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A peculiar institution? Greco–Roman monogamy in global context

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Abstract

In what sense were the ancient Greeks and Romans monogamous, and why does it matter? This paper addresses this question from a transdisciplinary and global cross-cultural perspective. It considers the physical and anthropological record of polygyny, delineates the historical expansion of formal monogamy, and critiques complementary social science models of mate choice. This approach allows us to situate Greco–Roman practice on a spectrum from traditional polygamy to more recent forms of normative monogyny. Whilst Greco–Roman legal and social norms stressed the nexus between monogamous unions and legitimate reproduction, they accommodated a variety of men's polygynous relationships outside the nuclear family. Greco–Roman monogamy's historically most significant consequence was its role in shaping Christian and later 'Western' marital norms that eventually gained global influence.

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1. Defamiliarizing Greco–Roman monogamy

Greek and Roman men were not allowed to be married to more than one wife at a time and not supposed to cohabit with concubines during marriage. Not even rulers were exempt from these norms. That these basic facts have generally received little attention and occasioned no surprise among historians indicates a considerable lack of cross-cultural awareness.¹ Greco–Roman monogamy may well appear unexceptional from

a modern Western perspective but was far from common at the time. Moreover, the realities of Greco–Roman prescriptively universal monogamy significantly differed from modern experiences. My paper is a first attempt to define and contextualize this institution.

Biological and anthropological evidence shows that, despite some spatial variation, moderate levels of polygynous relationships were common for most of human history (Sections 2–4). The overlap of monogamous marriage norms and polygynous practices requires a measure of terminological re-conceptualization: conditions in the Greco–Roman world are best defined as prescriptively universal monogamous marriage that co-existed with (male) resource polygyny (Section 5). The survey in Section 6 relates this configuration of marriage and mating types to broader historical developments leading up to its post-ancient survival and gradual expansion. Existing theories of female mate choice that seek to account for the initial emergence of polygamous or monogamous preferences fail to explain how monogamous marriage could ever become an exclusive norm: an auxiliary model of male mate choice mediated by egalitarian norms is required

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¹ Erdmann, 1934, pp. 87–103 appears to be the most substantial discussion of Greek monogamy and polygyny. Recent scholarship on the Greek and Roman families usually gives short shrift to or completely ignores this issue: for rare exceptions, see Friedl, 1996, esp. pp. 25–39, 214–228, 380–394; Ogden, 1999. Monogamy is not even mentioned in the index of Krause, 1992, a bibliography of 4,336 titles on the Roman family. Under the label “monogamy,” Treggiari, 1991, pp. 229–319 focuses on spousal affection, perennial monogamy, and adultery. Greco–Roman monogamy has mostly been problematized by scholars from outside the field of Ancient History: see esp. MacDonald, 1990, pp. 204–227; Betzig, 1992a,b.

to account for this particular outcome (Section 7). Although this explanatory framework appears to be consistent with early Greek history, the nature of the evidence prevents the empirical verification of any generalizing model (Section 8). This finding meshes well with the historical rarity of prescriptively universal monogamy. The subsequent diffusion of this institution in the medieval and modern periods is best seen as a function of unbroken continuity of core norms from their unique Greco–Roman roots. At the same time, the effectively polygynous dimension of Greco–Roman monogamy separates it from recent permutations of this marriage type.

2. Biology

Biologists distinguish between “genetic monogamy,” which refers to mutually exclusive reproductive mating arrangements between two partners, and “social monogamy,” in which mutually exclusive pair-bonding need not be matched by reproductive outcomes. While “genetic monogamy” is fairly rare across animal species, “social monogamy” is common among birds but atypical of mammals. Physiological evidence suggests that humans are unusual among mammals—including primates—for being predominantly monogamous and only mildly polygynous in both “genetic” and “social” terms.

