

The Emergence of Democratic Constitutions: Comparing the Modern World to Ancient Greece

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ABSTRACT: Democracy has flourished twice in human history: first in ancient Greece and then, more than two millennia later, in the modern world. Although the historical record regarding most Greek *poleis* (city-states) is scant, there nevertheless exists sufficient information to categorize the constitutions of nearly 200 of the more than 1000 *poleis* that once existed. Using similar data from the modern world, we compare two centuries of ancient data to two centuries of modern data. We find that, in both eras, democracy grew in prevalence because transitions to democracy were more frequent than transitions away from democracy. Also in both eras, the spread of democracy occurred gradually, yet in the long run democracy became the most common form of constitution. Democracy appears to have expanded more rapidly among Greek *poleis* than among modern countries; however, we observe that after reaching 50 percent, the proportion of Greek democracies declined, rose again to half of all states, declined again, and rose to half again. The modern world just recently reached the 50 percent threshold, and whether it follows the Greek pattern remains to be seen.

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The government of [modern] nations is, at first, mainly in the hands of kings; then, as in ancient Greece, the kings are gradually replaced by democracies or tyrants.

Bertrand Russell, *A History of Western Philosophy* (1945, p. 491)

I. INTRODUCTION

Recent events – the collapse of the Arab Spring, the descent of Venezuela into chaos, the prevalence of on-again/off-again democracies (e.g., Pakistan, Thailand, Turkey), the rise of populism in the democratic West – have contributed to the sense that democracy is under siege, and a substantial literature on “democratic backsliding” has emerged.¹ Yet concerns about the stability of democracy predate these events. Seymour Lipset (1960) outlined a series of factors that distinguish unstable democracies from stable democracies. Samuel Huntington (1968) argued that unless there are mechanisms (such as political parties) to translate popular demands into policy proposals, democracy *breeds* instability. Juan Linz (1978) warned that the multitude of competing interests that characterize democracy weaken the capacity of the state to maintain social order, leading to periodic breakdowns.²

Such concerns are typically based on observations of modern democracies, but in fact democracy has flourished twice in human history: In the present day and, more than 2000 years earlier, in ancient Greece.³ For scholars seeking to understand what long-run patterns can tell us about future developments – including democracy’s continued expansion – comparing ancient Greece to the modern world makes eminent sense.

¹ See, for example, the review article by Waldner and Lust (2018) and the many citations therein.

² These scholars are only a few of the many who have explored the durability of modern democracy. See, e.g., Acemoglu and Robinson (2006) and the authors they cite.

³ As we will discuss, ancient Greece’s direct democracies differed from modern representative democracies. It should also be kept in mind that ancient Greek democracies were not all-inclusive: Greeks owned slaves and Greek women could not vote (e.g., Blundell 1995).

This paper conducts such a comparison. Of course, connections between ancient and modern democracy have long been recognized. Indeed, the founders of the first modern democracy, the United States, looked back to the ancient Greeks for lessons. Until recently, however, systematic analysis of the rise of democracy in ancient Greece was not possible, because data on Greek constitutions were simply too widely dispersed. This changed with the pioneering work of classicists Mogens Hansen and Thomas Nielsen (2004), who oversaw the enormous cataloging of information on more than one-thousand Greek *poleis* (city-states). Their edited volume, *The Inventory of Classic and Archaic Poleis* (hereafter “*Inventory*”), contains 1300 tightly spaced pages of historical description, as well as an appendix that categorizes constitutions for nearly two-hundred different *poleis*.⁴ We use this appendix to document the rise of democracy in ancient Greece.

Of course, to compare, we also require a source of modern data. We employ the widely used Polity IV database.⁵ This database is particularly well-suited to our exercise: It spans more than two centuries, rendering it comparable to the Greek data in duration of coverage, and its scores can be easily collapsed into broader constitutional categories similar to those employed by the *Inventory*.

Before proceeding, we should note the limitations of the *Inventory* data as compared to the Polity data. Whereas the Polity categorizations are based on well-documented institutional measures (at least for more recent periods), outside of a few *poleis* (such as Athens), specific details regarding ancient Greek constitutions are simply not known. The *Inventory* therefore

⁴ The *Inventory* thus covers a period stretching from 800 BCE (the start of the Archaic period) to 323 BCE (the end of the Classical Period); however, most constitution data are from the sixth century onwards.

⁵ Among the varied published works that have employed Polity data are Acemoglu and Robinson (2006); Acemoglu, Johnson, Robinson, and Yared (2008, 2009); Murtin and Wacziarg (2014); Acemoglu, Naidu, Restrepo, and Robinson (2019); and Treisman (2020). For discussions of the merits and deficiencies of various democracy data sets, see, e.g., Munck and Verkuilen (2002); Cheibub, Ghandi, and Vreeland (2010).

classifies *polis* constitutions into broad categories (democracy, oligarchy, tyranny) according to descriptions provided by ancient sources (e.g., Herodotus, Aristotle, excavated tablets).

Furthermore, whereas we have a constitutional classification for a comprehensive set of modern states, our ancient data source has constitution data for only 199 of the many *poleis* known to have existed. Of the 199 *poleis*, we have sufficient information to include only 176 in our analysis, and among these, most are observed for just a few time periods.

These limitations notwithstanding, the information provided by the *Inventory* allows us to chart changes in the number and frequency of democratic constitutions in the ancient versus the modern world in a manner not previously possible.⁶ What do we find? To begin with, we identify a number of similarities. First, in both ancient Greece and in the modern world, the rise of democracy occurred gradually, moving from a point where no democracies existed to a point where democracy accounted for half of all known constitutions. Second, in each era, we find states with stable government systems coexisting with states that oscillate between democracy and non-democracy. For example, ancient Athens, like the U.S., adopted democracy and stuck with it; ancient Sparta, like modern Singapore, never established democracy at all; and ancient Syracuse, like modern Argentina, alternated between democracy and autocracy. Third, in both the ancient and modern eras, transitions from democracy to non-democracy were much less frequent than “stable” democracy – a democracy in period t was likely to remain a democracy in period $t+1$. We also find some differences. Most notably, we find that democracy expanded more rapidly in ancient Greece. About one century after the first Greek democracy appeared, 50 percent of observed Greek states were democratic. By contrast, it took two centuries after the

⁶ We should also note that no data resembling modern income or demographic variables exist for Greek *poleis*, so our empirical approach will be simple, relying largely on charts and straightforward calculations. Ancient Greece did experience substantial economic growth, becoming exceptionally wealthy for the era, but establishing how wealthy is extremely challenging (e.g., Ober 2010).

emergence of modern democracy before half of all modern states were democratic. Furthermore, the proportion of Greek democracies declined subsequently, rose again to half of all states, declined again, and rose to half again. The modern world just recently reached the 50 percent threshold, and what happens next remains to be seen.

By showing that state-level transitions from democracy to non-democracy and declines in the *total* proportion of states that are democratic are features of the ancient as well as the modern world, we contribute to a burgeoning literature on democratic backsliding. One concern about measuring modern backsliding is that the findings can be sensitive to the methods used to construct the democracy ratings: Because different methods are used to compile alternative democracy rankings, some measures indicate backsliding when others do not.⁷ Furthermore, as Waldner and Lust (2018, 95) write, “a sufficiently fine-grained, continuous measure is likely to overdetect backsliding.” The measures we employ for ancient Greece are anything but “fine-grained,” and we nonetheless find episodes of backsliding.⁸

This paper also contributes to a growing empirical literature that uses *Inventory* data to study the development of the political institutions of ancient Greece. Fleck and Hanssen (2013a) find that a recorded tyranny in the Archaic Period (800-480 BCE) predicts a greater likelihood of observing broad democracy in the Classical Period (480-323 BCE), which they attribute to

⁷ Examining a number of measures, Lueders and Lust (2018) find that although correlations among regime type are in the 0.8 to 0.9 range, correlations among indicators of backsliding are only about 0.3.

⁸ Although testing among the many models of democratic expansion is beyond the scope of this paper, an important point to make here is that the adoption and durability of democracy reflect the interplay between many factors, including geography, pre-democratic institutions, outside pressures (e.g., military threats and defeats), and culture broadly defined. See, e.g., Acemoglu and Robinson (2000, 2001), Barzel (2000), Fleck (2000), Lizzeri and Persico (2004), Llavador and Oxoby (2005), Fleck and Hanssen (2006; 2013) – who test their hypotheses on ancient Greece – and North, Wallis, and Weingast (2009). A recent contribution by Bisin and Verdier (2024) examines the interaction between institutions and culture. The theoretical model they develop demonstrates that, depending upon pre-existing conditions, a push for democracy may set a society on a path to either more inclusive, democratic institutions, or lead to a reversion to more extractive, autocratic institutions. See also Gorodnichenko and Roland (2021) who develop and test a model that predicts that societies with more individualistic cultures are more likely to adopt democracy.

tyranny serving as a commitment device. In his book on tyranny and the mechanisms Greeks used to avoid tyranny and resist tyrants, Teegarden (2014) uses *Inventory* data to examine changes in regime type between 50-year intervals. Fleck and Hanssen (2018) use *Inventory* data on a large number of *poleis* at 20-year intervals (as we do here) to establish basic patterns in the rise of democratic institutions. Arcenas (2018) employs the *Inventory* as a starting point to assemble a dataset of the occurrence of *stasis* (violent political conflict) in more than 1000 *poleis* over two centuries (500 to 301 BCE). Given the uniqueness of the *Inventory* data, additional studies are sure to follow.⁹

II. THE GREEK *POLIS*

Manville (1990, 53-54) defines the ancient Greek *polis* as follows:

The Greek polis was a politically autonomous community of people living in a defined territory comprising a civic center with surrounding arable countryside. Its society included both agricultural and nonagricultural laborers who were organized by a centrally located authority to defend the state, contribute to its material needs, share in unified worship of the gods, and decide matters of public policy and personal disputes. Since the polis was in essence its citizens, clear boundaries between the member and nonmember existed; within the boundaries of membership, defined by a fixed constitution, the citizens had the right to participate in the community's deliberative and/or judicial functions whose exercise normally took place in a civic center.¹⁰

The history of the Greek *polis* begins with the collapse of Mycenaean civilization circa 1150 BCE.¹¹ The Greeks of the Classical Period (typically dated 480 to 323 BCE) looked upon the

⁹ These empirical papers complement recent work that employs economics and rational choice political science to study the development of ancient Greek institutions. See, e.g., Lyttkens (1992, 1997), Schwartzberg (2004), Fleck and Hanssen (2006, 2009, 2012, 2019), Kaiser (2007), Ober (2008, 2010, 2015, 2022), McCannon (2010, 2011), Pitsoulis (2011), Tridimas (2011, 2012, 2016), Allen and Latinova (2013), Carugati, Hadfield, and Weingast (2015), Carugati, Ober, and Weingast (2018), Carugati (2019).

