



Path dependence and transitions from tyranny to democracy: evidence from ancient Greece

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Abstract

For empirical research on the effects of institutions, an important question is whether a given institutional type will generate different outcomes depending on the circumstances that give rise to that institution. In this paper, we examine a unique historical episode in which a specific type of institution—rule by a tyrant—arose in similar states yet differed in terms of whether the impetus came from local support or external influences. Over the course of the sixth century BCE, a substantial subset of Greek *poleis* (city–states) experienced a period of tyranny. In some cases, the tyrant came to power with the support of local elites, yet in other cases, the tyrant was imposed by a conquering power, Persia. Although it is likely that the tyrants’ proponents—whether local elites or Persian rulers—sought to increase stability and maintain policies necessary for wealth creation, the long run effects of tyranny differed: In *poleis* where the rise of a tyrant would have depended on local support, a record of tyranny predicts a greater propensity for subsequent development of democracy. By contrast, in *poleis* where the rise of a tyrant would have depended on Persian support, a record of tyranny has a weak (and perhaps negative) association with subsequent development of democracy. These findings illustrate both the long-run importance of institutional paths and the difficulty in transplanting institutions.

Keywords Political economy · Ancient Greece · Path dependence · Institutions

JEL Classification H1 · H4 · K00 · N00 · O1

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Tyranny as it developed in the Greek cities in the archaic age would seem to have been initially an indigenous growth, independent of any intervention by foreign powers. ... Yet by the late sixth century, ... tyranny, at least in the Aegean Greek world, was becoming increasingly associated in the Greek mind with Persian rule and Persian intervention.

-Austin (1990, 289)

1 Introduction

The fundamental factor that makes analysis of institutions—of their causes and effects—so difficult is lack of variation. Institutions simply do not change very often, nor do the factors that have been hypothesized to affect the development of institutions (e.g., ethnic fractionalization, religion, colonial origin, distance from the equator). Natural experiments involving institutions are correspondingly rare. Ideally, one would like to examine a circumstance in which identical institutions were established in similar places but through different means or for different reasons, and investigate whether the effects of the institutions differ. But similar institutions established in similar places are usually established via similar means and for similar reasons (as far as one can tell), and different means and reasons in different places appear to result in different institutions.¹

Yet there is an exception—a particularly interesting source of institutional variation that we examine in this paper. In the mid-sixth century BCE, Persia conquered a swathe of Asia Minor, including a number of Greek *poleis* (city-states); Greek *poleis* were spread throughout the Mediterranean at that time. Persian practice was to make use of indigenous institutions to govern conquered peoples, and a notable (although far from universal) Greek institution was the tyrant. Although the term “tyrant” did not then have the same negative connotation it has today, it did signify rule by a strong executive with few formal checks on his power. Tyrants first arose endogenously in a number of mainland Greek *poleis* in the seventh and sixth centuries BCE—a period termed “the Age of the Tyrant” (e.g., Andrewes 1956, 8; Raaf-laub and Wallace 2007, 43)—typically superseding wealth-based aristocracies and coming to power with the support of commercial elites. Thus, we observe tyranny in some (but not all) of the *poleis* in Asia Minor conquered by Persia and in some

¹ Most investigation has therefore focused on explaining differences in institutions as the result of differences in the places or in the means of establishment or both. While such studies may be very enlightening, they are not natural experiments, and suffer from an inability to rule out innumerable alternative explanations for whatever is found. The article perhaps most similar to our own is Berkowitz et al. (2003) widely cited study of “transplanted” legal institutions (such as common law, civil law, etc.). The authors find that legal institutions transplanted (i.e., established in states with a history of other legal orders) under propitious conditions thrive and promote economic growth while those transplanted in more adverse conditions do not. More specifically, they conclude that in states that developed legal institutions organically, voluntarily adapted transplanted institutions, and/or had populations who were familiar with the corresponding legal principles, the institutions took root and functioned effectively, while in states lacking these pre-conditions, the institutions did not.

(but not all) of the mainland *poleis* not conquered by Persia. This provides a valuable source of variation, because *poleis* under Persian control were otherwise very similar to their mainland contemporaries, sharing history, culture, and supporting political institutions.²

We use this variation to explore whether similar institutions established in similar places but by different means have different effects.³ We employ a unique database that provides information on the political institutions of nearly 200 ancient Greek *poleis*. Augmenting the database with geographical information, we are able to investigate how differences in the manner in which tyranny was established affects subsequent transition to democratic institutions. We should note that information on precisely what activities tyrants engaged in is somewhat sketchy, but it appears—plausibly—that tyrants were supported in each instance (i.e., by local elites and by Persian conquerors) as a means of reducing conflict and thus raising the supporters' wealth.

