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## Acemoglu, Johnson, and Robinson: the identification of historically contingent causal effects

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## Abstract

The Royal Swedish Academy of Sciences awarded the 2024 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel to Daron Acemoglu, Simon Johnson, and James A. Robinson "for studies of how institutions are formed and affect prosperity". This paper reviews the contributions of these three scholars to our understanding of the institutional causes of historical and contemporary economic development. We place their work in the context of the intellectual history of the fields of economics and economic history: these authors pioneered the quantitative analysis of historical natural experiments to identify the causal effects of political institutions. We then discuss a less widely discussed contribution of their work: the identification of historically contingent causal effects. Historical contingency, we argue, is at the heart of their conceptual and empirical insights. These insights clarify transformative processes in historical development, including: (i) European colonialism; (ii) the Atlantic Trade; and (iii) the French Revolution. More generally, they have implications for how we think about the path-dependence of political institutions and economic development: history has a long shadow, but that shadow shifts over time.

*Keywords*: Political institutions; economic development; natural experiments; historical contingency; critical junctures; Nobel Prize

JEL classification: B00; N00; O1; P00

## 1. Introduction

In 2024, Daron Acemoglu, Simon Johnson, and James A. Robinson (hereafter AJR) received the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel ("Nobel Prize" hereafter, for brevity). These three scholars were recognized "for studies of how institutions are formed and affect

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prosperity". This paper reviews the contributions of these three scholars to our understanding of the institutional causes of historical and contemporary economic development.

We begin with the well-known basics: AJR pioneered the quantitative analysis of historical natural experiments to identify the causal effects of political institutions. We discuss their most influential paper, "The colonial origins of comparative development: an empirical investigation" (Acemoglu et al., 2001, hereafter AJR (2001)), placing it alongside its intellectual precursors, and arguing that the paper represents the confluence of research advances in multiple fields in economics: the credibility revolution in labor economics; the associated emphasis on experimental evidence in economic development; the institutionalist approach in economic history; and, the cross-country empirical analysis of economic growth in macroeconomics. AJR (2001) synthesized the most ambitious ideas in all of these literatures, opening new frontiers in the empirical analysis of historical and contemporary economic development.<sup>1</sup>

The analysis of historical natural experiments pioneered by AJR has emphasized the historical persistence of important determinants of economic development. This is natural: AJR (2001) linked colonial settler mortality to historical political institutions, which persisted to shape contemporary political institutions and thus contemporary economic outcomes. The Scientific Background associated with the Nobel Prize for AJR prominently highlights "[t]he growing literature on historical persistence – a literature characterized by its emphasis on a research strategy designed to investigate how the past affects current outcomes – dat[ing] back to the seminal publications by Acemoglu, Johnson, and Robinson (2001, 2002)" (p. 4).<sup>2</sup> Yet, as also noted in the Scientific Background (footnote 19, p. 19), "historical persistence studies" run the risk of oversimplifying historical processes, compressing the period between the historical variation of interest and contemporary outcomes.

We highlight an aspect of the work of AJR that explicitly decompresses historical analysis: the important role of historically contingent causal effects in their study of historical development. This dimension of their work is under-appreciated – historical contingency is not mentioned in the Scientific Background to their Prize – yet we argue that the identification of historically contingent causal effects is central to their analyses of transformative processes in historical development. Historical contingency plays two roles in their

<sup>&</sup>lt;sup>1</sup>In a companion paper, Papaioannou (2025) provides a broader perspective on the laureates' many contributions.

<sup>&</sup>lt;sup>2</sup>See "Scientific Background to the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2024", written by The Committee for the Prize in Economic Sciences in Memory of Alfred Nobel, available at https://www.nobelprize.org/uploads/2024/10/advanced -economicsciencesprize2024.pdf.