¹⁰ Hansen and Nielsen (2004, 17) describe the *polis* more succinctly as “a small, highly institutionalized and self-governing community of citizens ... living with their wives and children in an urban center ... and hinterland ... together with two other types of people: free foreigners ... and slaves,” though in their extended discussion they make many of the same points as Manville.

¹¹ The Mycenaean period takes its name from its leading state. In *The Iliad*, Agamemnon, King of Mycenae, famously leads a coalition of Greek cities into a war against Troy.

Mycenaeans as their ancestors and, for the most part, worshipped the same gods. But the *polis* form that arose in the centuries following the Mycenaean collapse bears little resemblance to the centralized palace economies that flourished during Mycenae's heyday. The precise reasons for Mycenae's collapse remain unknown, although a combination of invasion and natural disaster is a likely suspect. There were disruptions in much of the eastern Mediterranean at the time, but they were particularly dramatic on the Greek mainland. During the Dark Age (circa 1150-800 BCE) that followed, populations fell by as much as two-thirds and many formerly flourishing urban centers were abandoned (Pomeroy et al. 1999, 43; Hanson 1999, 36). The subsequent Archaic Period, typically dated 800-480 BCE, saw the development of a new alphabet adapted from the Phoenicians and the reintegration of the Greeks into regional trading networks. Independent *poleis* formed and merged (or not) as time passed; some survived for centuries while others flourished briefly and then disappeared (as our constitution data will reflect).

Most *poleis* were small, with territories in the dozens of square miles and populations in the hundreds or thousands.¹² More than 1000 *poleis* have been identified, spread over an area running from Spain in the west to the shores of the Black Sea in the east; from Ukraine in the north to modern-day Libya in the south (see Hansen and Nielsen 2004 for a definitive cataloging). The earliest *poleis* developed in areas around the Aegean Sea, including Greece-proper, Anatolia, and many islands. Many of the later and more distant *poleis* were founded through colonization.¹³

¹² Knowledge of population levels is sketchy. Cartledge (2009, 78) estimates that the citizenry of the typical Greek *polis* included anywhere from 500 to 2000 men. By contrast, Sparta, Athens, and Syracuse – the three largest *poleis* – are believed to have had citizen populations in the tens of thousands, and total resident populations many times that.

¹³ This process of colonization, along with the (possibly) collapse-induced diaspora to areas around the Aegean, explain the astounding geographic spread of the *polis*. It should be noted that Greek colonies were not the semi-vassal states of the 17th through 19th centuries CE, but rather independent states with at best a loose connection to the mother *polis*. See, e.g., Graham (1983).

The first *poleis* are presumed to have been ruled by kings, who were, over time, replaced by aristocratic councils, which were in turn replaced by more permeable oligarchies. The first democracies appeared in the mid-sixth century BCE. One century later, democracies accounted for half of all documented constitutions, as we will show.

The Classical Period was brought to a close by the Macedonian invasion. Macedon was a Greek-speaking territory, populated by Hellenes, in which the *polis* form never developed. In 338 BCE, King Philip of Macedon defeated combined forces led by Athens; the end of the Greek Classical Period is dated by the death of his son, Alexander the Great. By then, the *polis* as an independent entity had disappeared.

III. ANCIENT GREEK DEMOCRACY VERSUS MODERN DEMOCRACY

Before describing the data, we should address an important question: Are the democratic systems of ancient Greece sufficiently similar to those of the modern world to justify comparison? Certainly, the democratic institutions employed in ancient Greece differ from those of modern democracies. The relatively small Greek *poleis* were direct democracies, making policy largely through voting in popular assemblies to which all citizens belonged.¹⁴ The much larger nation-states of the modern world are representative democracies, “in which individuals acquire the power to decide [policy] by means of a competitive struggle for the people’s votes” (Schumpeter 1942, 250).¹⁵ Yet the essential commonality remains: In both the modern world and ancient Greece, “democratic” (from *demos* meaning “the people”) constitutions involve a

¹⁴ Athens, the largest of the Greek *poleis*, has a population of 50,000 male citizens at its peak; most *poleis* had much smaller male citizen populations (Cartledge 2009). See, e.g., Ober (2015, chapter 40) for a description of Athens’ institutions.

¹⁵ Of course, there are also many differences in political institutions even within the set of modern democracies (parliamentary versus presidential, and so forth), as there were across ancient Greek democracies. For example, 5th century Athens placed political power more directly in the hands of the popular assembly than did most other democratic *poleis* (see, e.g., Robinson 2011 for a discussion of non-Athenian democracy).

larger proportion of the citizenry in the policymaking process than do alternative systems. A transition to a democratic constitution thus entails increasing the number of people who can participate in policymaking, while a transition from a democratic to a non-democratic constitution has the opposite effect. This is the focus of our analysis.

IV. THE DATA

A. The Hansen-Nielsen *Inventory*

The *Inventory's* Appendix 11 lists constitutions (equivalently, types of government) for 199 *poleis*, primarily in three categories: tyranny, oligarchy, and democracy (rule by a single man; rule by “the few;” and rule by “the many” or “the masses”).¹⁶ The information is based on writings by ancient scholars (e.g., Thucydides, Aristotle) as well as archaeological evidence (e.g., inscribed tablets). The *Inventory's* constitutions are not reported randomly; records of all types were more likely to survive for better known states and for more popular writers.¹⁷ This is not necessarily a problem for comparing constitutions over time. For example, one source of information is Herodotus’s famous account of the Persian Wars. Herodotus provides neither a random nor a comprehensive cataloging of states; he writes about *poleis* affected by the conflict. But as long as the states he describes are not systematically more likely to be of one government type than another – and they do not appear to be – we may usefully treat them “as if” randomly sampled.

¹⁶ There are also a very small number of other categorizations, such as *basileus*, that we exclude from our analysis. This eliminates several *poleis*. We also exclude a few *poleis* for which constitution type is listed but timing is not provided.

¹⁷ This is obvious from the *Inventory*, which devotes six times as much space per *polis* to the ten *poleis* for which we have constitutions data for every one of our time periods (see Section V, Part C) than for the average *polis*.

The *Inventory* also lists the period of time (as precisely as is known) that a particular constitution was in effect. Sometimes the dating is very specific. For example, the *Inventory* lists Athens, the best documented *polis*, as an oligarchy from the mid-8th century until 561 BCE, a tyranny from 561 to 510 BCE, and a democracy for most of the rest of the time period until 320 (when the *Inventory* stops classifying), with two brief periods of oligarchy in 411 and 404-403 BCE. Often, the dating is less precise. For example, all the *Inventory* tells us about Agrion, a *polis* located in Sicily, is that it was governed by a tyrant sometime between 360 and 340 BCE. For such less precise dating, the *Inventory* employs five categories: early century (e.g., 500-480 BCE), first half of the century (e.g., 500-450 BCE), mid-century (e.g., 460-440 BCE), second half of the century (e.g., 450-400 BCE), late century (e.g., 420-400 BCE). Because most *poleis* list dates imprecisely for at least some constitutions, we will classify all constitutions by twenty-year intervals.¹⁸

The *Inventory* begins with the start of the Archaic period, in 800 BCE; however, very little is known about most states until the 6th century BCE. We will start our analysis with the 540-520 BCE twenty-year interval, when the number of *poleis* for which a constitution is reported rises from 15 to 42 (the Polity data set begins with 33 states). This allows us to map constitutions over 11 twenty-year intervals, more than two centuries, roughly equivalent to the time period for which Polity data are available.

¹⁸ We use the two half-century categories in place of the two omitted twenty-year intervals. An alternative, employed by Teegarden (2014), is to classify constitutions by half-century, and then apply the mid-century category to both half-centuries.

B. Polity IV Data

Polity IV is a widely used database that calculates an annual government “score” on a twenty-point scale for all states with populations of at least one-half million.¹⁹ The database begins with the year 1800 and runs through the present. The scores range from a low of -10 (extreme autocracy) to a high of +10 (full democracy). The Polity IV project also translates government types into three categories, allowing us to render the Polity data more comparable to the *Inventory* data. The three categories are: autocracy (-10 through -6), anocracy (-5 through +5), and democracy (+6 through +10). How comparable are these categories to the tyranny, oligarchy, and democracy classifications that the *Inventory* supplies? As noted earlier, in both ancient Greece and the modern world, democracy is a system under which policymaking is conducted by the mass of citizens (or their representatives). And in both ancient Greece and the modern world, tyranny/autocracy is a system under which a single individual exerts substantial control over the policymaking process. Finally, both ancient Greek oligarchy and modern anocracy entail distributions of political rights that are more expansive than tyranny or autocracy, yet less expansive than democracy. For example, the United Kingdom before 1880 maintained the same type of wealth-based restrictions on the franchise that characterized Ancient Greek oligarchies, and it is classified as an anocracy by the Polity IV scores.