A moderate degree of polygyny (a term preferable to “polygamy”²) may be extrapolated from two observations. One is that in humans, adult males are on average bigger (i.e., taller as well as heavier) than females. Male-biased sexual dimorphism is a correlate of polygyny: the more polygynous a species, the bigger males are in relation to females. Species with female harems consequently display extreme levels of dimorphism: male sea lions for example can be three times as heavy as females. The human dimorphism index of 1.15 (based on weight and height) indicates that humans are only mildly polygynous. This basic ratio has been traced back as far as *Australopithecus afarensis* more than 3 million years ago (Reno, Meindl, McCollum, & Lovejoy, 2003). The other reason is that whereas “Mitochondrial Eve”—our matrilineal most recent common ancestor—lived about 200,000 years ago, “Y-chromosomal Adam”—our patri-

lineal most recent common ancestor—is considerably less distant, having lived only 90,000–60,000 years ago. This is a function of the generally well-documented fact that male reproductive success tends to be more variable than for females, which is consistent with some degree of polygyny.³

3. Incidence

This notion of moderate polygyny is supported by the global anthropological record. We find that most societies condoned social and genetic polygamy—almost always in the form of polygynous polygamy—but also that most individual bonding and mating arrangements were monogamous. Of 1,154 societies described in the Human Relations Area Files, 93% recognize some degree of socially sanctioned polygyny, and in 70% of all cases polygyny is the preferred choice (which does not mean that it is dominant in quantitative terms) (Clark, 1998, p. 1047). The “Ethnographic Atlas Codebook” classifies 186 of 1,195 societies for which data are available as monogamous, or 15.6% (Gray, 1998, pp. 89–90). Precision is difficult to attain due to the frequent failure to distinguish between rare, de facto absent, and formally banned social polygamy, or between polygamy (as a form of marriage) and other forms of polygyny (such as concurrent concubinage). This casts doubt on the finding that among 862 societies surveyed in George Peter Murdock’s *Ethnographic Atlas*, “monogamy” is observed in 16% of all cases ($n=134$).⁴ In a more recent study of 348 better-known societies, 20% ($n=71$) are defined as monogamous whereas another 20% displayed limited polygyny and fully 60% more frequent polygyny (Burton, Moore, Whiting, & Romney, 1996, p. 89). However, these numbers are problematic in that the underlying coding places each society in a single category. This raises the possibility that some or perhaps even many of these putatively “monogamous” cultures allowed for a measure of polygyny, most notably among rulers, or tolerated some form of formalized concurrent concubinage—a suspicion borne out by the fact that ancient Egyptians and Babylonians are classified as “monogamous,” regardless of well-documented resource polygyny amongst their rulers.⁵ This problem is well

² For the sake of clarity, in the following I apply the terms “monogamy” and “polygamy” only to *marital* unions and use “monogyny” and “polygyny” more broadly to denote exclusive or parallel sexual and reproductive relationships. “Polygynous polygamy” is meant to specify the nature of polygamous arrangements, and “polygyny” may but need not include “polygynous polygamy.” Marital polyandry has been extremely rare in world history and will not be considered here.

³ For extreme genetic manifestations of this phenomenon, see Zerja et al., 2003 (8% of Central Asian men may descend from Genghis Khan); Xue et al. 2005 (1.6 million Chinese and Mongolian men may descend from the Qing dynasty).

⁴ Murdock, 1967, pp. 62–125. Murdock, 1981 surveys the 563 best-known of 1,264 societies. In this sample, independent monogamous families account for 11.7% of the total ($n=66$) (133 table 4).

⁵ Murdock, 1967, pp. 82, 86. In the same vein, Manchu and northern Chinese are likewise counted as “monogamous” (86).

illustrated by the Western North American Indian Data Set. In each of its 172 societies, monogamy is found to be the dominant form of marriage, accounting for 60+% of all unions (Jorgensen, 1980, 1999, pp. 235–266). At the same time, in only 28 cases, or 16%, is polygyny reported to be absent or very rare: once again, the failure to distinguish between “very rare” and “no polygamy” is critical (Jorgensen, 1980, p. SO291; Borgerhoff Mulder, Nunn, & Towner, 2006, p. 61).