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analysis of natural experiments. First, AJR often study "critical junctures" induced by exogenous events: for example, the arrival of colonists in the new world, the expansion of the Atlantic trade, or the occupation by Napoleon of parts of continental Europe. Moreover, AJR often document causal effects of these exogenous events that are themselves historically contingent, with effects that vary depending on subsequent external shocks. For example, the "reversal of fortune" they document among countries colonized by European powers (Acemoglu et al., 2002) emerges only after the development and diffusion of modern technologies following the Industrial Revolution. The same is true of the causal effects of Napoleon's institutional reforms in historical "Germany" (Acemoglu et al., 2011). The analysis of historically contingent causal effects, achieved by the decompression of the historical hiatus, precisely helps to avoid the oversimplification of historical processes characteristic of some persistence studies.

To illustrate the importance of incorporating historical contingency into the analysis of natural experiments, we present a simple empirical framework in which the decompression of history takes a specific form: time-varying shocks arrive, which potentially interact with the historical (quasi-experimental) variation of interest. We then apply this framework to their analyses of three processes: (i) European colonialism; (ii) the Atlantic Trade; and (iii) the French Revolution.

We conclude with a discussion of recent and future work by AJR that builds on their emphasis on historical contingency, rather than historical persistence. While the latter body of literature is already rich and highly influential, the former is emerging as an exciting area for work on the political economy of historical development. This work may emerge as yet another branch of important research with roots in the contributions of AJR.

## 2. A brief intellectual history of AJR (2001)

The last quarter century has seen an extraordinary rise in the prominence of historical analysis in the broader economics profession (Abramitzky, 2015; Margo, 2018; Cioni et al., 2021).<sup>3</sup> It is easy to pick out historical work among the highest-impact research across subfields in economics over this period, and much of this work relies on historical natural experiments: from economic growth and development (e.g., Acemoglu et al., 2001; Banerjee and Iyer, 2005; Nunn, 2008; Dell, 2010), to health (Bleakley, 2007; Alsan, 2015), environmental economics (Hornbeck, 2012), economic geography (Davis and Weinstein, 2002; Bleakley and Lin, 2012), to macroeconomics

<sup>&</sup>lt;sup>3</sup>We draw on Cantoni and Yuchtman (2021); refer to that work and Bisin and Federico (2021) for further discussion.

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(Imbens et al., 2001; Fuchs-Schündeln and Schündeln, 2005; Bleakley and Ferrie, 2016), and beyond.

We see the analysis of historical natural experiments as the outcome of changes across multiple fields in economics – the culmination of which was the publication of Acemoglu et al. (2001).<sup>4</sup> We first discuss these changes in the fields of labor economics, development, economic history, and macroeconomics. We then describe how AJR (2001) brought these developments together.

The "credibility Labor economics and the credibility revolution. revolution" (Angrist and Pischke, 2010) in applied microeconomics pushed economists across fields to find credible sources of (experimental or quasi-experimental) variation to answer their research questions, often implementing instrumental variable research designs to isolate exogenous variation in the explanatory variable of interest. Some of the earliest "quasi-experimental" work in labor economics in fact exploited historical natural experiments. Angrist (1990) identified the causal effect of military service on earnings by exploiting the Vietnam-era draft of US men, which implemented a lottery across men's birth dates. The lottery outcomes serve as an instrument to estimate the causal effect of military service on men's earnings. Angrist and Krueger (1991) study the effects of compulsory schooling laws – in conjunction with quasi-random variation in individuals' birth dates - to estimate the causal effect of schooling on earnings. Birth timing serves as an instrument for years of schooling, allowing the authors to estimate the causal effect of schooling on earnings. The broader body of methodological and applied work isolating causal effects was itself recognized with the Nobel Prize in economics in 2021, and has had enormous impact across economics (Hull et al., 2022).

*Economic development and the randomization revolution.* Reflecting the emphasis on identifying causal effects using (quasi-)experimental variation, the early 2000s saw the rise of randomized controlled trials (RCTs) and impact evaluation as the "gold standard" in empirical economic development research (Gertler, 2004; Miguel and Kremer, 2004; Banerjee and Duflo, 2009). This literature has changed the nature of economic development research as well as economic development policy. Its academic and policy impacts were recognized with the Nobel Prize in economics in 2019 (Olken, 2020).