To render the Polity IV data comparable to the *Inventory* data, we must not only group the Polity data into three categories, we must calculate the three categories by twenty-year intervals. We will do this in two ways. First, we will simply average the Polity score over each twenty-year interval. Note that this is likely to underestimate the number of different constitution types

¹⁹ The description on the Polity website reads, “The Polity scheme consists of six component measures that record key qualities of executive recruitment, constraints on executive authority and political competition. It also records changes in the institutionalized qualities of governing authority.” See <https://www.systemicpeace.org/polityproject.html>.

a state establishes.²⁰ Second, we will look *within* each twenty-year interval, and if for any period of years (from one to 20) a state's score falls within a category, we will classify it as possessing that constitution.²¹ The latter approach is roughly the same as what we do (by necessity) with the *Inventory* data. We will start by showing the results for the Polity IV dataset using both approaches (to illustrate that it does not appear to make much difference), and we will use the latter approach through most of the paper.

C. De Facto Constitutions

By now, it should be clear to the reader that we are not analyzing written constitutions. Our two data sources provide us with de facto (as opposed to de jure) measures: A state possesses a democratic constitution if it functions as a democracy, and not otherwise. The distinction between de facto and de jure – what happens in practice versus what is written down as “the rule” – has received much attention in the literature on institutional quality.²² And there is broad agreement that de jure rules matter principally to the extent that they shape de facto outcomes.²³

The de facto nature of our measures may be more obvious for the Polity data than for the *Inventory* data. The Polity data are based on the competitiveness and openness of executive recruitment, constraints on the chief executive, and the competitiveness of political

²⁰ For example, if a state moved from autocracy (score = -7) to democracy (score = +7) and back to autocracy (score = -7) again, the average score might be between -5 and +5, leading to its classification as an anocracy for the interval.

²¹ For example, if a state has a score of 7 for the entire twenty-year interval, we will classify it as a democracy for the interval. If a state instead begins the interval with a score of 1, and the score then rises to 7 at any time during that interval, and remained there until the end of the interval, we would list the state as both an anocracy and a democracy.

²² For example, there has been much debate about the relationship between de jure and de facto judicial independence (e.g., Feld and Voigt 2003; Melton and Ginsburg 2014).

²³ This line of thinking is also represented in North and Weingast's (1989) seminal article on constitutions and commitment, in which they do not distinguish sharply between constitutions and institutions. For instance, they write on page 805, “A critical role of the constitution and other political institutions is to place restrictions on the state or sovereign”, and on page 806 that “parties will attempt to alter incentives, devising institutions or constitutions that promote compliance with bargains after the fact.”

participation.²⁴ By contrast, the *Inventory* definitions are not as precise, because the sources are much more varied (essentially, any information the contributors can find). Nonetheless, the *Inventory* measures are equally de facto. As Hansen and Nielsen (2004, 83) write:

The technical terms – *tyrannis*, *oligarchia*, *demokratia* and their derivatives – are only occasionally used in our sources, and in many cases, the classification [of a constitution] has to be made on an interpretation of how the attested political institution works . . . [For example] If major decisions are left to a general assembly, it is an indication of democracy, whereas major decisions made by a *boule* or by magistrates point to an oligarchy.²⁵

The quotation reflects the fact that all Greek *poleis* employed essentially the same set of formal political (from *polis*) institutions: a popular assembly on which all citizens sat; a preliminary council (*boule*) that set the agenda for the popular assembly; a system of courts that adjudicated disputes; and magistrates who held executive offices, usually as members of a multi-member board (there was generally no single predominant executive office).²⁶ Therefore, what distinguished a democracy from a non-democracy was not its formal institutions, but – within its institutions – who made the most important policy decisions: members of the popular assembly (i.e., the entire citizenry), the oligarchic *boule*, or a tyrant, perhaps serving as one of many magistrates. In the terminology of the Greeks, only if the popular assembly was *kyria panton* – the “supreme body” of government – was the regime, and its constitution, democratic.²⁷

²⁴ See the Polity IV project Dataset User’s Manual.

²⁵ In his study of the constitutions of Greek *poleis*, Aristotle defines a constitution as “a certain way of organizing those who inhabit the city-state” (*Pol.* III.1.1274b36–8). Indeed, Aristotle defines a *polis* as “a community of citizens with regards to a constitution” (Hansen and Nielsen 2004, 70). Many *poleis* had written constitutions, as the fact that Aristotle and his students collected 158 constitutions to analyze attests. But nearly all have been lost; only that of Athens survives.

²⁶ Sparta was an exception because, among its unique set of institutions, it had a dual kingship, whereby one king served as military leader and one as a religious figure.

²⁷ See Hansen and Nielsen (2004, 80) for more discussion of *kyria panton*.

V. COMPARING CONSTITUTIONS

A. Extent of Coverage

Each data set provides information for roughly the same number of states for roughly the same period of time. The *Inventory* data set contains constitution information on 176 *poleis* over 11 twenty-year intervals running from 540 to 320 BCE (when the *Inventory* stops). The Polity data set contains information on government type for 194 modern states over nearly 11 twenty-year intervals, running from 1800 to 2015 CE. In each data set, the number of states for which information is provided increases over time – see Figure 1a. However, whereas the number of modern states in the Polity IV data set increases relatively smoothly, for the *poleis* in the *Inventory* data set, there is a large jump between the 460-440 and 440-420 intervals, followed by a decline in the early-to-mid fourth century. Furthermore, while the number of modern states in the Polity data set increases by a factor of five over the 11 twenty-year intervals, the number of *poleis* in the *Inventory* data set merely doubles.

The depth of the coverage also differs, as Figure 1b illustrates. The figure charts for each data set the number of twenty-year intervals for which a constitution is recorded. As can be seen, relatively few states – ancient or modern – have constitution recorded for all, or even most, of the 11 possible twenty-year intervals. But whereas nearly half the *poleis* for which the *Inventory* lists a constitution have that information provided for only a single twenty-year interval, for only five percent of modern states is that true. Similarly, only ten Greek *poleis* (about five percent of all *poleis* with constitutions) have constitution recorded for all 11 twenty-year intervals, as compared to nearly 20 modern states (about ten percent of all modern countries with Polity scores).

In sum, the *Inventory* provides less thorough coverage of ancient Greece than Polity IV does of the modern world. Moreover, as we have noted, an important challenge is to determine whether the *Inventory* data may be treated as representative, despite its many missing observations. We will turn to that challenge in sub-section C. But first, we will show some basic patterns in the data.

B. Constitutions Over Time

Figure 2a charts the mix of constitutions over time by number, and Figure 2b by proportion. The top of each figure shows ancient Greece, and the middle and bottom show the modern world, classifying constitutions in the two different ways described above. The patterns displayed by the ancient and modern data show some striking similarities. First, in each case, democracy is rare at the start of the two-hundred-plus year periods (accounting for less than five percent of recorded governments) and common by the end (50 percent of recorded governments 200 years later). Second, in each case the transition is gradual – proceeding with varying degrees of steadiness over a number of twenty-year intervals. Nonetheless, in each case (and this is the third point), the largest shift towards democracy takes place in one big jump – from 20 percent to 50 percent of Greek constitutions between the 460-440 and 440-420 intervals, and from 30 percent to 50 percent of modern states between the 1980-1999 and 2000-2015 intervals.

Similarities are also apparent in the patterns displayed for the other two constitutions. Tyranny/autocracy is the most common constitution at the beginning of each two-hundred-plus year period, shrinks to 20 percent or less by the middle of the period, expands subsequently (although not to the levels of the beginning of the period), and then shrinks again at the end of the period, when the proportion of democracy peaks. Finally, we see similarity between ancient oligarchy and modern anocracy, as expected given what we found for the other types of

constitutions. Notably, ancient oligarchy and modern anocracy each became the most common constitution as tyranny and autocracy declined, and then shrank in proportion as democracy expanded.

There are also differences. First, democracy expanded more quickly in ancient Greece than in the modern world. About a century after the first Greek democracy appeared, democracies accounted for half of all governments recorded. By contrast, it took more than two centuries before democracy accounted for half of all modern governments.

Which brings us to the second difference: Whereas the proportion of modern democracies increases fairly steadily over the two centuries covered by the data set, the number of Greek democracies shrinks immediately after a mid-fifth century peak, rises again, shrinks again, and then rises again. The result is that ancient Greece hit 50 percent democracy (or close to it) three times and fell back twice over the two-century period. We do not yet know what will happen in the modern world now that 50 percent of all states are classified as democracies.

Lastly, note that the pattern displayed in the modern data is roughly the same whether the number of governments per interval or the interval average score is used to determine the classification. We will use the former exclusively in the rest of this paper.

C. Well-documented States

The fact that so much is similar across the two data sets suggests that the appearance and disappearances of states, which occurs much more frequently in the Greek data set than in the modern data set, may not affect the patterns in an important way (and perhaps may be treated “as if” random). To explore this further, we restrict our analysis to states for which data are *not* missing – states for which constitution are available for each of the 11 twenty-year intervals. This set of states is small, consisting of 10 ancient Greek *poleis* and 19 modern nation states.