We find empirical evidence consistent with different reasons for establishing tyrannies and correspondingly different long run effects of tyrannies on future institutions. Endogenous tyrants were established primarily in coastal *poleis*, where potential gains from commerce-promoting investment were greatest; by contrast, exogenously imposed tyrants were established in both inland and coastal locations (but by no means in every *polis* that Persia controlled). Looking at the long run effects, endogenous tyrants are strongly associated with the later emergence of democracy (even controlling for coastal location), while exogenously imposed tyrants are not (indeed, the association is negative).

Our analysis thus serves to highlight the importance of the institutional path. Where tyrants arose endogenously, tyrannies were likely to generate conditions conducive to future democratization—because the endogenous tyrants tended to come to power when their effects on economic performance created broadly shared economic growth. This is why we see empirically that *poleis* with episodes of endogenous tyranny in the Archaic period were more likely (relative to *poleis* without such episodes) to establish democracy in the later Classical period (490–323 BCE).⁴

² The *poleis* in Asia Minor that fell under Persian control were every bit as Greek as those located on the Greek mainland; most were settled by Greek diaspora (and invaders) in the years of flux and dislocation following the collapse of Mycenaean civilization circa 1100 BCE. The main pre-Socratic philosophers were based in the Anatolian *poleis* Ephesus and Miletus. The philosopher and mystic Pythagoras was born on the island of Samos. The historian Herodotus was from the Anatolian *polis* Hallicarnasus. In the fifth century, many of these eastern *poleis* banded with Athens to fight the Persians, forming the Delian League.

³ As far as is known, the institution itself—rule by a tyrant—functioned similarly across the two sets of states. That said, because the Persians established institutions in order to further Persian rule, their aims presumably differed from those of the commercial elites who had supported adoption of tyrants in *poleis* not under Persian control.

⁴ Although we cannot observe the details of the policies tyrants (or Persians) followed, we can observe systematic differences in the types of locations, consistent with the different likelihoods of subsequent democracy we identify. See Fleck and Hanssen (2013) for a more extensive discussion of the link between endogenous tyranny and democracy.

There is a very large literature on the link between institutions and economic performance.⁵ For example, it is widely recognized that, in the modern world, citizens of democracies enjoy higher levels of income and faster rates of economic growth than do citizens of non-democracies. For these (and related) reasons, many scholars, commentators and politicians have, over the years, advocated the active “promotion” of democracy (see, e.g., Walt 2016 for a discussion). Those who oppose such “nation building” projects typically do so on the grounds that the transplants are unlikely to take root. Our analysis suggests that an even more important issue is whether, even if it takes root, a transplanted institution will have the same effect as where it develops endogenously. North (1990) famously defines institutions as “the humanly devised constraints that structure political, economic, and social actions.” There appears little reason to expect the functioning of the constraints to be invariant to the nature of the human device, and our results provide evidence that they are not.

2 Historical background

2.1 The Greek *poleis*

The organizational form known as the *polis* developed in Greece following the collapse of Mycenaean civilization circa 1150 BCE.⁶ A typical *polis* encompassed a main city (from which it often took its name), surrounding farmland, and perhaps smaller villages in the vicinity. A “city–state” was indeed a state—politically independent and often at war with its neighbors. During the Classical period, a medium-sized *polis* had a population of no more than a few tens of thousands (less than half of whom would have been citizen males) and covered an area of perhaps 200–300 square kilometers (Ober 2008, 45), while a small *polis* may have had as few as 1000 male citizens (Cartledge 2009, 78). The largest *polis* by population was Athens with

⁵ See, e.g., Lipset (1959), North and Weingast (1989), Barro (1997), Justman and Gradstein (1999), Acemoglu and Robinson (2000, 2001, 2012), Fleck (2000), Boix (2003), Hanssen (2004), Lizzeri and Persico (2004), Llavador and Oxoby (2005), Jack and Lagunoff (2006), Acemoglu et al. (2008, 2009) and Treisman (2015). A burgeoning economics literature investigates the roots of, and incentives created by, the political and legal institutions of ancient Greece. Fleck and Hanssen (2006, 2013) explore how the potential for economic development led to the expansion (and at times contraction) of political rights, and how those changes in political rights in turn supported economic development. Fleck and Hanssen (2018) track the rise of democracy in ancient Greece, and its link to wealth. Fleck and Hanssen (2016a, b) explore the institutional underpinnings of Athenian success, and the efforts the Greeks dedicated to developing wealth-enhancing democracies. Kaiser (2007) analyzes the incentive structure of the way Athens funded the provisioning of warships. See also Schwartzberg (2004), Lyttkens (2006), Ober (2008, 2015), Fleck and Hanssen (2009, 2012), McCannon (2012) and Pitsoulis (2013), among others.

⁶ Scholars typically divide the history of ancient Greece into four periods: the Mycenaean period (1600–1150 BCE), the Dark Ages (1150–800 BCE), the Archaic period (800–480 BCE), and the Classical period (480–323 BCE). The Dark Ages were a clear break with the political and economic structures of the preceding Mycenaean period. Mycenae had highly centralized, highly bureaucratic palace economies, more like those seen in Crete at Knossos (and in Egypt and other near Eastern civilizations) than like the later Greek city-states. See, e.g., Murray (1993, 18) and Pomeroy et al. (1999, 39).