<sup>&</sup>lt;sup>4</sup>We do not argue that the analysis of historical natural experiments would not have arisen as a methodology had AJR (2001) not been published. Rather, we believe that this work represented a substantial enough advance of the scientific frontier to coordinate and inspire future work (it is telling that all of the papers cited above post-date Acemoglu et al., 2001).

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While RCTs were undoubtedly a huge step forward in the analysis of economic development and policy impact evaluation, there was a tendency for something of a "streetlight effect" (Deaton, 2010): a focus on the types of research questions that could be answered by conducting an RCT. This can lead to the neglect of explanatory variables of interest that cannot be randomized because of ethical constraints, funding constraints, or logistical constraints. In such a setting, identifying the causal effects of some of these difficult to randomize variables of interest by examining natural experiments provided by history held the promise of answering big questions with credible identification.

*Economic history beyond the cliometric revolution.* The empirical methods of economic history (as practiced by economists, rather than by historians) have, over the last half-century, converged toward those of applied microeconomics more generally. This dates back to the cliometric revolution of the 1960s, which brought quantitative analysis and regressions into economic history research – with its best-known example, *Time on the Cross* (Fogel and Engerman, 1974). In addition to the methodological evolution, topically the field moved toward the appreciation of the analysis of "institutions" – the political "rules of the game" – as fundamental factors shaping economic outcomes (e.g., North and Thomas, 1973; North, 1990). The quantitative analysis of historical processes and the historical analysis of political institutions were also rewarded with the Nobel Prize (Eichengreen, 1994; Myhrman and Weingast, 1994).

The next step in this research agenda was to make causal arguments regarding institutions' consequences in a manner that aligned with the (quasi-)experimental approach taken by applied microeconomists and development economists. Working within the cliometric tradition, Engerman and Sokoloff (1997) took an important step in this direction, applying an experimental lens to the analysis of history and development. They analyze the colonization of the Americas as an experiment in which agricultural suitability varies, allowing for the identification of causal forces. They link geography to development, highlighting the path from geographical endowments (e.g., suitability for plantation agriculture in the Americas) to political and economic institutions (e.g., slavery) to contemporary poverty. This work shares some substantive features with AJR (2001), but was less focused on the causal role of institutions *per se* and did not apply the quasi-experimental empirical toolkit to establish causal effects.

*The empirical revolution in macroeconomics.* A final important strand of research leading up to AJR (2001) was a highly influential – and, at the time, revolutionary – approach to understanding the causes of economic growth:

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the use of cross-country national income data (most importantly, Summers and Heston, 1988) and regression analysis to establish statistically significant associations in the data. Cross-country growth regressions indicated plausible drivers of economic growth (Barro, 1991) and allowed for tests of theories of growth, for example, tests of convergence of income across countries (Barro and Sala-i-Martin, 1992; Mankiw et al., 1992). They shed new light on the historical determinants of financial market development (La Porta et al., 1998), and they investigated the association between growth and factors such as corruption, social capital, or institutions and economic growth (Mauro, 1995; Knack and Keefer, 1997; Hall and Jones, 1999). However, causal inference in these regression models was always undermined by the lack of exogenous variation in the explanatory variables of interest. There was a clear need to identify plausibly fundamental causes of economic growth, and to isolate exogenous variation in such factors.

*The confluence of these currents.* Accomoglu et al. (2001) powerfully unite the intellectual currents described above. The paper has had an extraordinary impact and is well-known, having been cited nearly 19,000 times as of March 2025 (according to Google Scholar). It aims to estimate the causal effect of contemporary political institutions (operationalized as protection against expropriation risk) on contemporary income per capita (in 1995).

