25	−.06
pM	+.24	+.34	−.25	−.06

	Pol.	Pub.	Milit.	Tax.
cE	−.37	−.54	+.49	+.17
cM	+.19	+.27	−.24	−.09
pM	+.19	+.27	−.24	−.09

	Pol.	Pub.	Milit.	Tax.
cE	−.31	−.53	+.25	+.08
cM	+.31	+.53	−.25	−.08
	Pol.	Pub.	Milit.	Tax.
pE	−.17	−.19	+.25	+.02
pM	+.17	+.19	−.25	−.02

RANK-ORDERED PREFERENCES OVER ALLIANCE SYSTEMS (Equilibrium Outcomes in Bold)

	1	2	3	4	5
cE	cEcMpM/pE	cEpEcMpM	**cE*M/pE*M**	cEpE*M/*M	cEpE/cMpM
pE	pEcMpM/cE	**cE*M/pE*M**	cEpEcMpM	cEpE*M/*M	cEpE/cMpM
*M	cEpE*M/-M	**cE*M/pE-M**	cEpEcMpM	**pE*M/cE-M**	cEcMpM/pE

NOTE.—cE = central elites, pE = peripheral elites, cM = central masses, and pM = peripheral masses. *M = either cM or pM, −M = the other masses (−M = pM if *M = cM, −M = cM if *M = pM).

nation building than the peripheral elites (.312 vs. .272). As a consequence, they would be able to increase their control over taxation by 16 percentage points, supplied by the three other actors. In contrast, the peripheral elite prefer ethnic closure over nation building because they would do less well when competing with the central elites.[29]

We now turn to the preferences of the masses. Generally, the masses compete for the elite-controlled resources and therefore have an incentive to exclude the other mass from the exchange system. This is one of the main mechanisms that produce ethnic closure in the weak scenario. In more detail, both masses are willing to give away their military support. However, they receive less political participation and public goods when the elites can simultaneously also exchange with the other masses. To see this, compare populism and ethnic closure in table 3 from the dominant masses' point of view: The dominant mass can trade their military support at a higher price (.114) in an ethnically segmented exchange system compared to populism (.095).

This is why the masses prefer ethnic closure over populism. However, ethnic closure carries a trade-off for them similar to that for the elites: It prevents competition with the other masses but also means losing one supplier of political participation and public goods. The masses' most preferred outcome is therefore to be included in an enlarged estate order, that is, to exchange with both elites while excluding the other masses. Their second preference is to align themselves with the central elite only, as this would allow the masses to exchange with the more resourceful elite group while excluding the other masses. Nation building is their third-most preferred alliance system, followed by aligning with the peripheral elite and populism.

Given these preferences, ethnic closure is the equilibrium outcome. To understand this, one has to turn from preferences to the strategic interaction between actors (the game-theoretic part of our model). It is easy to see that the central elite can enforce neither their first preference (populism) nor their second preference (nation building) and therefore cannot do better than ethnic closure. If the central elite proposed populism, the peripheral elite could counter by proposing ethnic closure, which the masses prefer over populism. Alternatively, the central elite could offer nation building, their second preference. This proposal would be preferred by both masses relative to aligning with the peripheral elite only. However, the latter can make nation building unfeasible: They can decline to form an encompassing national community by proposing to align only with

[29] In an exchange with only one of the masses (ethnic closure), the peripheral elites would gain somewhat less in control over military support (+.25 instead of +.31 under nation building). However, this is more than outweighed by their gains in taxes.

one or both masses. This will again lead to ethnic closure: One of the masses will follow the proposal of the central elite, while the other will agree to exchange with the peripheral elite. The peripheral elite likewise cannot do better than ethnic closure, which is their second preference. Their first preference, a common exchange with both masses under exclusion of the central elite, is not attractive for the masses. Compared to this outcome, both prefer to align themselves with only one of the elites.