30–50,000 male citizens (and approximately 200,000–300,000 total residents), and by territory was Sparta, which encompassed 8500 square kilometers. More than 1000 *poleis* have been documented in literary sources or through archaeological excavation (see Hansen and Nielsen 2004), although only for somewhat less than a fifth of them is information sufficient to characterize the nature of their political institutions in even the most basic of terms (more on that in the next section).

The collapse of Mycenaean civilization may have been hastened by invaders, or it may have attracted invaders. Whatever the case, the first century or so of the Dark Age saw waves of migration to the Greek mainland from the north, and from the Greek mainland to cities around the Mediterranean (and around the Aegean, in particular). Most of the *poleis* on Asia Minor that would fall under Persian control in the sixth century were founded at this time. Somewhat later, a number of *poleis* (both on the mainland and elsewhere) sent out colonists, leading to the establishment of even more *poleis*. By the Classical period, “Magna Graecia” spanned an area stretching from the eastern coast of Spain to the far shore of the Black Sea.

Irrespective of their location, Greek *poleis* shared important features. Their citizens spoke the same language (with some regional dialects), worshiped the same gods (with *polis*-specific emphasis), and were of the same ethnic stock.⁷ They employed the same military tactics—the hoplite phalanx—most frequently against each other.⁸ As noted, they were independent states, establishing policies and making war as their citizens saw fit.

Most importantly for our purposes, their political institutions were fundamentally similar.⁹ All Greek *poleis* distributed power very broadly by the standards of the time (or by the standards of any time until the last 200 years or so). A prominent role in policymaking was played by the popular assembly, to which all male citizens belonged. The agenda for assembly meetings was set by a council whose membership rotated and might (or might not) be subject to wealth restrictions. Day-to-day affairs were overseen by boards of magistrates, typically serving fixed terms.

2.2 The Persian conquest

One distinguishing feature would have a profound effect on Greek *poleis*—distance from Persia.¹⁰ Figure 1 shows the extent of the First Persian, or Achaemenid,

⁷ The eastern Greeks shared their accents with those of the mainland (with the Dorian Peloponnese, for example, in the case of the *polis* of Lindos on the island of Rhodes, or with Ionian Athens in the case of Ephesus or Miletus).

⁸ Wars between *poleis* were a frequent occurrence throughout the Archaic and Classical periods (e.g., Hanson 1983).

⁹ See, for example, Ober (2015) and Teegarden (2014).

¹⁰ As Herodotus recounts, the famously wealthy King Croesus of Lydia (Lydia occupied part of what is modern Turkey) incorporated many of these *poleis* into his empire, only to be crushed shortly thereafter by the newly risen Persians under Cyrus the Great in about 550 BCE. While the Lydians demanded tribute and assistance in time of war, they did not otherwise interfere with Greek institutions. Austin (1990, 294) writes that, in contrast to the Persians, the Lydians “were not credited with the promotion of tyranny specifically. Whatever the similarities between Lydian and Persian rule from the Greek point of view, here was one of the differences.”

empire, shortly before its two attempts to invade the Greek mainland. The empire was enormous, encompassing the Middle East, parts of North Africa, the Balkan and Black Sea regions, and central and western Asia, stretching east from modern Libya to modern India, and north from Saudi Arabia to Turkey and Afghanistan.¹¹ Greek *poleis* that fell under Persian rule in the sixth century BCE (and were subsequently liberated) were for the most part concentrated on the eastern coast of the Aegean, although a number bordered the Black Sea or the Mediterranean along the southern coast of modern Turkey.

The Persian approach to ruling conquered *poleis* involved building on existing Greek institutions. Georges (2000, 7) writes that “Students of the Achaemenid system emphasize the Persians’ conscious intention to accommodate their rule to their subjects’ ways of material life, religion, and culture.” Austin (1990, 290) writes “it was the practice of the Persians, from Cyrus the Great onwards, to work with the existing institutions of the peoples and countries that came under their power.” Tyrants were a feature of many Greek *poleis* during the Archaic period, and thus a natural vehicle for Persian rule. Meiggs (1972, 24) writes, “The natural sequel of Persia’s incorporation of the eastern Greeks was the institution or encouragement of local rulers who could be relied upon.”¹²

2.3 The Greek tyrant

The word “tyrant” (*tyrannos*) has a non-Greek origin, and its original meaning has been lost.¹³ In the Archaic period, a Greek tyrant was a strong executive, but not necessarily the despot the term today implies. Indeed, Aristotle distinguished the “half-bad” mainland tyrants from the other “all-bad” tyrants. Austin (1990, 289) writes,

tyranny as it developed in the Greek cities in the archaic age would seem to have been initially an indigenous growth, independent of any intervention by foreign powers. It then became a constantly recurring phenomenon of Greek political and social life, so long as the Greeks enjoyed an independent history. ... Yet by the late sixth century, and certainly no later than the outbreak of the

¹¹ The Achaemenid empire was conquered in turn by Alexander the Great, circa 330 BCE. See, e.g., Briant (2002).