AJR recognize that contemporary political institutions are endogenous: they are correlated with many other variables that themselves play a role in determining income. To overcome the endogeneity problem, the authors propose an instrumental variable: historical settler mortality. The instrument is relevant, they argue, because historical settler mortality shaped historical institutions – more inclusive institutions were installed where colonists could settle and survive – and historical institutions tended to persist. Indeed, there exists a strong first-stage relationship between historical settler mortality and contemporary expropriation risk. The exclusion restriction cannot directly be tested, but the authors argue that the disease environment affecting European colonists was not a burden on local populations, and that it was generally not relevant to growth potential other than through colonial settlement and institutions.<sup>5</sup> Finally, AJR (2001) estimate a two-stage least-squares model in which settler mortality predicts contemporary institutions in the first stage, and this exogenous component of contemporary institutions predicts income

<sup>&</sup>lt;sup>5</sup>Relying on a "conditional independence" argument, the authors show that their instrumental variable results are robust to controlling for plausible factors of violation of the exclusion restriction, such as contemporary prevalence of malaria, life expectancy, infant mortality, or the share of population of European descent (see tables 6 and 7 of Acemoglu et al., 2001).

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in the second stage. The estimated effects of institutions on income are large and statistically significant.

This work thus builds on the institutionalist and comparative economic history literature of North (1990) and Engerman and Sokoloff (1997) with its focus on institutions and its archival research linking institutions to historical colonial practices and settler mortality. It applies a credible, quasi-experimental research design emphasized in modern applied microeconomics since the "credibility revolution" (Angrist and Pischke, 2010). Finally, it provides a compelling fusion between the big picture, cross-country macroeconomic analysis of growth (e.g., Barro, 1991), and the experimental emphasis in microeconomic work on economic development (summarized in, e.g., Banerjee and Duflo, 2009). The result was a path-breaking paper that was institutional, historical, quantitative, and causal.

## 3. Historical contingency in the research of AJR

AJR (2001) is a prime example of historical natural experiments generating effects that persist to shape contemporary development outcomes. While persistent impacts of institutional change arising from critical junctures (e.g., colonialism) are a central feature of the broader body of work by AJR, we believe that historical contingency is just as central. Historical contingency plays two roles in their analysis of natural experiments.

First, in much of their work, historically contingent events – critical junctures such as colonization by European powers – generate exogenous variation exploited in their empirical analyses. This is in line with a historiographical tradition emphasizing contingency, as opposed to historical determinism, and is also reflected in the concept of critical junctures discussed in the later work by Acemoglu and Robinson (2012, 2019).<sup>6</sup>

Second, in some of their most influential work, historical variation has heterogeneous effects across time, depending on historical events that arise after the historical natural experiment. Both in the initial critical juncture and in the subsequent historical events, randomness is thus introduced into historical processes, and there exist moments when human agency (either individual or collective) can be expressed to shape historical outcomes. To emphasize this dependence of the effect of the initial historical variation on subsequent historical events, we use the concept "historically contingent

<sup>&</sup>lt;sup>6</sup>The philosophical argument for historical contingency was made by Berlin (1969). For discussions of critical junctures in historical development, see, among others, Capoccia and Kelemen (2007), Collier and Collier (2015), and Callen et al. (2024).

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causal effects". Uncovering these effects requires a decompression of history, which is evident in both their quantitative analysis and in their use of qualitative, historical evidence. We present a simple empirical framework through which we illustrate this decompression, applying it to their analyses of three processes: (i) European colonialism; (ii) the Atlantic Trade; and (iii) the French Revolution.

#### 3.1. Empirical framework

The basic (compressed) long-run causal effects empirical model explains a contemporary outcome,  $y_i^c$  (for cross-sectional unit *i*), with a historical explanatory variable,  $x_i^h$ , where the superscript *c* denotes a contemporary measurement of the variable and the superscript *h* a historical measurement.