Constitution types for this set of states by period are presented in Figure 3. For both ancient and modern worlds, the patterns displayed are almost identical to the patterns displayed when the full set of states is included (shown in Figure 2b). Democracies account for a somewhat smaller proportion of the long-lived Greek *poleis* than of all Greek *poleis*, and for a somewhat larger proportion of the long-lived modern states than of all the modern states. But in each case, the three types of constitution wax and wane similarly in the full and in the restricted data sets.

VI. TRANSITIONS BETWEEN CONSTITUTIONS

A. Democracy, Oligarchy, and Tyranny

To explore the process of transition more systematically, we will include episodes of persistence as well as episodes of change. We will also allow for the fact that countries both enter and leave our data sets. We will therefore proceed as follows. Assume a country has a reported constitution of type i in time period t . Moving to time period $t+1$, three things might happen: 1) the country may maintain constitution type i (i.e., “transition” from i to i), 2) the country may switch to alternate constitution type k (i.e., transition from i to k), 3) the country may disappear from the data set (i.e., transition from i to “limbo”). And of course, it is also possible that a country will appear in the data set for the first time, or reappear after an absence (i.e., transition from limbo to constitution type i or k).

Given that each of our two data sets contains three possible constitutions plus limbo, there are in each case 15 possible types of transitions. Recall that episodes of change between constitutions may occur within as well as across twenty-year intervals, while episodes of stability (i to i) are based on whether the same constitution is maintained across intervals.²⁸

²⁸ In other words, did the state begin period $t+1$ with the same type of government with which it ended period t ? Whether there were earlier changes in period t or later changes in period $t+1$ is irrelevant.

To make our approach clear, let us provide an example. Athens was a democracy for the entire 440-420 period. It then went from democracy to oligarchy and back to democracy during the 420-400 period. It was a democracy for the entire 400-380 period. Using our methodology, Athens experienced one transition from D-to-D moving from 440-420 to 420-400; and one transition from D-to-O within the 420-400 interval; one transition from O-to-D, also within the 420-400 interval; and one transition from D-to-D, moving from 420-400 interval to 400-380 interval.

Figure 4 presents the number of transitions by type for the modern and ancient worlds. Three things are immediately apparent. First, there are many more transitions observed for the modern era: 1353 transitions of all types in the Polity IV data set, versus 711 in the *Inventory* data set. The difference is even larger if appearances in and disappearances from the data set (movements from and to limbo) are excluded: 1150 versus 384. Of course, given how much more information is available about modern countries than about the *poleis* of ancient Greece, this is not surprising. Second and following from the first, movements into and out of the data set (from and to limbo) are more common in the *Inventory* data than in the Polity IV data. Third – and this is an important caveat for interpreting our analysis – while transition from limbo accounts for a substantial number of newly appearing democracies in both the ancient and modern data sets, nearly as many ancient democracies vanished from the data set (transitioned to limbo) as arose from it, while very few modern democracies vanished from the Polity IV data set.

To address this issue, the bottom of Figure 4 presents the same information with the appearances and disappearances (i.e., movements to and from limbo) excluded, so as to make comparing actual changes (or persistence) in constitutions easier. Several similarities are again

apparent. In each case, all possible types of transition are represented. In each case, total movements toward democracy outnumber total movements away from democracy. And in each case, the “middle” category – oligarchy or anocracy – is a much more important source of democracy than is the first category – tyranny or autocracy. Finally, in each case, “stable” transitions (from D to D or O to O or A to A, for example) are the most common form, comprising 65 percent of the ancient Greek transitions (limbo excluded) and 60 percent of modern transitions.

There are also differences. First, Greek tyranny was much less likely to be stable than Greek oligarchy or Greek democracy. This is consistent with classicists’ description of tyranny as a transitory institution and with empirical work on Greek tyranny (Fleck and Hanssen 2013a; Teegarden 2014). But it contrasts sharply with what we find in the Polity data: Modern autocracy is *more* stable than the other two types of government. Second, ancient world movements between tyranny and oligarchy – in either direction – are much less common than modern world movements between autocracy and anocracy. Indeed, an ancient Greek tyranny was twice as likely to become a democracy as to become an oligarchy (consistent with classical accounts of tyranny as a pathway to democracy; see Fleck and Hanssen 2013a), while a modern autocracy was seven times *less* likely to become a democracy than to become an anocracy.

B. Democracy versus Non-Democracy

To make transitions to and from democracy easier to track, we will group each data set’s two non-democratic forms of government (tyranny and oligarchy; autocracy and anocracy) into a single “non-democracy” category.²⁹ We have seen in Figures 2 and 3 that the number of

²⁹ Acemoglu and Robinson (2006) group Polity IV data similarly in their exploration of transitions and stability.

democracies increases over time. We can see in Figure 4 that transitions both to and from democracy occur. How do those two pieces fit together?

We provide Table 1 so the reader can see the data that underlie Figures 5 and 6, which we will discuss in the next two paragraphs. Table 1 presents the number of each of the now eight types of possible transitions that occur as countries move from one twenty-year interval to the next:

D-D, D-N, N-D, N-N, D-limbo, limbo-D, N-limbo, limbo-N,

where D stands for “democracy” N stands for “non-democracy” and “limbo” represents the source or destination of states that appear in the data set for the first time, or disappear from the data set.

Figures 5a and 5b charts, by twenty-year intervals, the *source* of each democracy that appears in the data sets, with and without “limbo.” In both ancient Greece and the modern world, by far the largest source of democracy in any given interval are those states that were democratic in the preceding interval. Existing democracies (D-D transitions) account for 50-70 percent of Greek democracies and 60-80 percent of modern democracies in any given interval. The next most important source of democracy is transition from existing non-democracies (N-D), which explains 10-30 percent of new democracies in both eras. Finally, and perhaps surprisingly, the appearance of new states in the data set (“limbo-D”) is an important source of democracy in *both* eras.

Figure 6 charts transitions *from* democracy. Figure 6a includes transitions to and from limbo. As noted above, transitions away from democracy are common in the ancient Greek data, but rare in the modern data. In order to make comparison of D-D and D-N transitions easier, Figure 6b presents the data with the limbo category excluded. For both ancient Greece and the

modern world, through the first six (of the ten) transition periods, the vast majority of democracies remain democracies as they move from interval to interval. For both ancient and modern data, this changes in the seventh transition period, when more than half of ancient Greek democracies transition to non-democracy, and nearly half of all modern democracies do so as well. In each case, the gap widens again subsequently, but never achieves the level of the earlier periods.

VII. WHAT COMMON FACTORS MAY BE AT PLAY?

We have documented similar patterns of democratic expansion and transition in ancient and modern worlds. In this section, we will discuss what might explain them, focusing on three factors that have been emphasized by researchers: the role of neighboring states, of warfare, and of hegemonic states. We will also speculate on why the adoption of democracy occurred more quickly in ancient Greece.

The fact that nearby states influence each other's political institutions is now well established. For example, Leeson and Dean (2009), who provide a survey of the literature, find that about 10 percent of the change to or from a democratic constitution is reflected in the geographic neighbor's constitution. Fleck and Hanssen (2013b) offer a related model in which institutional choices are influenced by the institutional quality of neighbors, particular those to which its citizens might flee. Although Fleck and Hanssen test their model with modern data, they discuss why they would expect it to apply with particular strength to ancient Greece, with its common language and culture and the short distances between *poleis*. In the terminology of "domino theory" (a favorite of cold warriors), the typical *polis* had many nearby dominos, which would speed the transition to more responsive political institutions, including democracy.

A second factor common to the ancient and modern worlds is warfare. Morris (2014) argues that war promotes institutional fitness, because losers do not survive as independent (or at least untransformed) states. This takes on particular importance in light of the fact that nondemocracies tend to block information flows and appoint incompetent but loyal public officials, both of which may bolster the autocrat's hold on power at the cost of producing a weaker, more vulnerable state (see the review in Ergorov and Sonin, forthcoming).³⁰ Fleck and Hanssen (2006) develop a model in which a greater threat of military conflict can spur democracy if expanding the franchise will increase aggregate wealth (via securing property rights held by the *demos*) and the newly enfranchised will support using a substantial share of that wealth for a public good (namely defense). They apply the model to ancient Greece, finding support. Warfare was much more common in ancient Greece than in the modern world (Hanson 1983), and this could help explain the more rapid adoption of democracy: Ruling elites in a non-democratic *polis* facing likely military defeat would have strong incentives to improve the institutional fitness of their *polis*, increasing the likelihood of democratic experiments.

Finally, the spread of institutions in ancient Greece, as in the modern world, was influenced by dominant states. For most of the Classical Period, democratic Athens competed for hegemony with oligarchic Sparta (and later with oligarchic Thebes). Athens' allies were primarily democratic while those of Sparta were primarily oligarchic. In part, this occurred because of who lined up with whom, but very importantly, Athens and Sparta converted regimes, so that constitutions aligned with their coalitions.³¹ Since the mid-twentieth century, ancient

³⁰ Joseph Stalin infamously executed his senior military officers shortly before the USSR was invaded by Nazi Germany, while Russia's Vladimir Putin appears to have severely underestimated the resistance he would face in Ukraine.

³¹ On alliances between *poleis*, see Mackil (2013), who analyzes the development and function of *Koina*, a form of political alliance that developed in ancient Greece.

Athens' role of dominant democratic power has been played by the United States. With the collapse of the Soviet Union – the autocratic power of the Cold War era – the democratic United States became the undisputed hegemon. What followed, of course, was a sea change in the number of democracies; we see this in Figures 2a and 2b. The historical evidence is quite clear that shifts in Athenian and Spartan influence, and similar shifts in American and Soviet influence, contributed to the waxing and waning of democracy. With so many small states in close proximity to Athens, we can offer a conjecture – and topic for future research – that the rise of Athenian hegemony contributed to the relatively more rapid spread of democracy in our ancient (vs. modern) data.