¹² Scholars emphasize that tyrants were a uniquely Greek institution, and differed fundamentally from the types of rulers in Babylon, Phrygia, and Lydia (Georges 2000, 12). Greek tyrants maintained claims of independent legitimacy, as befit a uniquely Greek institution. Georges (2000, 12) writes, “It was for this reason that Evagoras of Salamis [a Greek *polis*] was to demand to the Persian emperor that he obey only as king to king. We shall see that Herodotus’ account of Aristogoras’ dealings with the Persian grandees ... is best understood in this light, or Aristogoras’ own similar consciousness of his independent position.”

¹³ Its earliest appearance in extant writing is in work by the Archaic poet Archilocus (circa 7th c. BCE) referring to Gyges of Lydia, a wealthy non-Greek territory in Asia Minor (Andrewes 1956, 21). Some scholars have suggested that *tyrannos* is distinguished from *basileus*, the Greek word for king, in that kingship is hereditary while tyranny is not (e.g., Drews 1972, 137). The problem with this explanation is that many ancient writers—Sophocles, Herodotus—appear to employ the terms somewhat interchangeably; see Parker (2007, 15).

so-called ‘Ionian revolt’ in 499 B.C., tyranny, at least in the Aegean Greek world, was becoming increasingly associated in the Greek mind with Persian rule and Persian intervention. The association contributed in no small way to the growing unpopularity of this form of government in this part of the Greek world.

We will begin by discussing what is known about the mainland Greek tyrants. We will then turn to how Persia-supported tyrants may have differed. For more extensive discussion of the history that underlies our dataset, see Fleck and Hanssen (2013) and Teegarden (2014).¹⁴

Although it has long been agreed that the Archaic period “Age of the Tyrant” was a time of commercial dynamism in Greece, and that tyrants arose where elites were divided, precisely why this unique institution developed remains a puzzle. Interpretive difficulty is compounded by the fact that, although many men were called tyrants by contemporary or later writers, “tyrant” was not an official title (there was no “office of tyrant”).¹⁵ As far as can be determined, most tyrants held regular magistracies (important posts once restricted to the nobility). Although a given *poleis* may have had many several magistrates, a tyrant used his office to exercise disproportionate power.

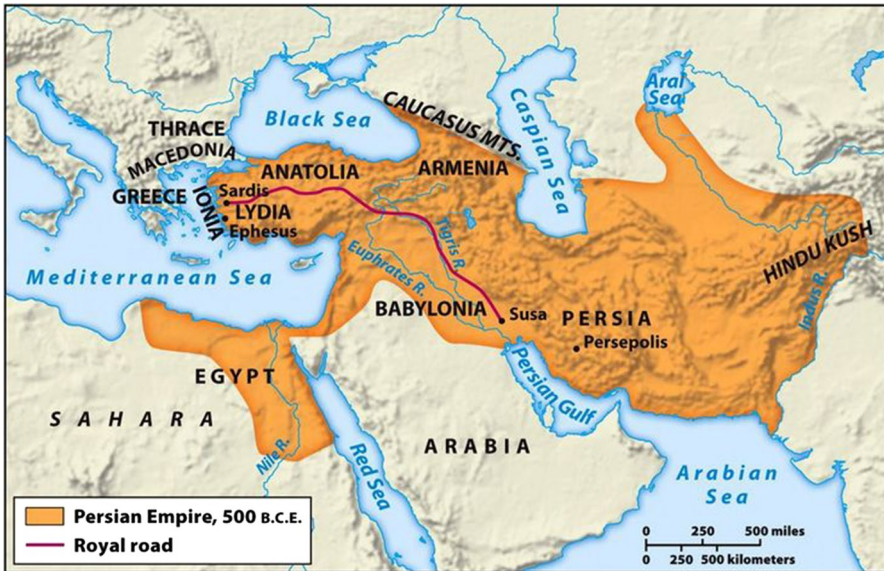
Various explanations have been advanced for the rise of the Archaic period tyrant on the Greek mainland.¹⁶ Recent work emphasizes that, in face of the tensions brought about by the Archaic period’s re-integration of Greek *poleis* into regional trade routes, tyrants suppressed intra-elite conflict and established conditions under which *poleis* could thrive economically, which benefitted not only the commercial elites but the broader *demos*. Starr (1977, 65) writes of Archaic Greece, “As far as one can see, bulk trade grew markedly both in volume and in the variety of items, though coinage and other aids to supple economic activity were not yet widely employed.” This led to a situation where, as Drews (1972, 131) states, “Distressed that aristocrats monopolized all political power, the nouveaux riches backed a revolution that put into power a single ruler responsive to their wishes.” And as a result, as Raaflaub and Wallace (2007, 43) write, “Tyranny was an important stage in the process toward democracy.” Consistently, upon taking power, mainland Greek tyrants engaged in infrastructure investment—particularly in harbors and urban water supply (which served to promote commercial activity). Tyrants also supported other pro-commerce policies, such as protection of property rights and standardization of weights and measures.¹⁷

¹⁴ Note that the democracies of Classical period Greece designed mechanisms to avoid the all-bad tyrants. Teegarden (2014) examines the establishment of institutions that provided strong incentives for the citizenry to discourage—and in some cases kill—tyrants.