A critical assumption of this analysis is that the masses know the value of the public goods and decision-making power in the hands of the elites. The masses do not align with the central elites but follow the peripheral elites' counterproposal of ethnic closure because they know about the limited amount of goods that the central elite has at its disposal. This assumption of perfect information can be relaxed in the following way: While both elites know that the state is only weakly centralized, the masses attach probability p to the possibility that the state is highly centralized, while they believe in engaging a weakly centralized state with probability $(1 - p)$. In this variant of the model, populism becomes more prevalent the higher the value of p, that is, the more the masses falsely believe that they are facing a strongly centralized political center (results not shown). Thus, by misleading the masses about their resourcefulness, the central elites can more easily attain their most preferred outcome. This might elucidate why populists often overemphasize their capacity to deliver public goods and their effective political power.

Negotiating the Nation

We now turn to the strong scenario that leads to nation building. It corresponds to the upper-right corner of the graph of panel A in figure 3. As the figure reveals, the high level of state centralization is crucial to bring about this outcome. Contrary to what the second hypothesis postulated, however, high levels of mass mobilization are irrelevant. More specifically, where the state is strongly centralized, the preference orderings of the central elite and the masses, as shown in table 4, stay the same regardless of the degree of mass mobilization. We can therefore abstract from this dimension for the moment (see the next subsection) and focus on the mechanisms by which high levels of state centralization lead to nation building.

Under the strong scenario, nation building (rather than populism) becomes the first preference of the central elite. In a strongly centralized state, central elites have almost monopolized political decision making and public goods provision, while peripheral elites as well as the masses show more interest in these resources. Table 4 shows how these developments affect the exchange relations among actors. Most significant is

TABLE 4

THE STRONG SCENARIO: EXCHANGE RELATIONS UNDER THREE POSSIBLE ALLIANCE SYSTEMS AND RESULTING ACTORS' PREFERENCES

	Nation Building {cE, pE, cM, pM}	Populism {cE, cM, pM}{pE}	Ethnic Closure {cE, cM}{pE, pM}
Power of actors:			
cE	.614	.672	.733
pE	.083	0 (isolated)	.598
cM	.152	.164	.267
pM	.152	.164	.402
Price of resources in subgroup 1:			
Political decision making	.299	.298	.280
Public goods	.144	.137	.114
Military support	.144	.135	.147
Taxation	.413	.429	.459
Price of resources in subgroup 2:			
Political decision making			.380
Public goods	No subgroups	No exchange partner	.280
Military support			.151
Taxation			.189

Equilibrium supply and demand (changes in initial shares of control)

	Pol.	Pub.	Milit.	Tax.
cE	−.49	−.87	+.80	+.38
pE	−.02	+.09	+.09	−.05
cM	+.25	+.39	−.45	−.16
pM	+.25	+.39	−.45	−.16

	Pol.	Pub.	Milit.	Tax.
cE	−.49	−.86	+.89	+.33
cM	+.25	+.43	−.45	−.17
pM	+.25	+.43	−.45	−.17

	Pol.	Pub.	Milit.	Tax.
cE	−.43	−.85	+.45	+.16
cM	+.43	+.85	−.45	−.16
	Pol.	Pub.	Milit.	Tax.
pE	−.05	−.00	+.45	+.14
pM	+.05	+.00	−.45	−.14

RANK-ORDERED PREFERENCES OVER ALLIANCE SYSTEMS (Equilibrium Outcomes in Bold)

	1	2	3	4	5
cE	**cEpEcMpM**	cEcMpM/pE	cEpE*M/*M	cE*M/pE*M	cEpE/cMpM
pE	cEcMpM/cE	cEpE/cMpM	cE*M/pE*M	cEpE*M/*M	**cEpEcMpM**
*M	cE*M/pE-M	cEpE*M/-M	cEcMpM/pE	**cEpEcMpM**	pE*M/cE-M

NOTE.—cE = dominant elites, pE = subordinate elites, cM = dominant masses, and pM = subordinate masses. *M = either cM or pM, −M = the other masses (−M = pM if *M = cM, −M = cM if *M = pM).

the dominating role of the central elites, whose exchange power in the nation-building scenario (.614) by far exceeds that of either the peripheral elites (.083) or the masses (.152). The successful transition to direct rule leaves the peripheral elites in a weak position. This is also indicated by the fact that under the encompassing (nationalist) exchange system, the peripheral elites would switch from being a supplier of public services to demanding them, along with the masses. Likewise, the peripheral elites no longer are a serious competitor to the central elites when it comes to offering political participation to the masses.[30]

Nation building therefore becomes the first preference of the central elite, while populism drops to the second rank of their preference order compared to the weak scenario. Also owing to the attenuated elite competition, the enlarged estate order replaces ethnic closure as the central elite's third preference.