VIII. CONCLUSION

We have compared two hundred years of constitutions data from ancient Greece and the modern world. Broadly speaking, we observe three things. First, in both ancient Greece and in the modern world, autocracy was the most common form of constitution in the years before the appearance of the first democracy, while democracy was the most common constitution two-hundred years later. Second, democracy became the dominant form of government more rapidly in ancient Greece than in the modern world: Within a century of the emergence of the first Greek democracy, half of all known Greek constitutions were democratic, whereas it took the modern world two centuries to reach that point. Third, democracy appears to be more stable in the modern world than in ancient Greece, but so does non-democracy.

For democracy to increase in prevalence, it is necessary (obviously) for there to be more transitions to democracy (N-D) than away from democracy (D-N). And that is what we observe as a long run tendency in both ancient Greece and the modern world. That said, a closer look at

the data does not show a steady rise of democracy in either period. When we look at the transition probabilities for 20-year intervals, we see both of the following: Democracies are more likely to remain democracies (D-D) than become non-democracies (D-N); non-democracies are more likely to become democracies (N-D) than democracies are to become non-democracies (D-N). If both of those conditions held over the long run and a steady state were reached, the majority of constitutions would be democratic. A critical question, however, is whether those transition probabilities are sufficiently stable in the long run. For the ancient world, we will never know the answer: The Greek experiment ended abruptly with the Macedonian invasion and the rise of the ultimate Greek autocrats: Philip of Macedon and, his son, Alexander the Great. For the modern world, the answer also remains uncertain, given how recently it reached the 50 percent threshold. Comparison to ancient Greece provides little reason to be sanguine about the next stage in democracy's "expansion."

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TABLE 1: Transitions by Time Interval**ANCIENT
GREECE**

	<u>D-D</u>	<u>D-N</u>	<u>N-D</u>	<u>limbo-D</u>	<u>D-limbo</u>	<u>N-N</u>	<u>limbo-N</u>	<u>N-limbo</u>	<u>TOTAL</u>
int 1 ==>2	1	1	3	0	0	23	13	18	59
int 2 ==>3	2	2	4	0	1	21	7	10	47
int 3 ==>4	3	2	5	1	3	19	9	8	50
int 4 ==>5	6	1	4	0	1	12	15	12	51
int 5 ==>6	6	1	5	22	0	19	17	5	75
int 6 ==>7	17	7	5	8	13	22	22	11	105
int 7 ==>8	10	16	5	1	3	47	6	13	101
int 8 ==>9	10	5	10	8	6	31	5	16	91
int 9 ==>10	9	7	18	3	21	18	12	11	99
int 10 ==>11	7	4	9	12	4	13	18	10	77
TOTAL	71	46	68	55	52	225	124	114	755

**MODERN
WORLD**

	<u>D-D</u>	<u>D-N</u>	<u>N-D</u>	<u>limbo-D</u>	<u>D-limbo</u>	<u>N-N</u>	<u>limbo-N</u>	<u>N-limbo</u>	<u>TOTAL</u>
int 1 ==>2	1	0	1	0	0	32	16	0	50
int 2 ==>3	1	0	0	2	0	49	8	2	62
int 3 ==>4	4	1	2	0	0	58	7	5	77
int 4 ==>5	8	1	6	0	0	57	1	6	79
int 5 ==>6	11	1	4	0	3	44	5	1	69
int 6 ==>7	19	1	7	4	1	52	9	2	95
int 7 ==>8	15	11	2	7	0	82	15	3	135
int 8 ==>9	28	9	17	13	0	91	44	2	204
int 9 ==>10	37	21	17	14	0	162	16	2	269
int 10 ==>11	74	20	50	4	1	154	2	8	313
TOTAL	198	65	106	44	5	781	123	31	1353

Interval definition	Ancient Greece	Modern World
Interval 1	540-520	1800-1819
Interval 2	520-500	1820-1839
Interval 3	500-480	1840-1859
Interval 4	480-460	1860-1879
Interval 5	460-440	1880-1899
Interval 6	440-420	1900-1919
Interval 7	420-400	1920-1939
Interval 8	400-380	1940-1959
Interval 9	380-360	1960-1979
Interval 10	360-340	1980-1999
Interval 11	340-320	2000-2015