¹⁵ Andrewes (1956, 25) writes, “Tyranny was not a constitution, and the tyrant held no official position and bore no formal title”.

¹⁶ See, e.g., Drews (1972), Andrewes (1956), Krentz (2007) and Fleck and Hanssen (2013).

¹⁷ For example, the sixth-century Athenian tyrant Pisistratus is believed to have established a system of circuit-riding judges so as to reduce the discretion of the local nobility (e.g., Andrewes 1982, 407).



Map 4-1
Ways of the World, First Edition
© 2009 Bedford/St.Martin's

Fig. 1 Map of the Persian Empire (Circa 500 BCE). Source: <https://www.pinterest.com/pin/561331541030804686/>

How would Persian-supported tyrants have differed? We should start by acknowledging that very little information is available about the specific constraints under which these latter tyrants operated.¹⁸ It is certainly possible that they, like the mainland tyrants, engaged in infrastructure investment—since Persian tribute depended upon a state's wealth, it would be surprising if the Persians had objected. But because the Persian-imposed tyrants were established or maintained from above, it is unclear whether they were associated with conflict over the desirability of commercial investment per se, as were mainland tyrants. The precise criteria by which the Persians chose (or supported) tyrants is not known, but the general problem they faced can, as Briant (2002, 79) writes, “be presented in relatively simple terms:

They [the Persians] had not only to be able to quash whatever revolts might arise, but they also, and more importantly, had to take steps to prevent revolts from arising in the first place. To this end, Cyrus and Cambyses [Persian kings] followed an ideological strategy meant to create conditions for cooperation with the local elites, a most urgent need. ... this required allowing the elites of the conquered countries to participate in the functioning of the new imperial power.

¹⁸ Although Persia permitted substantial self-government in the territories under its control, we have little information on taxes imposed and other such things at the level of the individual *polis*.

Some members of the elite responded by competing for Persian favor; Polycrates, tyrant of Samos, adopted Persian notions of luxury so completely that Herodotus writes, “apart from the lords of Syracuse, no other petty king in the Greek world can be compared with Polycrates for magnificence” (III.125). The Persians are known to have restored tyrants overthrown in the unsuccessful Ionian revolt of the early fifth century (Briant 2002, 496). Chios, possessor of one of the strongest navies among Ionian *poleis*, was ruled by the tyrant Strattis, termed by Rubinstein (2004) “pro-Persian.”

In our empirical analysis, we explore whether the Persian-based tyrants appear to have been established in different types of places than mainland tyrants (specifically, places without divided elites and commercial potential). We will then explore whether the link between Persian tyrants and subsequent institutions is the same as that for mainland tyrants.

3 The empirical analysis

3.1 The data

The source of our data is the Hansen–Nielsen (2004) *Inventory of Archaic and Classical Poleis*. The *Inventory*, which took 10 years to complete, summarizes all that is known about the political institutions of the large number of *poleis* identified in ancient sources.¹⁹ The *Inventory* provides information about the political institutions of 46 mainland *poleis* and 79 *poleis* located in Persia-ruled Asia Minor.²⁰

Before proceeding, we wish to make two important points. First, the data set, as valuable as it is given how little is known about the political institutions of all but a few *poleis*, tells us only whether ancient sources *report* that a given *polis* had a particular form of government (e.g., tyranny). Absence of a reported institution, of course, need not signify true absence of the institution. Therefore, as we investigate the data, we will discuss and correct for (to the degree possible) the problems this may raise.

Second, we will be looking for relationships between tyranny and two variables: location on the coast and democracy. Defining “democracy” is often a tricky task (see, e.g., Acemoglu and Robinson 2006 for a discussion). For us, the task is simplified: “Democracy” is the classification assigned by the *Inventory* to which ever states were designated democracies by ancient writers. The main alternative institution (also as designated by ancient writers) is oligarchy. One of the astonishing

¹⁹ The *Inventory* makes use of both formal literary sources from Hesiod onwards (e.g., fragmentary poems, Herodotus) and epigraphical sources (e.g., inscriptions on graves, public decrees). Information from later writers, such as Plutarch, is included if it was based on writings from Archaic or Classical period sources. See Hansen and Nielsen (2004, 9–10) for discussion. The written sources are supplemented by archaeological evidence. See Fleck and Hanssen (2018) and Teegarden (2014) for discussions and analyses of *Inventory* data.