This can be written simply as

$$y_i^c = \beta_0 + \beta_1 \times x_i^h + \varepsilon_i.$$

In some analyses, to pin down the causal effect of  $x^h$  on  $y^c$ , quasi-random variation in  $x^h$  arising from a historical instrumental variable,  $z^h$ , is exploited. We can thus specify a general first stage in the analysis of long-run causal effects as

$$x_i^h = \gamma_0 + \gamma_1 \times z_i^h + \eta_i.$$

One would typically interpret a second-stage regression of  $y_i^c$  on  $\hat{x}_i^h$  (predicted in the first stage) as the causal effect (i.e., local average treatment effect) if  $z^h$  is relevant and satisfies the exclusion restriction, that is, if

$$cov(z^h, x^h) \neq 0$$
  
 $cov(z^h, \varepsilon) = 0.$ 

This model captures the flavor of much of the historical persistence literature. Consider a ground-breaking paper, Nathan Nunn's study of the persistent impact of the slave trade on Africa's economic development (Nunn, 2008). Nunn studies the impact of a country's historical exposure to the slave trade  $(x_i^h)$  on its current (i.e., year 2000) income  $(y_i^c)$ . To isolate exogenous variation in a country's exposure to the slave trade, Nunn uses distances from each African country to the primary locations where enslaved people's labor was demanded  $(z_i^h)$ .

This empirical framework allows one to isolate causal effects of historical variation. Yet, the framework alone misses a crucial component of the analysis of long-run causal effects: the passage of time.<sup>7</sup> Suppose there

<sup>&</sup>lt;sup>7</sup>Nunn (2008) recognizes this, and complements the instrumental variables analysis with historical qualitative and quantitative evidence suggesting that political collapse and ethnic

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exists an intermediate period m between moment c when the outcome is observed and the moment h when the variation in the explanatory variable of interest is induced. This middle period may be decades, centuries, or millennia, depending on the time interval between the historical variation and the contemporary outcome. The key point is that it is long enough on a historical scale for important time-varying shocks,  $S^m$ , to arise, and for intermediate outcomes,  $d_i^m$ , to result from the initial effects of the explanatory variable of interest.

Suppose, for simplicity, that these shocks arise idiosyncratically and uniformly across cross-sectional units (i.e., they do not arrive endogenously). The time-varying shocks may interact with the intermediate-period level of the explanatory variable,  $x_i^m$ , the instrument,  $z_i^m$ , or any variables resulting from the historical variation in  $x_i^h$  (i.e., the intermediate outcomes  $d_i^m$ ).

This implies that the long-run outcome,  $y_i^c$  can be modeled as

$$\begin{aligned} y_i^c &= \beta_0 + \beta_1 \times x_i^h + \beta_2 \times S^m \times x_i^m \\ &+ \beta_3 \times S^m \times d_i^m + \beta_4 \times S^m \times z_i^m + \varepsilon_i. \end{aligned}$$

This equation suggests that historical shocks  $(S^m)$  may be relevant in multiple ways: first, by interacting with variation in  $x_i^m$ ; second, interacting with outcomes induced by historical variation in  $x_i$  (i.e.,  $d_i^m$ ) or interacting with a historical instrument  $z_i^m$ .

Interactions with  $x_i$  or  $d_i^m$  imply a historically contingent mechanism through which the historical variation,  $x_i^h$ , affects the contemporary outcome  $y_i^c$ . This mechanism is related to the effects uncovered by mediation analysis (e.g., Imai et al., 2011; Huber, 2020), but crucially differs in that there is no structural or deterministic mechanism linking  $x_i^h$  to  $y_i^c$  in this case. Rather, the "mediating" mechanism only arises in the long-run setting because of the particular historical shocks,  $S^m$ , that happened to arrive. In this sense, the causal effect estimated has to be understood as historically contingent.

As we discuss further below, Napoleon's invasion of historical Germany provides an example of this sort of historically contingent causal effect: Napoleon radically changed political institutions in Germany  $(x_i^h)$ , but these only affected incomes in the long run, following the historical shock  $(S^m)$  of the Industrial Revolution.