FIGURE 1a: Number of States reporting Constitution by Twenty-year Intervals

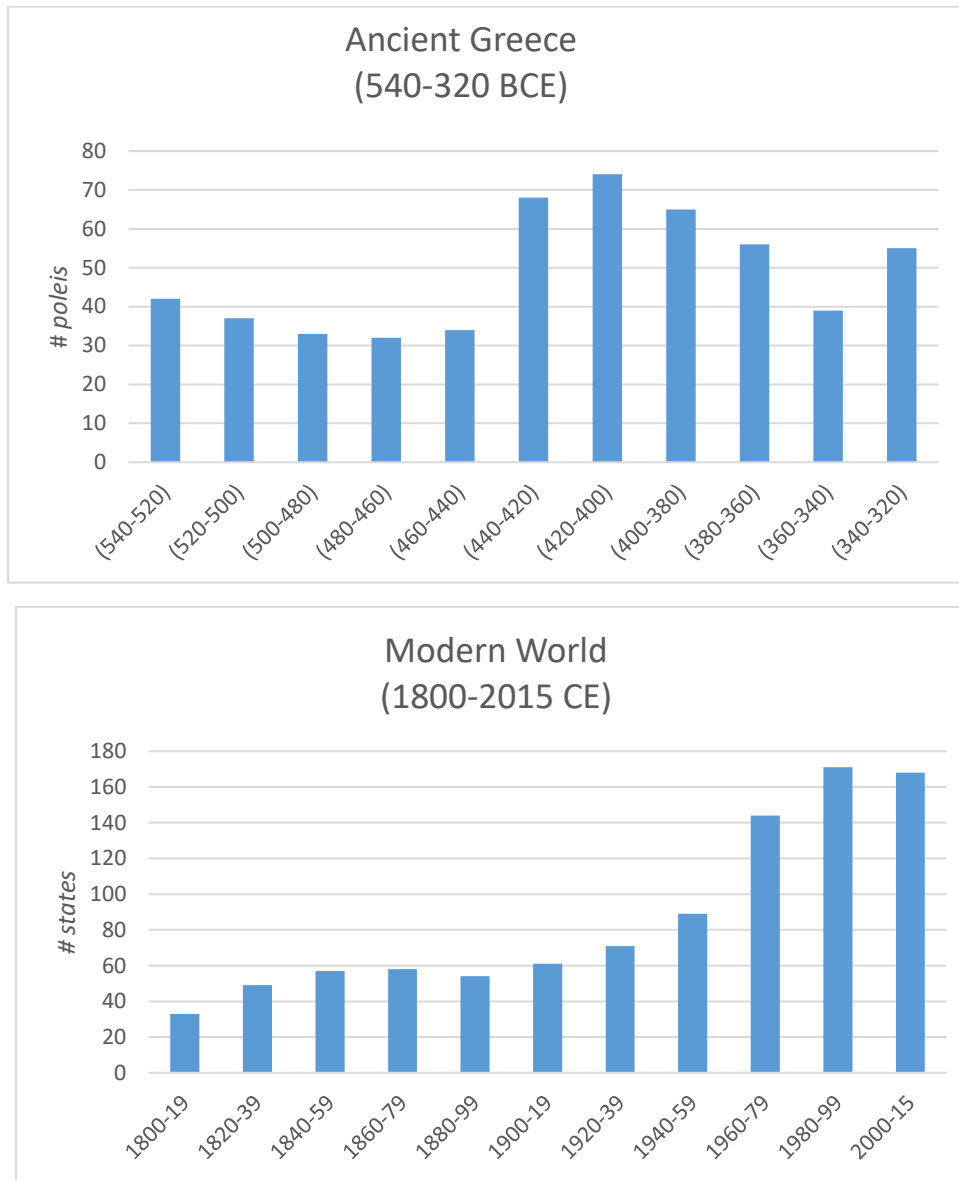
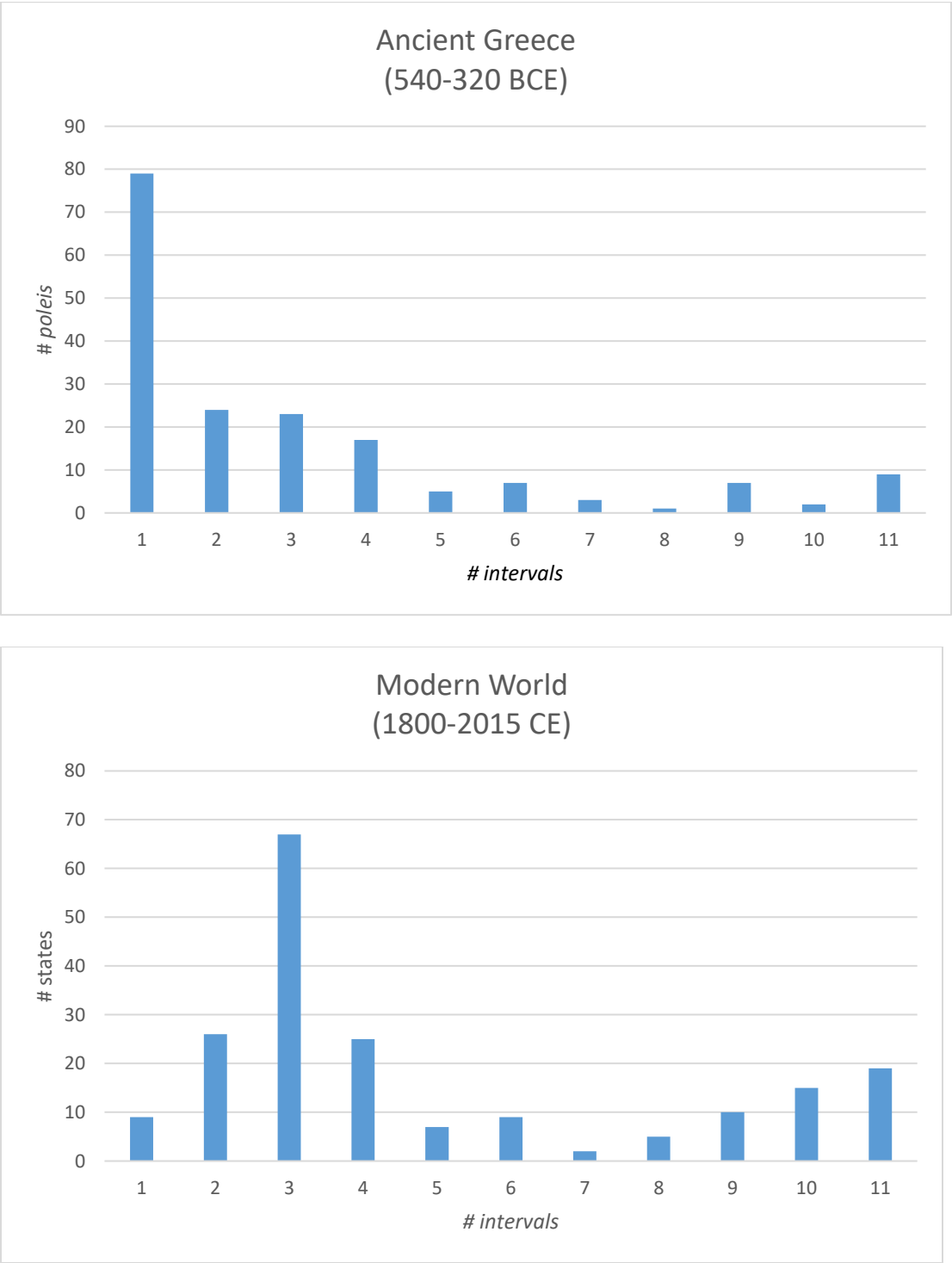
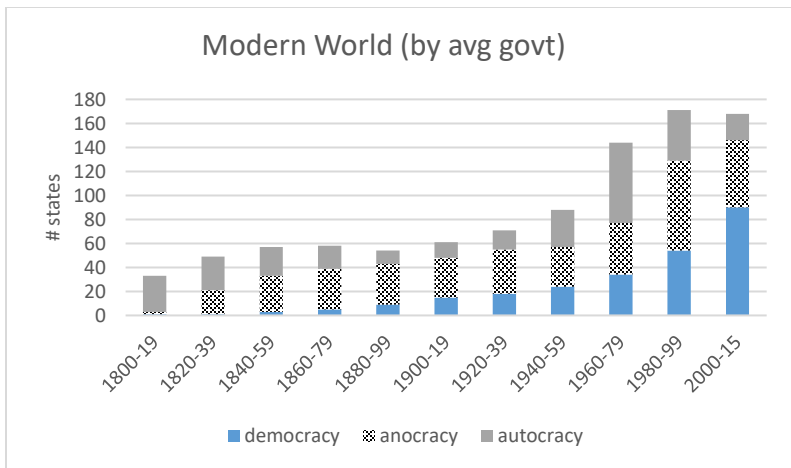
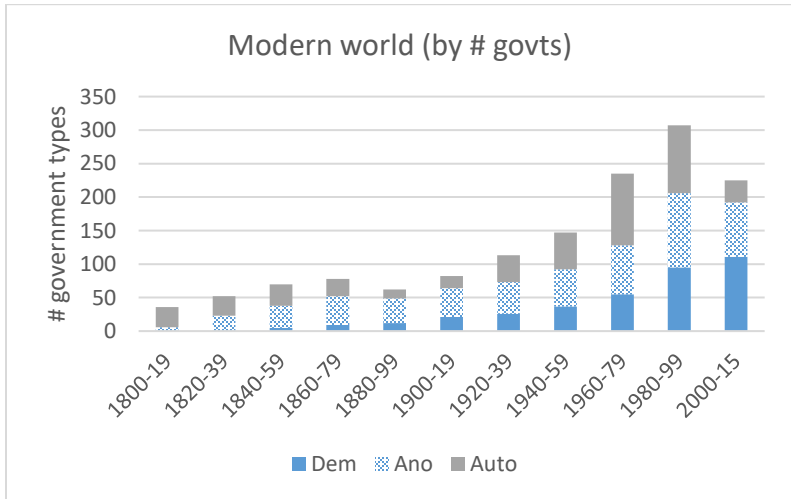
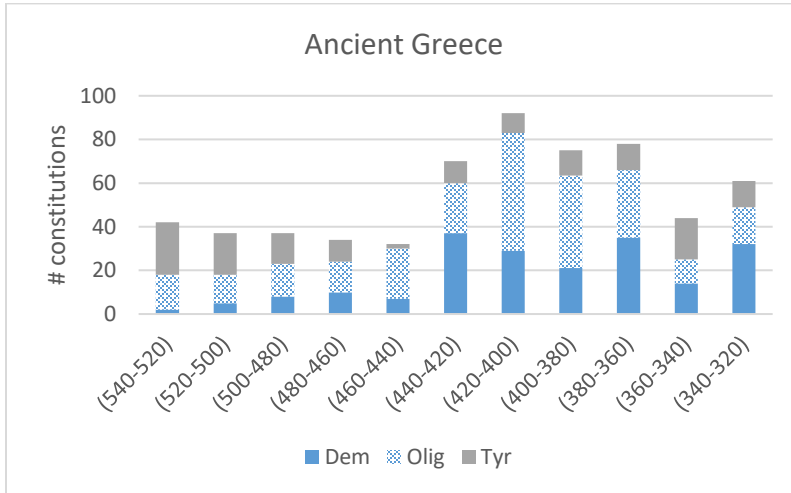


FIGURE 1b: Number of Twenty-Year Intervals with Reported Constitution



**FIGURE 2a: Constitution by Twenty-Year Interval
(number)**



**FIGURE 2b: Constitution by Twenty-Year Interval
(percent)**

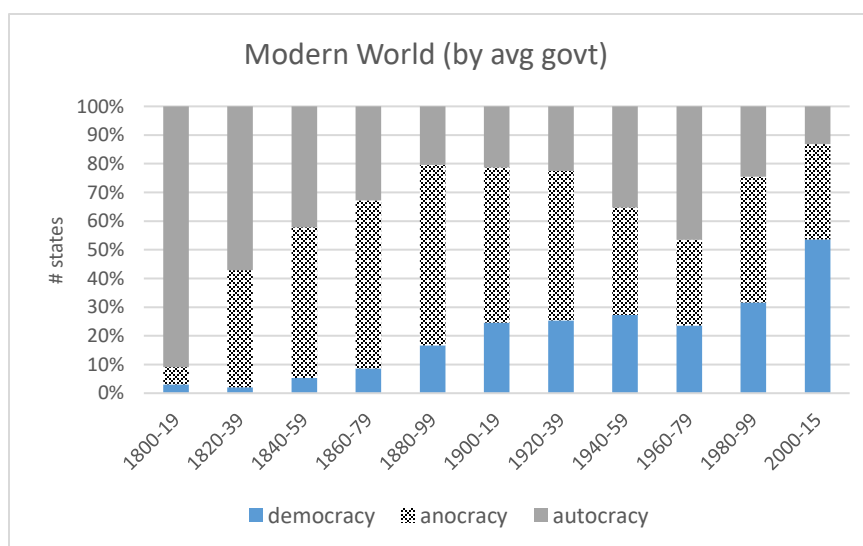
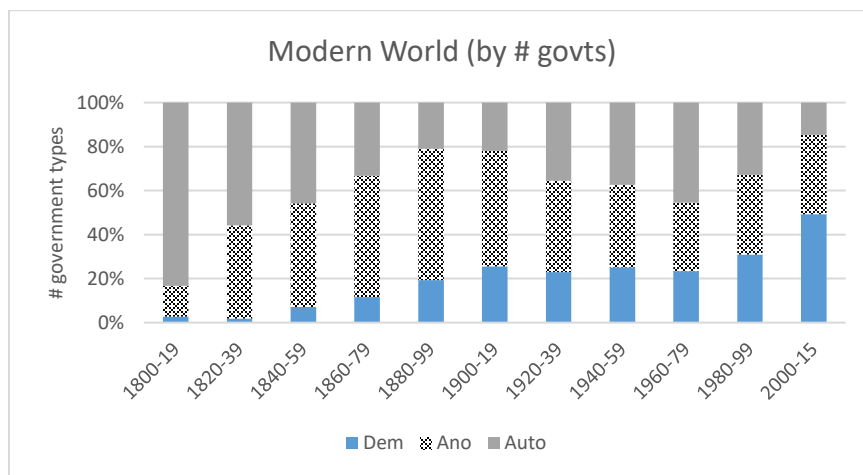
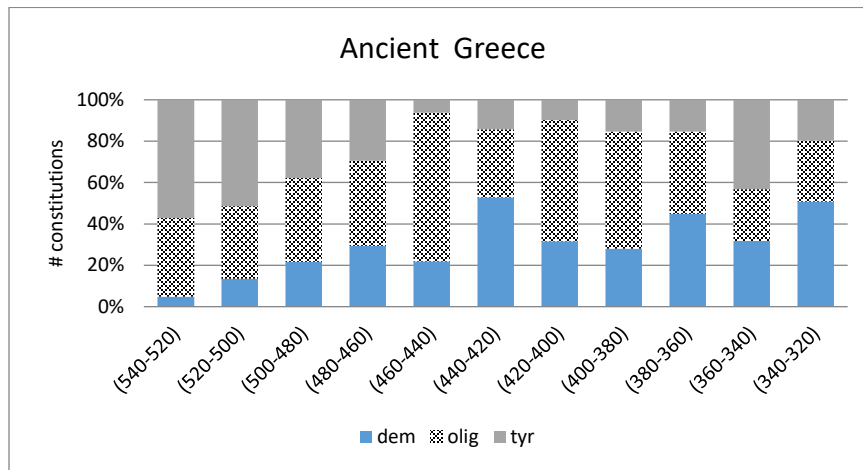