²⁰ In proceeding thus, we are excluding *poleis* that are located on islands in the Aegean, or to the west, primarily in Italy.

things about ancient Greece is that by the mid-Classical period, nearly all of Greece was “democratic” in the sense that political (from “*polis*,” of course) decisions were made collectively. However, *poleis* differed with respect to the composition of the collective. It is therefore best to consider the terms “oligarchy” and “democracy” as distinguishing between “narrow” and “broad” determinations of who can participate in the policy-making process. Oligarchies employed more stringent wealth-restrictions and assigned the most important duties to less representative political bodies.²¹

Table 1 provides summary data. The sample consists of 124 *poleis*, 46 that were located on the Greek mainland (and thus were never subject to Persian rule) and 79 that were located in Persian-occupied Asia Minor. A larger proportion of the Persian-territory *poleis* were located on the coast, hosted early tyrannies, and hosted subsequent democracies.

3.2 Endogenously determined versus exogenously imposed tyrannies

Our tests will compare these two samples of states—the mainland states with endogenous tyrannies and the Persian-territory states with imposed tyrannies. First, we will investigate where tyrannies arose (coast versus inland). Second, we will investigate whether tyranny was followed by democracy.

3.2.1 Was there a difference in where tyrannies arose?

Historical evidence suggests that Archaic period tyrants arose on the Greek mainland in the context of divisions among elites, and that these divisions were greatest where the potential for commercial development was most promising—indeed, it was this very commercial potential that underlay the divisions.²² We do not have a systematic measure of commercial potential, but we do have a plausible proxy: location on the coast. A coastal (versus inland) location affected the cost of commercial activity (most trade was seaborne) and the relative benefits (land along the coast was generally less productive). Greece’s greatest commercial powers (Athens, Corinth, Megara, Mytilene, Miletus) possessed excellent harbors (not surprisingly). Very importantly, we can use coastal location as an exogenous proxy in our econometric framework—these *poleis* were founded centuries before the Archaic period’s economic revolution.

²¹ See Robinson (1997, Chapter 2) for a discussion of the term democracy (*demokratia*) as it was used in the Classical period (its earliest period of use) by Aristotle, Herodotus, Thucydides, pseudo-Xenophon, Aeschylus, and Euripides. He concludes that all have very similar concepts in mind. The term *demokratia* is first seen in pseudo-Xenophon’s *Constitution of the Athenians*, written early in the fifth century B.C.E. The principal characteristic of *demokratia* is the primacy of the *demos*, but the term is also associated with particular institutional features (such as ostracism and public pay for jurors), the most important of which is an absence of property qualifications for (most) offices.

²² In a somewhat simplistic sense, one can envision a struggle between “old agriculture” and “new commerce,” as in nineteenth century Britain (see, e.g., Lizzeri and Persico 2004). In fact, most wealthy Greeks were also landowners, so the divisions were more subtle than that. See Fleck and Hanssen (2013) for a discussion.

Table 2 breaks down the *poleis* in each sub-sample based on whether they are recorded as having experienced tyranny, and whether they were located on the coast. As the top of the table indicates, amongst the mainland states, the vast majority of reported tyrannies were in coastal *poleis*, and the vast majority of non-tyrannies were located inland. By contrast, as can be seen in the bottom of the table, both tyranny and non-tyranny *poleis* appear frequently both inland and on the coast. The first and third columns of Table 3 show the results of probit estimations run on each sub-sample. Among the mainland *poleis*, a coastal location is associated with a 63% increase in the likelihood of reported tyranny; the z-statistic for the point estimate is over 5. By contrast, among the Persian territory *poleis*, a coastal location is associated with a very imprecisely estimated 9.5% increase in the likelihood of reported tyranny.²³

Because the Hansen-Nielsen *Inventory* reports only what ancient writers recorded, differences across the two samples may reflect not that coastal *poleis* were more likely to have tyrannies on the mainland but not in Persian territory, but rather that mainland tyrannies on the coast were more likely to be recorded than Persian territories on the coast (or equivalently, that inland tyrannies were more likely to be recorded among Persian-conquered states). We will address this concern by estimating a probit that includes a variable measuring (in columns of text) how much information the *Inventory* contains about each of the *poleis* in the sample.²⁴ This variable is intended to capture both the survival of records and the level of interest a given *polis* generated among ancient writers. To take specific examples, the *Inventory* contains 21 columns of text about Athens, 15 about Sparta, and eight about Argos—three of the best-known *poleis*—as compared to 0.4 about Phelloe and 0.5 about Keryneia, two little-known *poleis*. The inclusion of the “columns of text” variable should reduce concern about the potential influence of non-random reporting.

Estimations including the columns of text variable are shown in the second and fourth columns of Table 3. The resulting coefficients are similar in magnitude to those estimated with columns of text excluded. While location on the coast continues to be associated with a 63% higher probability of tyranny amongst mainland *poleis*, the corresponding figure for Persian territory *poleis* remains imprecisely estimated and is less than 15% in implied magnitude.