The preferences of the masses are also markedly different compared to the weak scenario. Because they find the public goods controlled by the central elite highly attractive, the masses prefer any alliance system in which they end up together with the central elite over an exchange exclusively with the peripheral elites (see the lower part of table 4). This has drastic consequences for the role of the peripheral elites in negotiating the boundaries of belonging: The preferences of the peripheral elites simply do not matter anymore because the masses are no longer interested in an alliance with them. Consequently, the strategic interaction process (as modeled in the game-theoretic part) becomes very simple: The central elite propose nation building, and the three remaining actors follow this proposal.[31]

[30] Still, populism would provide the central elites with nine additional percentage points of control over military support—the share of control acquired by the peripheral elites under nation building. However, the temptation to exclude the peripheral elites is more than outweighed by the benefits of including them in an encompassing alliance system. The peripheral elites represent an additional supplier of control over taxation and their additional demand for public goods allows the central elite to exchange this resource at a higher price (.144 instead of .137 under populism).

[31] Additional robustness analyses show that these and the following results are independent of the assumption that the central elite moves first. Letting the peripheral elite move first produces identical equilibria. Letting both elites move simultaneously, however, leads to some additional equilibria: Owing to a coordination problem between the elites, nation building ceases to be a unique equilibrium and is then always accompanied by populism as a second (Pareto-inferior) equilibrium outcome. However, we deem strict simultaneity (or nonobservability) to be an unrealistic assumption if one thinks of elites proposing alliance systems in the public sphere and reacting to the proposals by others. When one of the masses moves first, the general pattern is similar, but there are more multiple equilibria than in the other variants of the game. Especially in the middle ranges of state centralization, these multiple equilibria include ethnic closure. This finding adds another aspect to our overall argument: Symbolic power of

The Populist Equilibrium

We now briefly turn to populism as the most prevalent outcome in between strong and weak scenarios. On the basis of our foregoing analyses, one can easily explain its emergence and its relationships to state centralization and mass mobilization. First and as shown above, more state centralization makes the central elite a more attractive exchange partner. Populism therefore becomes more interesting for the masses than ending up in an exchange with the peripheral elites only, as in the ethnically segmented exchange system of the weak scenario. But the central elite are not yet powerful enough to tolerate the competition of the peripheral elites (as in the strong scenario). Together, these forces lead to populism as the equilibrium outcome for medium state centralization, in line with hypothesis 4.

Second and contrary to hypothesis 2, we find that increasing mass mobilization does not support nation building. Rather, it produces a shift from nation building to populism in moderately centralized states because the preferences of the central elites change. As shown above, the elites always compete over the military support of the masses. The military aspect of mass mobilization fuels this competition, as the elites increasingly rely on the masses' supply. The central elite's exchange power vis-à-vis that of the masses is weakened the more they depend on the military support of the latter, and they therefore can less and less afford the competition with peripheral elites. The strategic interaction process (as captured by the game-theoretic part of the model) then assumes a simple form: With the central elite putting forward a populist system of alliances, the masses can decide only either to agree to it or to align with the peripheral elites. When state centralization has reached a certain level, they prefer the former option. Through these mechanisms, mass mobilization tends to promote populism.

Our model thus suggests that the increasing military role of the masses in and of itself may not be a major driving force in nation building (contrary to Lachmann [2011]). Rather, it leads to populism as long as the central elites cannot swim free of the competition with peripheral elites and thus allow themselves to integrate them into an encompassing exchange system. We conclude that state centralization may well be the crucial driver of successful nation building, as argued by Tilly (1994) and Hechter (2000).

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elites (represented by the fact that they move first) increases the chances of nation building.