Interactions with  $z_i^m$  would represent a dynamic violation of the exclusion restriction, and thus spurious causal effects. We focus on the cases of

fragmentation are plausible mechanisms linking the slave trade to contemporary development outcomes. Nunn also explicitly considers the passage of time in a complementary study of the mechanisms through which the historical slave trade persistently affected African culture and society (Nunn and Wantchekon, 2011), documenting the transmission of a low-trust culture in locations more exposed to the slave trade.

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historically contingent causal effects that arise even when the exclusion restriction holds; that is, the results of time-varying shocks interacting with  $x_i$  or  $d_i^{m.8}$  Both types of interactions play an important role in history, as AJR have elegantly shown in their work.

#### 3.2. The causal effect of European colonialism

Acemoglu et al. (2002) – "Reversal of fortune: geography and institutions in the making of the modern world income distribution" – is one of the laureates' most influential papers. This paper documents that, among countries that were colonized by European powers, those that had the highest population density prior to European arrival (and thus were more economically developed at that time) had lower incomes in the late 20th century – a "reversal of fortune" occurred since European arrival.

This paper simply could not be understood in terms of a simple model linking historical variation to contemporary outcomes, even if that variation were exogenous. Suppose, in our empirical framework above, that  $x_i^h$  is historical population density, and suppose that it was shaped by random geographical variation, such as climate, agricultural suitability, or ruggedness,  $z_i^h$ . In this hypothetical case, could one interpret the contemporary variation in income as the causal effect of historical population density (the second-stage estimate)? Or of geography (the reduced form)? We would argue not.

As Acemoglu et al. (2002) show, geography and pre-colonial population density have effects that fundamentally change over time after the shock of European arrival. The effect of geography of a certain type (e.g., a warmer climate) on development outcomes may have been positive prior to European arrival. However, colonial institutions (an intermediate outcome  $d_i^m$ ) were introduced in a manner associated with pre-colonial population density and societal institutions found by European colonists. This reshaped the effects of historical population density on contemporary development. In particular, more extractive institutions were introduced precisely where initial geography was more favorable to pre-colonial development and where population density was highest. This means that geography may have had both persistent, positive causal effects on economic development prior to colonial arrival and in the first centuries of the colonial era, and negative effects afterwards. Indeed, time-series evidence in the paper (see their figure IV) suggests persistence on through the 18th century.

<sup>&</sup>lt;sup>8</sup>Note that even in the absence of significant interactions between  $S^m$  and  $x_i$  or  $d_i^m$ , the causal effect of  $x_i^h$  is historically contingent – in this case, contingent on the specific experience of no meaningful economic shocks following the historical variation of interest.

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Crucially, the arrival of European colonists is not the only source of historical contingency in the analysis done by AJR: it was the arrival of opportunities to modernize the economy following the Industrial Revolution – a second time-varying shock – that explains the change in direction of treatment effects, not colonialism alone. The shock of the Industrial Revolution increased the value of colonial institutions that were less extractive. Thus, initially favorable geography and greater population density ultimately had negative "effects" on contemporary development, and inclusive post-colonial institutions a positive effect, after 1800.

### 3.3. The causal effect of the Atlantic Trade

Acemoglu et al. (2005) – "The rise of Europe: Atlantic trade, institutional change, and economic growth" – shifts attention to Europe, from its colonies. At first glance, this paper appears to be simply about the persistent, positive effect of the Atlantic trade on those countries with access to it, and within them, the cities that were Atlantic trading ports. In our framework, one can conceive of a historical  $x_i^h$  that is the volume of Atlantic Trade (induced by geographical access), which (post-1500) causally shapes economic development. Indeed, this is the overarching argument in the paper. However, this would be too simplistic a treatment of a rich paper, in which historically contingent causal effects are again central to the analysis.

Historical contingency in the paper is evident in the heterogeneous effects of access to the Atlantic:

- over time the location on the Atlantic coastline only matters post-1500, when trans-oceanic trade expanded, and not before the European conquest of the Americas;
- (2) across countries, depending on initial institutions those countries with institutions that constrained their monarchs benefited most from access to the Atlantic Trade.