Thus, it seems unlikely that the relationship between coast and tyranny results from coastal *poleis* simply being better documented. The endogenously determined tyrannies arise on the coast, while the exogenously imposed tyrannies states do not.

²³ As a robustness test, we estimated a model that combined all *poleis* in a single estimation, including a Persia dummy and a Persia-coast interaction term. The results were qualitatively similar to those of the separate estimations: Coast predicts tyranny among the mainland Greek states, but not among the Persian territory states. The estimated equation was

Tyranny = $-1.849 + 2.279$ (4.1) coast + 1.953 (3.8) Persia $- 2.035$ (3.2) Persia * coast. (Z-statistics in parentheses.) The marginal effects were 0.713 for coast, 0.6125 for Persia, and -0.661 for Persia * coast.

²⁴ This variable was calculated by the Dispersed Authority Research Group at Stanford University, under the direction of Josh Ober. We thank them for making it available to us.

Table 1 The data set

	Total	Mainland	Persian territory
Number <i>poleis</i>	124	46	79
Tyrannies	57	11	48
On coast	70	15	55
Classical period democracies	66	18	46

3.2.2 Does the relationship between tyranny and (later) democracy differ?

Fleck and Hanssen (2013) document a strong relationship between Archaic period tyranny and Classical period democracy, which they attribute to the nature of the circumstances under which Classical period tyranny arose. As noted, classicists argue that tyrants emerged out of inter-elite conflict, representing the victory of commercially oriented elites. Fleck and Hanssen argue that where the investment bore fruit, tyranny was eventually replaced by democracy.²⁵

Does a similar relationship between tyranny and democracy hold for both sets of states? We again use simple probit estimations. The first and third columns of Table 4 provide a sharp contrast: while tyranny is strongly positively associated with democracy among mainland *poleis*, among the *poleis* located in Persian territory, the relationship is very weak (with a point estimate that is negative). Inclusion of the number of columns of text from the *Inventory* has little effect on this difference (although it does predict democracy reasonably strongly—more strongly for Persian territory than for mainland states).²⁶

In short, the difference in the relationship between democracy and tyranny across the two sets of states does not appear to be a simple artifact of what was recorded. Where tyrannies were exogenously imposed, they had no discernible impact upon a state adopting democracy subsequently, while where tyrannies arose endogenously, they strongly predict democracy.

As an additional test, we excluded members of the Delian League, Athens' unofficial "empire." Our full sample of 46 mainland *poleis* has four Delian League members (Chalkis, Eretria, Histiaia, and Karystos). All four had tyrannies during the Archaic period and later became democracies—consistent with our hypothesis. However, Athens tended to promote democracy among its allies in an aggressive fashion, and if the four Delian League members would not have been democratic without pressure from Athens, our results could be distorted. Note that this would

²⁵ Fleck and Hanssen (2013) argue that tyranny served as a costly device to commit a state to commerce-promoting investment. Where subsequent investment enriched the *demos* sufficiently (in essence, a "middle class" developed), democracy could replace tyranny as the commitment device. (Aristotle (*Pol.* IV) maintained that a middle class is necessary to stable democracy.)

²⁶ We again estimated a combined model as a robustness test, and again found qualitatively similar results. The marginal effects were 0.560 for (mainland) tyranny, 0.665 for Persia, and -0.875 for Persia*tyranny.

Table 2 Tyranny and location on coast

	Total	On coast
Mainland		
Tyranny recorded	11	10
No tyranny recorded	35	5
Persian territory		
Tyranny recorded	48	35
No tyranny recorded	31	20

Table 3 Tyranny and location on coast (probit)

Variable	Mainland		Persian territory	
	Marginal effects		Marginal effects	
	(1)	(2)	(1)	(2)
Dependent variable = 1 if tyranny				
Coast	0.634 (5.04)	0.628 (4.43)	0.095 (0.79)	0.148 (1.15)
Columns of text		0.037 (1.91)		-0.032 (-1.38)
Pseudo-R ²	0.45	0.55	0.06	0.02
No. Obs.	46	46	79	79

z-statistics in parentheses

only be the case if these *poleis* would otherwise have been (i.e., in the counterfactual absence of the Delian League membership) “unusual”—that is, despite having Archaic period tyrannies, they would have been oligarchies in the Classical period. In any case, our econometric results leaving out the Delian League members are very similar to those shown in Table 4.²⁷

3.2.3 A horserace between tyranny and coast

The results so far indicate that tyrannies are much more likely to be found among coastal *poleis* than among inland *poleis* on the Greek mainland, but not in Persian territory, and that tyranny leads to democracy among mainland but not among Persian-territory *poleis*. But is it possible that coast, rather than tyranny, promotes democracy, and that the difference in tyranny’s effect across the two samples is simply due to the fact that Persians promoted inland as well as coastal tyrannies? In order to test that possibility, we will run a horserace, re-estimating the probit model of democracy while including both tyranny and coast on the right-hand side.