WHEN CULTURAL TRAITS MATTER: WEAK CIVIL SOCIETY SCENARIOS

So far our analyses assumed that actors care only about the resources they obtain under various exchange systems. We now take into account that they might also care about how well the various alliance systems fit the empirical landscape of cultural difference and similarity. In the context of our theoretical framework, we interpret a lack of such concerns as evidence of a well-established, densely woven network of civil society organizations that may serve as a basis for the organization and stabilization of alliances between actors (Wimmer 2002). When such civil society organizations are absent, however, actors will take cultural similarity into account when forming alliances, no other institutional channels to support and stabilize a coalition being available.

In the following, we compare such a weak civil society scenario with the strong civil society scenario that we have considered in the previous two sections. Obviously, the results for the weak civil society scenario depend in part on how cultural traits are distributed over actors. We analyze two ideal types of empirical trait distribution: a horizontal, or class-cultural, differentiation between elites and masses and a vertical, or ethnocultural, differentiation between peripheral and dominant segments of the population.

Recall that we represent cultural differentiation as a vector in which each element corresponds to the dissimilarity between a pair of actors and varies between 0 (no difference at all) and 1 (maximum possible difference). In the following analysis, an ethnocultural differentiation will be defined as a dissimilarity of 0.4 between central elites and masses, as well as between peripheral elites and masses, whereas all other pairs of actors are assumed to be dissimilar by 0.6. In this situation, ethnic closure obviously has the best empirical fit, followed by populism. Nation building, the estate order, and the reverse assignment of elites and masses have the lowest correspondence to this distribution of cultural traits.

In order to model a class-cultural differentiation, we assume a dissimilarity of 0.4 between the elite groups and between the masses and a dissimilarity of 0.6 for all other pairs. The alliance system corresponding best to this trait distribution is the estate order, with ethnic closure, populism, and nation building following.[32] Finally, we set the parameter

[32] As these rankings suggest, common membership among groups that are relatively dissimilar reduces overall correspondence more than do boundaries between relatively similar groups. This is less an implication of the way the empirical correspondence is calculated than of the assumed trait distributions. The latter entail two dissimilarities of only 0.4 but four of 0.6. This means that the absence of a boundary (0) between two relatively dissimilar groups (0.6) can lead to a greater reduction of overall correspondence twice as often as do boundaries (1) between relatively similar groups (0.4).

U_i^{meaning} to 0.4. It expresses the weight of the correspondence between alliance systems and cultural traits in actors' utility functions (relative to the exchange gains that come with an alliance system). Other parameter values either lead to qualitatively similar results or are less interesting.[33]

Panel B of figure 3 reports the results. The middle graph represents the outcomes when cultural differentiation has proceeded along status lines. The right-hand-side graph depicts the equilibria for the ethnic trait distribution. Overall, there are only six instead of 12 instances of nation building in the two scenarios in which culture matters, and there are 12 instead of only six instances of ethnic closure when cultural differentiation follows ethnic lines. Thus, less encompassing alliance and identity systems emerge when civil society organizations are weak and actors take cultural similarities into account when fostering alliances. This supports our hypothesis that the strength of civil society promotes inclusive forms of political alliance and identity.

It is more surprising that populism becomes more prevalent under both trait distributions. More specifically, it replaces some instances of nation building when state centralization reaches medium to high levels. The reason is that populism instead of nation building is now the first preference of the central elites because of its better correspondence with the trait distribution. As shown in the previous section, the central elites can push through their vision of the legitimate division of society in a strongly centralized state.

The structure of trait distributions also produces some interesting divergences at low levels of state centralization. Compared to a strong civil society scenario, we observe an additional row of ethnic closure when cultural differentiation follows ethnic lines. Remarkably, analyses of preferences (not reported here) show that this is true even though the central elites' first preference continues to be populism (as under the strong civil society scenario). The reason is that the masses prefer ethnic closure when civil society organizations are weak, although in terms of exchange gains, both masses would do better under populism. Thus, if the central elites propose populism, the peripheral elite can successfully counter by suggesting a political alliance and identity based on ethnic commonality.