FIGURE 3: Constitution by Interval, States represented in all intervals only

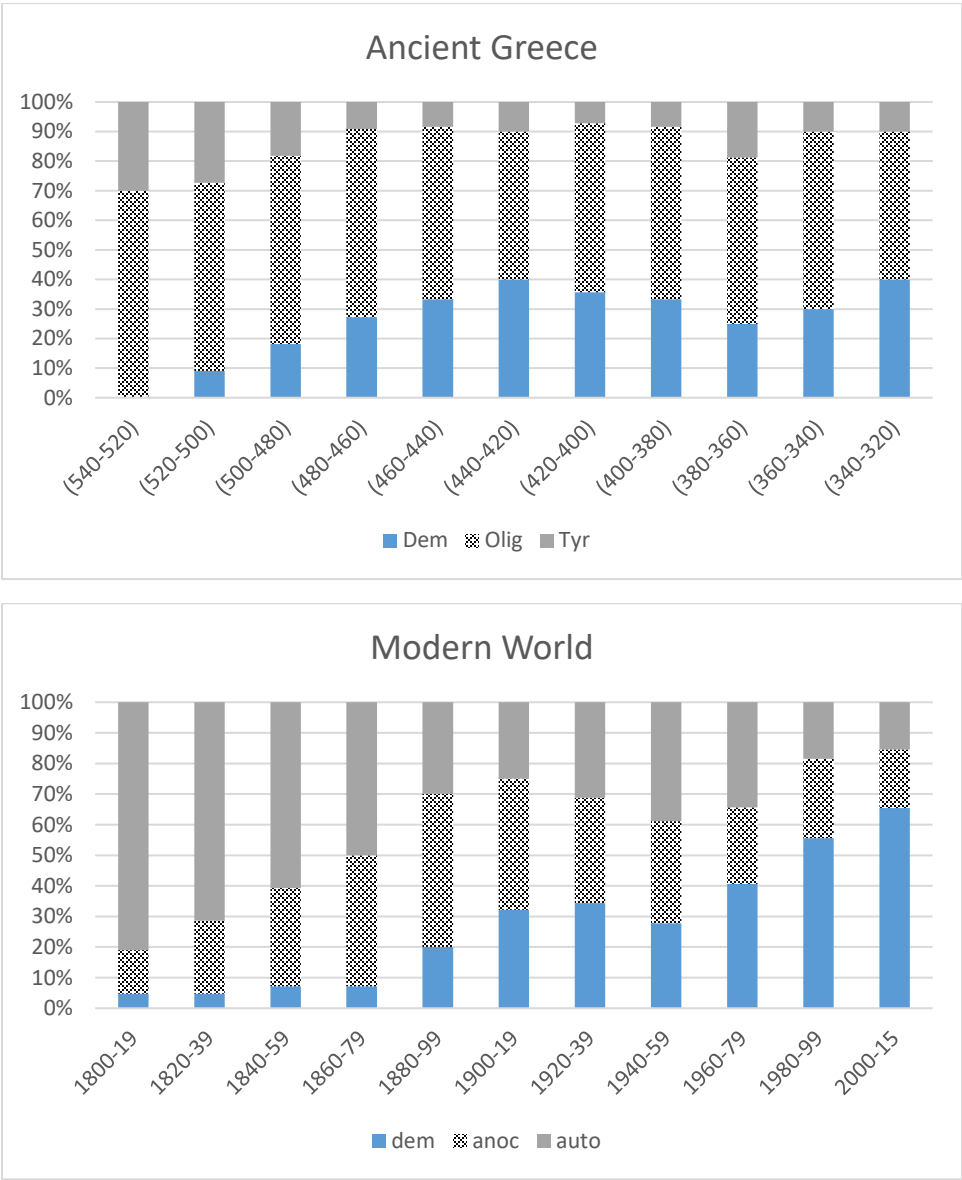
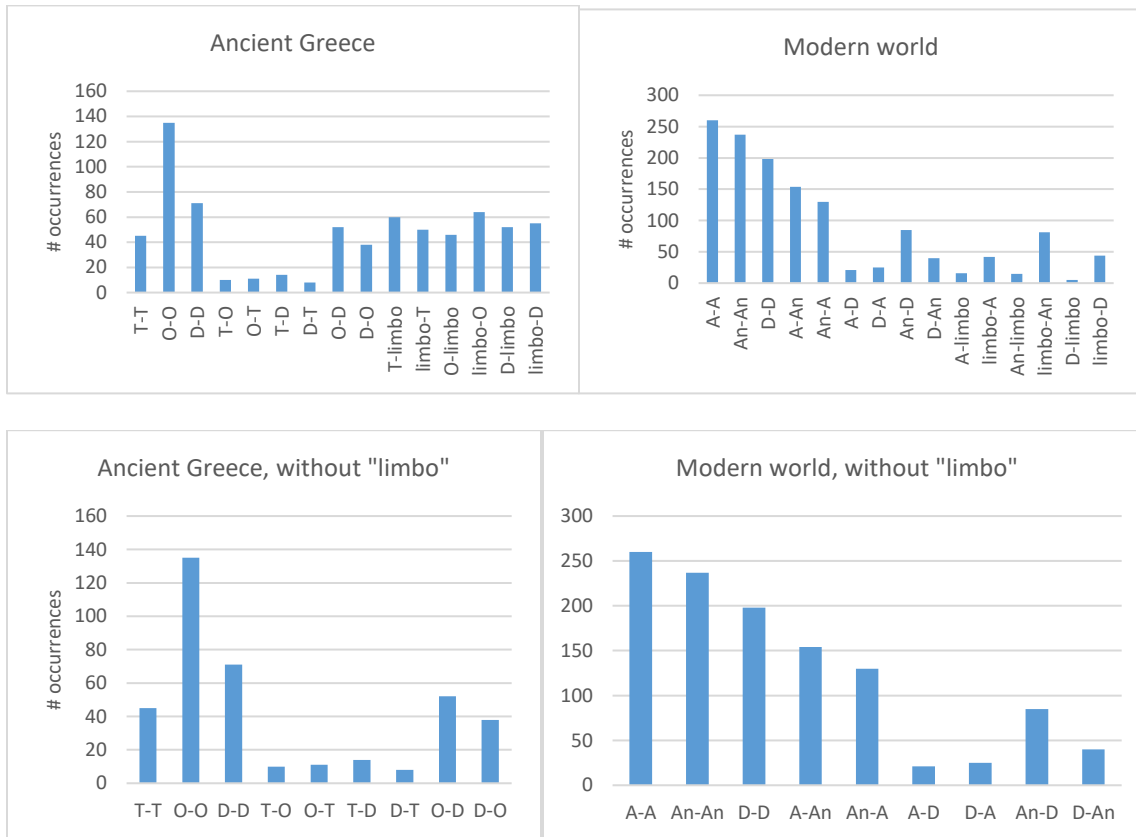
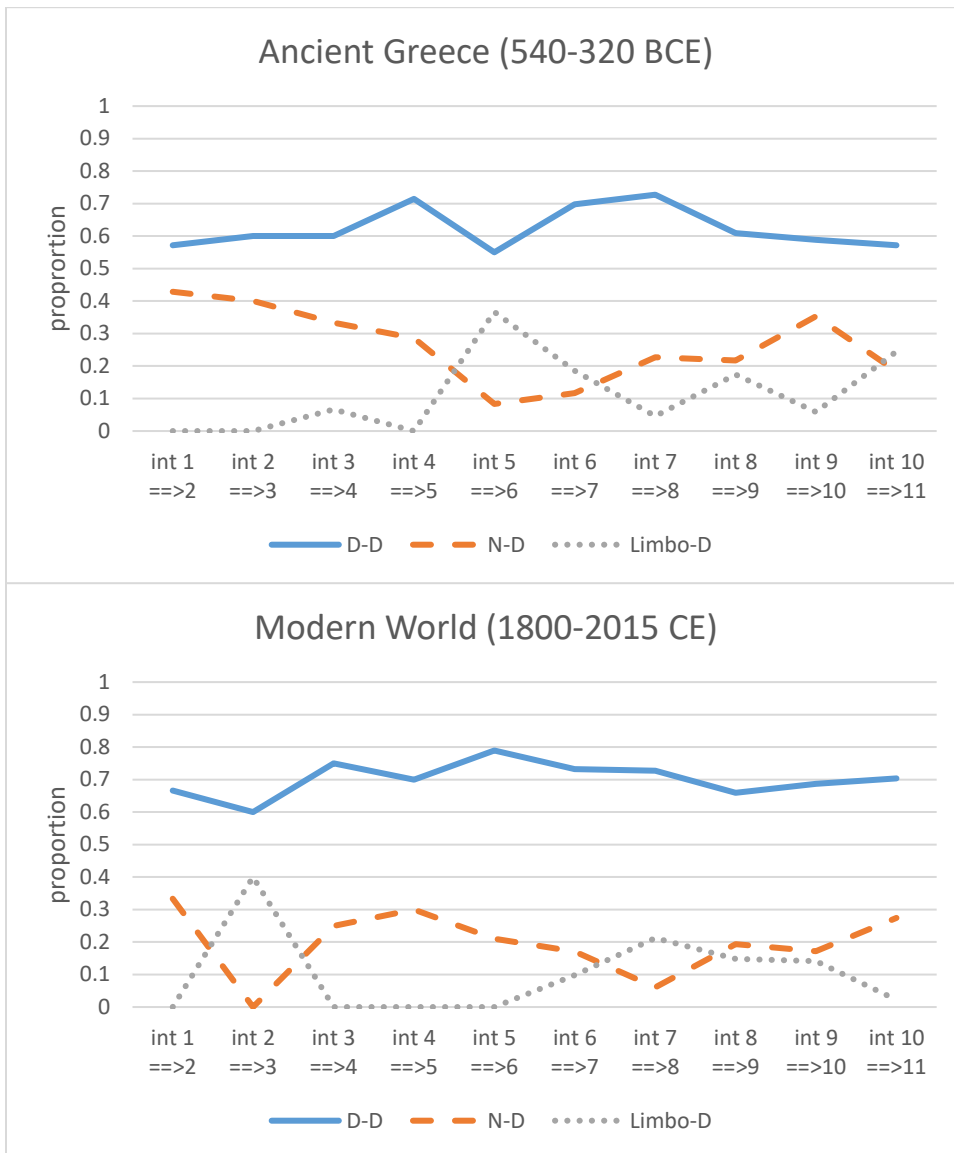