²⁷ The restricted-sample estimated effects of tyranny are: 0.515 (z=3.04) without columns of text, and 0.409 (z=2.00) with columns of text included as a control.

Table 4 Tyranny and democracy (probit)

Variable	Mainland		Persian territory	
	Marginal effects		Marginal effects	
	(1)	(2)	(1)	(2)
Dependent variable = 1 if democracy				
Tyranny	0.561 (4.07)	0.427 (2.80)	-0.528 (-6.02)	-0.381 (-2.89)
Columns of text		0.048 (1.77)		0.250 (4.95)
Pseudo-R ²	0.18	0.24	0.22	0.61
No. Obs.	46	46	79	79
z-statistics in parentheses				

Table 5 Horserace between tyranny and coast (probit)

Variable	Mainland		Persian territory	
	Marginal effects		Marginal effects	
	(1)	(2)	(1)	(2)
Dependent variable = 1 if democracy				
Tyranny	0.628 (3.59)	0.517 (2.27)	-0.600 (-2.99)	-0.422 (-2.99)
Coast	-0.121 (-0.51)	-0.067 (-0.27)	0.426 (2.99)	0.162 (0.91)
Columns of text		0.047 1.71		0.248 (4.47)
Pseudo-R ²	0.19	0.24	0.31	0.62
No. Obs.	46	46	79	79
z-statistics in parentheses				

The result is shown in Table 5. For *poleis* located on the Greek mainland (columns 2 and 3), inclusion of coast *raises* the point estimates on tyranny: Tyranny is now associated with a 50-to-60% increase in the probability of democracy. The point estimate on the coast variable is *negative* when tyranny is controlled for, and statistically insignificant. By contrast, for *poleis* located in Persian territory (columns 4 and 5), tyranny continues to predict a reduced likelihood of democracy when coast is included in the estimation; the point estimates are even slightly larger in absolute value than those shown in Table 4.

Finally, we look at the relationship between tyranny and democracy for the subset of 55 Persian-conquered *poleis* located on the coast. (We do not do the same for mainland *poleis* because 10 of the 11 mainland *poleis* that experienced tyranny were located on the coast.) The result is shown in Table 6. As can be seen, Persian-imposed tyranny *reduces* the probability of democracy by between 23% (with

Table 6 Tyranny and democracy, coastal *Poleis* only (probit)

Variable	Persian territory	
	Marginal effects	
	(1)	(2)
Dependent variable = 1 if democracy		
Tyranny	-0.464 (-4.76)	-0.233 (-1.56)
Columns of text		0.047 1.71
Pseudo-R ²	0.20	0.24
No. Obs.	55	46

z-statistics in parentheses

columns of text included) and 46%. In short, Persian-imposed tyrannies had fundamentally different long-run effects than tyrannies that arose endogenously.

4 Conclusion

Using a unique data set from ancient Greece, we investigate how the circumstances that give rise to an institution can affect the long run effects of that institution. Even though the establishment of tyranny, by its nature, represents a non-democratizing institutional change, we show that under some conditions tyranny served as a steppingstone on the path toward democracy. Specifically, when established endogenously, tyrannies were likely to generate conditions conducive to future democratization—because the endogenous tyrants tended to come to power when their effects on economic policy would create broadly shared economic growth. In the case of tyrannies established by the Persians, however, the reasons for installing a tyrant differed and, thus, the long run effects on democratization appear to be absent. For scholarly efforts to understand the effects of political institutions, our findings underscore the importance of studying the historical path that leads to a given type institution.

An important lesson to be drawn from our paper is not merely that institutions do not arise randomly (as we all know), but that non-random establishment—i.e., “imposition”—cannot be expected to produce institutions that function similarly (for example, as well) as organically developed institutions, *de jure* resemblances notwithstanding. This is a point Weingast (2008–9) emphasizes, arguing specifically that attempts to establish the institutions of democracy and the rule of law when appropriate conditions are not present are doomed to failure. Similarly, Berkowitz et al. (2003) argue that transplanted legal institutions will only function effectively where the conditions are right for the transplant. When are the conditions right? For the establishment of democracy and the rule of law, Weingast suggests the necessary conditions are an effective mechanism to control violence, a well-established notion

of the perpetual state, and an impersonal application of rules and laws.²⁸ But the push to impose democracy is largely driven by the observation that so many states function badly because they are unable to control violence, lack the notion of a perpetual state, and apply laws unevenly and unfairly. Establishing democracy is advocated as a means of overcoming such problems. Our analysis suggests pessimism that such an approach will bear fruit.

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²⁸ Consistently, Fleck and Hanssen (2013) argue that in establishing the conditions conducive for democracy, the Archaic period tyrants of the mainland (1) reduced violence (ending intra-elite conflict), (2) solidified the notion of the polis as a “state”, and (3) established rules and institutions (defining property rights and introducing “independent judges”) that reduced the opportunities for elites to take from non-elites.

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