Under the class-cultural differentiation, the gains from the exchange of resources still dominate preferences when the state is only weakly cen-

[33] Trivially, assuming a very high U_i^{meaning} ultimately leads to the alliance system with the highest correspondence, irrespective of the gains from exchange. In turn, a weight close to 0 makes correspondence irrelevant and brings back the equilibria of the "strong civil society" scenario discussed above. Different specifications of the trait distributions yield similarly straightforward results. As robustness analyses show, more extreme trait distributions lead actors to develop stronger preferences for alliance systems that are in line with the respective distribution.

tralized. Thus, we observe the same equilibria as in the strong civil society scenario mostly because the estate order is rather uninteresting in terms of resource exchanges for the masses, thus offsetting any preference they might have for the estate order on the basis of cultural similarity.

We thus arrive at the counterintuitive finding that even when cultural markers are aligned with class cleavages and actors do care about cultural similarity, modernization will lead to the politicization of ethnic or national dividing lines and to corresponding forms of political alliances, thus replacing the horizontal divisions that had characterized imperial polities. These findings support the "modernist" school in ethnicity and nationalism studies, according to which political closure along either ethnic or national lines forms integral parts of the modern world order of states (Geertz 1963; Young 1976; Rothschild 1981; Wimmer 2002). Our model allows us to understand the micromechanisms that produce this global pattern even when the cultural landscape is not structured along ethnic divisions.

HISTORICAL ANALOGIES: FRENCH NATION BUILDING, OTTOMAN DISINTEGRATION

Although retrodictions are not the aim of this article, it is encouraging to see that the model produces results in line with the political identities and alliances that emerged in the two societies from which our historical data were derived. Figure 3 contains numbers that display where in these matrices the historical data on resource distribution would locate France and the Ottoman Empire at various points in time. In order do so, we needed to assign the two cases to one of the three scenarios related to civil society development and the type of cultural trait distribution. While we can find both ethnocultural and class-cultural types of differentiations in early modern France and the Ottoman Empire, it is probably safe to say that there was *less* ethnocultural differentiation in France and *more* cultural differences along status lines than in the Ottoman Empire.[34]

In any case, cultural difference mattered much less in France than in

[34] Intergenerational status mobility was institutionalized in the Ottoman Empire, which knew no *de jure* hereditary caste of nobles comparable to that in France but had long relied on the peripheral Christian provinces for recruiting its top slave administrators and generals (Shaw 1976, pp. 113–50). At the same time, the Sublime Port made much less conscious effort to homogenize the empire in religious or linguistic terms (Grillo 1998) but rather preserved and managed its heterogeneous communities (Barkey 2008), as opposed to the French kings, who eradicated religious diversity by revoking the Edict of Nantes and who elevated their own dialect to a national language (Lodge 1993). The Ottoman Empire, by contrast, had institutionalized religious and, to a certain degree therefore also, linguistic differences through the *millet* system that granted legal autonomy in matters of family law and a certain degree of self-rule to religious minorities.

the Ottoman Empire because the Enlightenment movement had created strong networks of civil society organizations that transcended class and regional boundaries (as argued in the classic oeuvre of Habermas [1989]; see also Melton 2001), in contrast to the Ottoman Empire, where such organizations were confined to a much smaller elite of literati in the major cities and where horizontal links between various communities were sparse (Barkey 2008).[35] Thus, the ethnoculturally differentiated weak scenario (the right graph in fig. 3) corresponds best to the empirical reality of the Ottoman Empire, whereas the French case resembles the strong civil society scenario in which cultural differences hardly mattered for the formation of political alliances (the left graph in fig. 3).

We can now investigate what the model retrodicts for the specific resource distributions that our historical research has identified for the various points in time (leaving out the premodern imperial scenarios discussed in online app. B). The French case is more straightforward. Our model retrodicts nation building for the period immediately preceding the French Revolution (see the number 1 in fig. 3). In historical reality, the democratic, republican nationalism first developed by Girondists and Jacobins (Sewell 1996) competed over almost a century with other forms of political alliances and identities, until nation building was completed under the Third Republic. Before this new "equilibrium" state was reached permanently, various developments on and off the equilibrium path can be noted and their potential meaning explored with the help of the model.