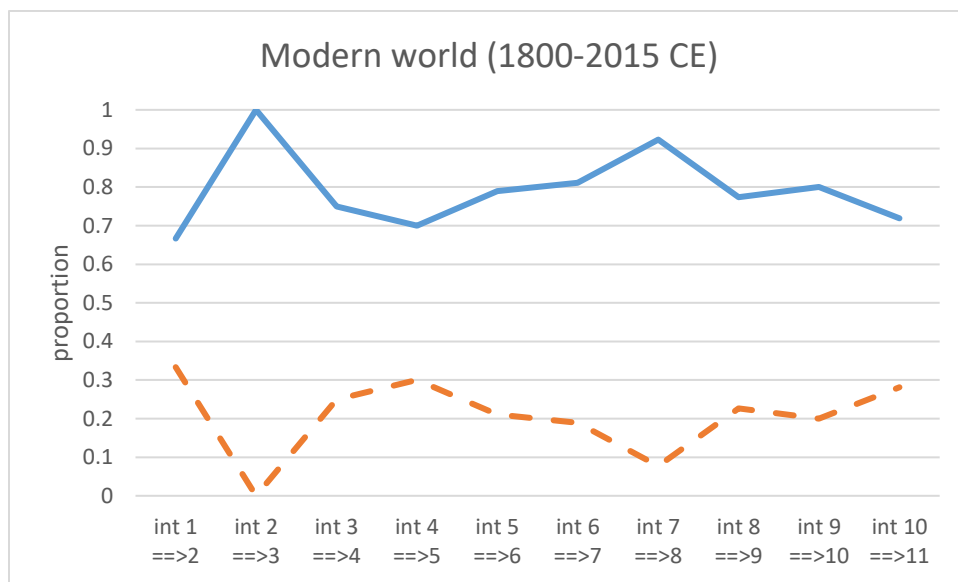
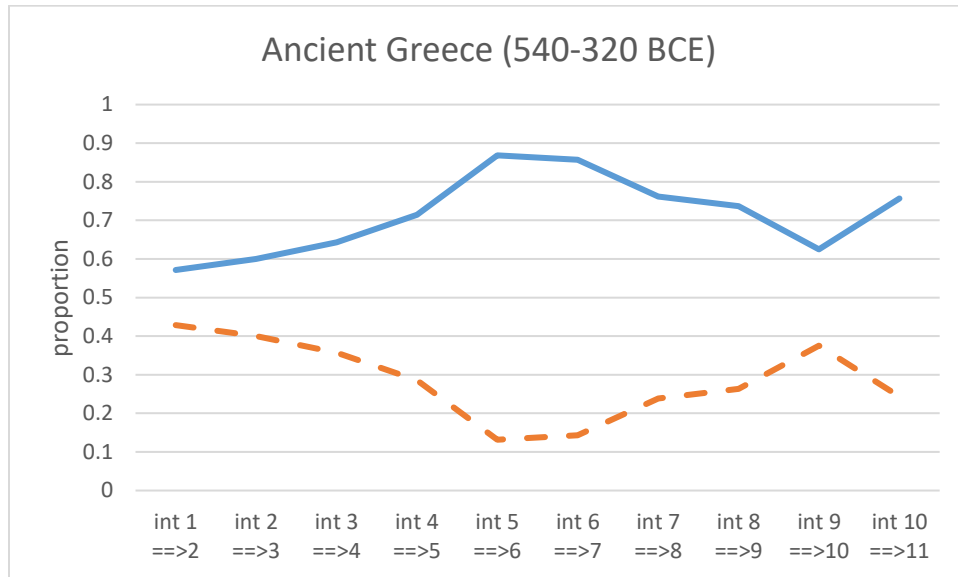
FIGURE 4: Types of Transition



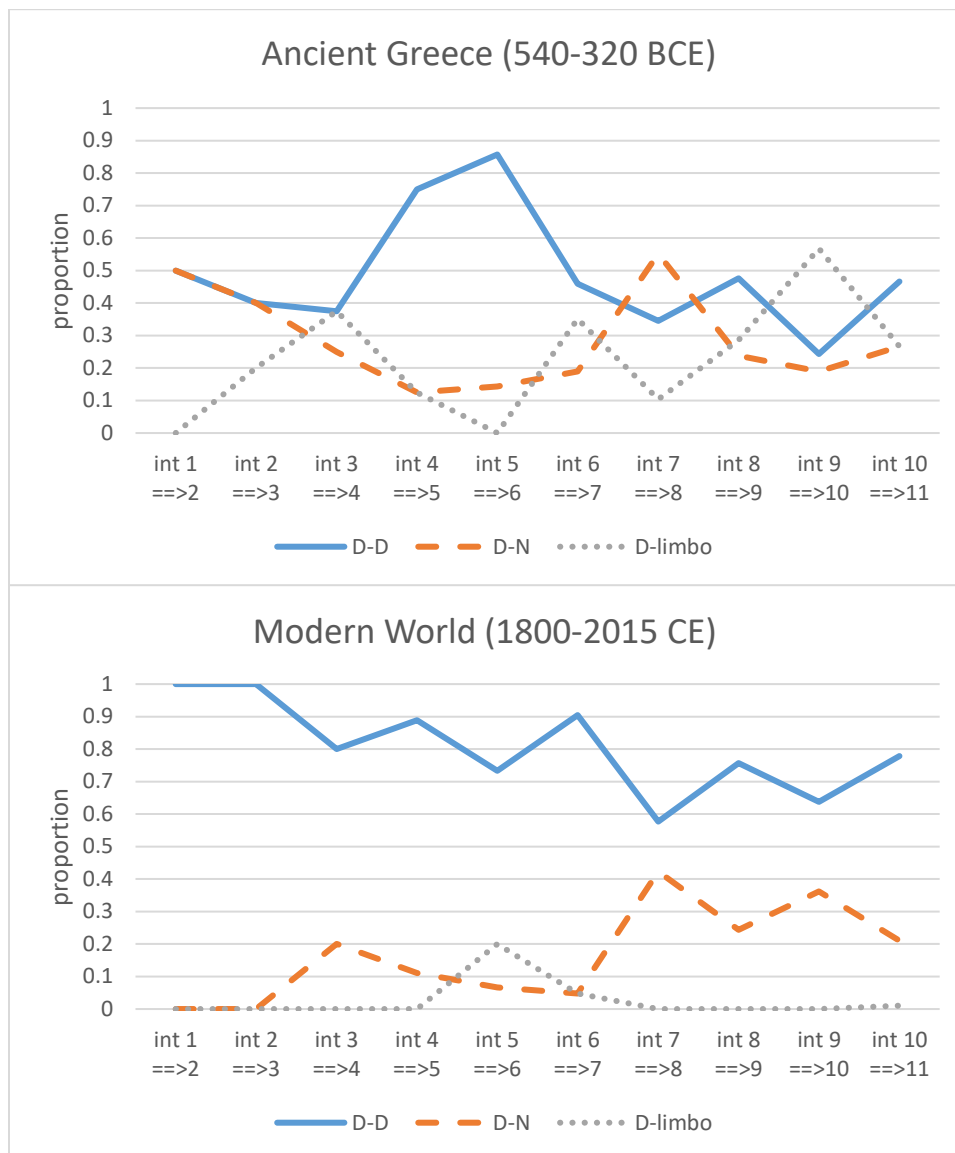
**FIGURE 5a: Transitions to Democracy
(All transitions)**



**FIGURE 5b: Transitions to Democracy
(Limbo excluded)**



**FIGURE 6a: Transitions from Democracy
(All transitions)**



**FIGURE 6b: Transitions from Democracy
(Limbo excluded)**