Whereas Britain and the Netherlands – and there, port cities in particular – profited from Atlantic trade, the effect is more muted for Portugal and Spain.

By decompressing the historical span between the rise of Atlantic trade and the economic outcomes of interest, Acemoglu et al. (2005) can shed light on the intervening mechanisms, and thereby better explain the time-varying nature of the effects of the Atlantic trade on economic development. The authors show that locations with initially more favorable institutions saw further institutional change toward empowering merchants, which induced

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further economic development.<sup>9</sup> In our framework, the initial variation in  $x_i^h$  produced an intermediate outcome of institutional change,  $d_i^m$ , which itself caused further economic development. At the heart of this paper is thus an institutional multiplier that is an outcome of the initial economic shock, and which magnifies the effect of the Atlantic trade on economic development; this dynamic development is precisely an outcome of historical contingency, rather than simply a persistent effect.

#### 3.4. The causal effect of the French Revolution

In their paper, "The consequences of radical reform: the French Revolution", Acemoglu et al. (2011) offer another example of a first-order historical process that cannot be understood without reference to historical contingency. Here, they study the persistent development effects of an exogenous institutional change  $x_i^h$ , induced by the quasi-random occupation of German territories by French revolutionary and Napoleonic troops. Again, there would be a temptation to read the paper in terms of a simple causal effect of a historical natural experiment: some territories in historical "Germany" were occupied by Napoleon and had their institutions reformed; other *ex ante* very similar territories were not occupied and did not experience reform. By 1900, those "treated" by reform exhibited higher urbanization rates (i.e., they were more developed).

Yet, this suggestion of a simple "shadow of history" is an incomplete description of the authors' analysis: exploiting the richness of their panel data, they show that in the first half of the 19th century, there are no differences between those locations that experienced reform and those that did not. Only once the time-varying shock of the opportunity to industrialize arrived in the second half of the 19th century do we observe the effects of institutional change:  $S^m$  interacts with  $x_i^m$ . This is sensible: institutional modernization may be most valuable when there exist opportunities to engage in productive economic change. Crucially, the shadow of the French Revolution shifted, which the dynamic analysis in this paper reveals.

#### 4. Conclusion

AJR have had an enormous impact on our understanding of how the past influences the present, especially through fundamentally important political

<sup>&</sup>lt;sup>9</sup>Importantly, the availability of historical panel data on outcomes such as urbanization is crucial to decompress the historical analysis and provide a richer picture than a simple persistence study, as sketched in the econometric framework above.

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institutions. Many scholars now follow in their footsteps, and a massive body of literature on historical persistence has emerged, producing a wide range of deep insights on historical development across time and space (much of this work is discussed and referenced in Michalopoulos and Papaioannou, 2017a,b,c). The best of this work, like that of AJR, "decompresses" history and uses both qualitative historical evidence and quantitative analysis to trace the historically contingent impact of historical variation on contemporary outcomes.

We see an exciting, complementary current of work emerging that is more directly inspired by the historical contingency dimension of the analysis by AJR. This work studies the critical junctures during which historical contingency expresses itself – sometimes as institutional change, and sometimes as persistence of the status quo (Callen et al., 2024). This work builds on the emphasis put by AJR on institutional change as a fundamental driver on growth, often engaging with critical junctures in real time to understand this process. Examples of such work include studies of political movements aimed at achieving political rights (e.g., Cantoni et al., 2019; Bursztyn et al., 2021), studies of elections that occur in contexts of democratic institution building (Callen and Long, 2015) or democratic backsliding (Baysan, 2022; Acemoglu et al., 2024), and studies of attempts to build a nascent state (Weigel, 2020; Sanchez de la Sierra, 2021). This emerging area of work, we expect, will be another dimension of the persistent, yet always changing, impact of AJR.

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