The revolutionary process and the domestic and international wars that it entailed led to the unprecedented military mobilization of the population under Napoleon's leadership. Conforming to our analysis of the conditions under which populism emerges, the strong militarized leadership of Napoleon depended on mass military support and loyalty, and he therefore excluded competing political elites—both the old nobility and the new republican forces—from his political coalition. The result has been described in Karl Marx's *Eighteenth Brumaire* as "Bonapartism," which corresponds to populism ({cE, cM, pM}{pE}) in our terminology.

Subsequent political developments then lead further away from what our model would identify as the equilibrium path: the collapse of Napoleon's empire and the Congress of Vienna in 1815 brought the Bourbon

[35] In France, a government study of historical rates of literacy published in 1880 showed that for the 1686–90 period, 25% of the overall population (and 36% of men) could sign their name, and 90% of the urban bourgeoisie was literate (Cipolla 1969). By contrast, the literacy rate among the general public in the Ottoman Empire was about 2%–3% until the early 19th century and about 7% on average in the middle of the 19th century. In the Turkish heartland of the empire, literacy rates had reached only 10.5% in 1924, when the Republic was founded (for sources of these estimates, see the online appendix for Wimmer and Feinstein [2010]).

and later the Orléanist kings back to power. They did not undo the principle of legal equality but offered only limited political inclusion to the bourgeoisies of the country's center, a configuration that can be represented as {cEpEcM}{pM} and that we termed enlarged estate order—indeed a partial return to prerevolutionary forms of political alliance and identity. Our model does not foresee these developments toward a British-style constitutional monarchy. But the failure of this system to become permanently institutionalized might be explained by the fact that state centralization had already proceeded far enough to make the demands for popular political participation and effective public goods delivery both legitimate and politically appealing, as the 1830 and 1848 revolutions illustrate.

The subsequent Bonapartist regime of the Second Empire (1852–70) under Louis Napoleon II brings back a populist mode of alliance and identification. With the Third Republic comes a massive further strengthening of the central state, especially in the domain of public goods provision, as the torrent of reforms regarding schools, hospitals, welfare for the poor, and public infrastructure indicate (see online app. A for details). As a consequence, provincial elites no longer provided such services but became dependent on them and no longer effectively competed with the Parisian political elite, as they still had at the time of the 1789 revolution, aptly illustrated by the Vendée revolt in its aftermath, which was led by the provincial clergy and nobility. The central elites thus no longer had to fear the political competition with the provincial elites and integrated them into a more tightly organized and integrated state administration.

As our model foresees (see number 2 in fig. 3), this provides the background for the development of a truly encompassing nationalist ideology by the central elites of the Third Republic, greatly helped by the defeat at the hands of Prussia in the 1870 war, the effects of which again escape our model. Nationalism was now embraced by the peripheral provincial elites as well and gradually diffused not only among the masses of the central areas of the country but among the peripheral regions as well (Weber 1979), where the public service provided by schools, hospitals, and the gendarmerie made it more and more attractive for the common men and women to embrace the nationalist ideology rather than to enter into an alliance and identify with provincial elites, which no longer had much to offer them.

As this brief discussion shows, the model is not able to predict or to make sense of the back-and-forth between various forms of alliance and identification. But it explains which of these forms became permanently institutionalized and stabilized: those that correspond to the equilibrium outcomes generated by the model. Rather than delivering a stylized version of history, then, the model helps to understand the overall direction

of historical developments, leading from the estate model of society under the *ancien régime*, through populism, to fully inclusive nation building. It cannot and is not meant to grasp other aspects—the international dimension, the balance of power between various contending political factions—or the appearance and disappearance of Robespierres and Napoleons and thus is not a model of history but a theoretical specification of the equilibrium states that once reached—through whatever historical circumstance and concatenation of events—will be stabilized and institutionally "locked in."

The Ottoman case is less straightforward and understandably so, given that the French Revolution had already created a new template of political legitimacy to emulate and adopt. Furthermore, nondomestic actors played an important role in instigating and promoting various minority nationalisms. Neither diffusion effects nor the power struggle between competing empires and states is accounted for in our model, however.

Still, the model's retrodictions for the early 19th-century Ottoman Empire are roughly in line with historical developments. Using data derived from interpolating between the 16th century, for which we collected data, and the late 19th-century Hamidian period, the model would retrodict ethnic closure for the late 18th and early 19th centuries. Graphically, this period corresponds to the scenario just above the weak scenario (see the number 3 inserted into the right graph of fig. 3). And indeed, from the 19th century onward, ethnoreligious communities (the millets) became institutionally reinforced, politically empowered, and the focus of identity for the minority population. With the help of Western imperialists and missionaries, the Christian millets—and later also Kurds and Arabs—were soon politicized and turned into aspiring nations of their own, to paraphrase Kemal Karpat's (1973) subtitle "from Millet to Nation." The Greek, Serbian, and Romanian ethnonationalisms of the early 19th century and their eventual independence are the result of that process.[36]

For the late 19th century, the model would retrodict populism (see number 4 in fig. 3), now in an empire that had lost almost all of its European domains. Indeed, with the 1876 constitution, the estate order

[36] The marked ethnic diversity of the Ottoman Empire—compared to France—might also play a role in explaining why Ottoman nation building did not succeed. We analyzed a variant of the model that involves three peripheral elites and three peripheral masses. Ethnic closure becomes more frequent and nation building much less frequent—even at highest levels of state centralization—in the model with eight actors as compared to the one with four. The main reason is that competition between the masses increases with their number because they all demand the same resources. Thus, forming an alliance with the peripheral elites only (ethnic closure) becomes more attractive to each mass as it allows limiting this competition. For quantitative evidence that diversity hampers nation building, see Wimmer (2012).

was definitively abandoned and the principle of equality—irrespective of religion—of all citizens was supposed to foster a shared identity and the "fusion" of all Ottoman subjects into a single peoplehood, a goal that Tanzimat reformers and Young Ottomans had long advocated (Davison 1954, 1963, chap. 10). Conforming to the populist model, the Christian, Arab, and Kurdish elites of the provinces were to be disempowered by continued centralization and the democratization of the millets. This stance against Christian elites that "misgoverned" their population and were manipulated by Western imperialists increased further under Abdulhamid (i.e., in the period to which the last data point refers), who gave this populist conception of society a distinctively Islamist touch, without, however, abandoning the principle of equality and inclusion for Christian citizens (Karpat 2002).

While it is clear that the Muslim masses were supportive of this reconfigured empire and its populist-Islamist ideology (Karpat 2002; but see Davison [1954] for Muslim resentment against equality), most historians argue that the non-Muslim population did not embrace this vision of society but increasingly identified with a transclass minority nationalism (or ethnic closure; see Karpat [2002]). However, it remains unclear how much popular support minority nationalisms had after 1878 and before 1908, and there are some signs that the Christian Orthodox and Jewish rank and file welcomed and supported the new order, as shown by the enthusiastic reception of the 1878 constitution among some Christian communities (Davison 1963, p. 383). The counterfactual thus holds that without further outside encouragement for and instigation of Christian nationalisms, lost wars, and the immigration of millions of Muslim refugees from Rumelia, Ottoman patriotism might have become the dominant and widely accepted ("equilibrium") mode of political organization and identity.

SUMMARY AND CONCLUSIONS

This article contributes to the comparative literature on state formation, nationalism, and ethnic politics by introducing a formal model of political closure that offers precise, actor-based mechanisms to elucidate how the boundaries of belonging are realigned during processes of political modernization. We find that ethnic closure emerges in the context of weakly centralized states. In such states, the system of indirect rule has eroded without being replaced by a strong center with full control over political decision making, public goods provision, and taxation. The resulting uncertainty leads to competition among the elites for military support by the masses. Since the latter likewise compete in their demand for state

resources, actors end up negotiating separate alliance blocks based on ethnic commonality.

Populism becomes more likely when state centralization is stronger but still of medium strength. More centralization implies an increased attractiveness of the central elites as an exchange partner, which gives them the power to exclude the peripheral elites. Contrary to our expectations, however, we also find that populism is more prevalent and encompassing nation building less likely when the entire male population has become militarily active. This is also at odds with the reasoning of historical sociologists who have emphasized the role of the military mobilization of the population for understanding the rise of nationalism. Going beyond the insights that can be drawn from our model architecture and data, one could speculate whether this could help to explain the recurrence of Napoleonic figures—populist military leaders—in the long 19th century of European mass armies as well as of the *caudillos* who dominated Latin American political arenas after the independence wars.

The situation is different when state centralization proceeds further and the central elite gains enough exchange power to make an inclusion of all three other actors profitable. The peripheral elite is now integrated into this encompassing alliance system since it no longer can effectively compete for the military support of the masses and has itself become a demander for the public goods that the state elite now controls. Strong state centralization therefore leads to nation building, a system of alliance and identity that is all the more likely when civil society organizations are well developed.

In the absence of such civil society organizations, actors prefer alliance partners that are culturally similar since cultural commonality offers a way to support and stabilize an alliance. This works against nation building because this alliance and identity system involves relatively dissimilar groups, irrespective of whether cultural traits are aligned with class or ethnic divisions. Populism and ethnic closure become more likely where civil society is weak and actors therefore care about cultural commonality.

While future work should endogenize the strength of civil society organizations and collect corresponding historical data, our analysis already produced some interesting insights on which to build in the future. Most important, even when cultural traits are aligned with class rather than with ethnic divisions, weak civil society organizations produce ethnic or populist forms of exchange and identification. This might help to understand one of the most striking features of the modern world: In contrast to Karl Marx's prediction that the 20th century would be the age of revolutionary class struggles eventually leading to the dissipation of the bourgeois state and of nations as its ideological corollary, it has turned out to be the age of nationalist, ethnic, and populist politics.

We used historical data from France (1300–1900) and the Ottoman Empire (1500–1900) to calibrate the parameters of the model and showed that the results of our analysis can be meaningfully related to political developments in these two states. The primary aim of this article, however, is to provide a mechanism-based explanation of how political modernization leads to the formation of nations, politicized ethnic groups, or populism. We suggest two strategies for future empirical work to explore the implications of the theory of nation building and ethnic politics that we have proposed here. First, cross-national historical data sets could be compiled to evaluate its major empirical propositions: that nation building results from strong state centralization and well-established civil societies, whereas ethnic closure emerges in weakly centralized states with weak civil societies, and populist forms of nationalism are supported by the combination of medium state centralization and weak civil societies (for a first attempt at such an empirical evaluation with a global data set, see Wimmer [2012]).

Second, narrative forms of historical inquiry could provide more detailed assessments of how the mechanisms identified in this article led to new forms of popular identity and the new relationships between states and citizens typical of the modern age. For example, one could trace whether the central elites began to embark on a project of nation building as soon as peripheral elites demanded public services and to integrate themselves into the state apparatus (instead of perceiving of centralization as a threat to their own social position). Similarly, it would be interesting to determine what role the provision of public goods by state elites plays in the development of popular identifications with a nationalizing state. The dialogue between our model and these two other forms of historical inquiry could of course go both ways. While historical research can further test derivations from and implications of the model proposed here, our analysis may in turn inspire historical research to develop mechanism-based and theory-guided explanations of particular historical trajectories.

Future work could also extend the temporal and geographical reach of the analysis offered here. Most important, one should incorporate the international dimension and study how it interacts with the exchange relationships between rulers and ruled that we put at the center of this study. Once nationalism was propelled onto the world stage by the French and American revolutions, it was adopted and "pirated," to use Benedict Anderson's felicitous term, by political movements and state elites across the world. Such diffusion processes might become important in later episodes of nation-state formation: from the establishment of the Turkish republic under Atatürk to the recent foundation of East Timor as an independent state.

Finally, our modeling framework can be adapted to study more con-

temporary issues. One could explore, for example, what happens when state capacity decreases after the nation has already been established as the dominant, generally accepted mode of classification (and thus become "banal" in Michael Billig's [1995] terms) and has created a corresponding trait distribution through processes of assimilation and boundary blurring. This was the situation of Latin American states in the era of neoliberal policy reform as described by Yashar (2005). According to her analysis, these states were no longer able to provide the public goods to uphold the clientelist, populist nationalism of the postwar era. Indigenous movements resulted from this shift in the exchange equilibrium. It would be fascinating to see whether this analysis holds up when tested with a properly specified and empirically calibrated version of the model introduced here.

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