4. Distribution

For all their deficiencies, these surveys convey the impression that largely monogamous systems were not very common and that *strict* social monogamy was even rarer in world history. Monogamy and polygamy are non-randomly distributed in both spatial and developmental terms.⁶ One study draws on data from 351 societies to divide the world into nine macro-regions defined by systematic variation in social structure. Most of Eurasia and North Africa consist of two regions labeled “North Eurasia & Circumpolar” and “Middle Old World.”⁷ These major cultural entities broadly correspond to fundamental phylogenetic divisions (Jones, 2003, p. 506, based on Cavalli-Sforza, Menozzi, & Piazza, 1994). The North Eurasian and Circumpolar region is the older of the two and associated with moderately patricentric kinship systems. The Middle Old World region was a later development probably linked to the rise of pastoralism and later farming, and defined by strong patricentrism and the political and military dominance of patrilineal groups. Cross-culturally, matricentrism is strongly correlated with monogamy and patricentrism with polygyny (Burton et al., 1996, pp. 93–94, cf. 109 Fig. 13). Thus, the earliest evidence of what has been called “Socially Imposed Monogamy” or “SIM”—in ancient Greece and Rome—hails from the faultline between these two Afroeurasian macro-regions and more generally from a more or less polygynous environment.

5. Concepts

“SIM” represents a cultural construct that prohibits concurrent marital relations with more than one person regardless of socio-economic status. However, “Socially Imposed Universal Monogamy” or “SIUM” would be a

Table 1

Idealized configurations of marital and mating practices.

Marriage type	Mating type	Type of monogamy
Polygamy	Polygyny	Ecologically imposed monogamy
Monogamy	Polygyny	Socially imposed universal monogamy
Monogamy	Monogyny	Socially imposed universal monogamy

more precise term that captures the full meaning of this principle by emphasizing the lack of exemptions even for rulers and elites. Social constraints on monogamy differ from what is known as “Ecologically Imposed Monogamy” (EIM) which occurs in an environment where polygamy is admissible in principle but certain men cannot afford to support more than one wife or family or therefore limit themselves to one spouse at a time.⁸ From a global perspective this used to be the dominant form of marriage or cohabitation: EIM could take many forms, from instances where a sizeable proportion of all men in a given population marry multiply while many others go without wives to de facto universal monogamy in small groups confined to particularly unfavorable environments.

The wide range of quasi-marital and cognate arrangements indicates that the traditional dichotomy of “polygamy” and “monogamy” fails to capture real-world differentiation among marriage and mating practices. I would like to propose a trichotomy consisting of (1) “polygamy,” defined by the overt presence of multiple ties of sexual access and “legitimate” reproduction (whilst allowing for differentiation among female spouses, especially between a principal wife and lower-ranking co-wives); (2) “monogamy/polygyny,” where marital relationships and their attendant legal and social consequences are limited to single female partner but the husband is—in terms of legal rules and social sanction—free to (or may formally obtain his wife’s consent to) pursue additional non-casual sexual and reproductive relationships that may (but need not) entail cohabitation, most notably with co-resident or altrilocal concubines; and (3) “monogyny,” with—ideally—genuinely exclusive marital and sexual relationships (where applicable excluding casual encounters provided by “affairs” or prostitution) (Table 1). Given the degree of cultural variation in definitions of “marriage,” for example, these ideal types are necessarily artificial and over-schematic and merely meant to delimit segments of a continuous spectrum: thus, the intermediate “monogamy/polygyny” pattern is particularly elastic, although the acceptance or rejection of co-residence might serve as a significant

⁶ For developmental differentiation, see below, at n.9.

⁷ Burton et al., 1996, pp. 100–104, with Jones, 2003: 509–510. The “Middle Old World” encompasses North Africa, the south Balkans, and most of Asia except for Siberia and South-East Asia, with most of Europe and Siberia defined as “North Eurasia & Circumpolar.”

⁸ For the concepts of EIM and SIM, see Alexander et al., 1979, pp. 418–420. “SIUM” is my own coinage.

marker of differentiation. Serial or perennial “monogyny,” needless to say, cannot be expected to prevail in pure form but simply denotes one end of the spectrum.

The matrix in Table 1 shows that in a society with socially condoned polygamy, monogamous relationships may arise from ecological constraints (though not from social rules). At the same time, SIUM accommodates a wide range of actual habitational and mating practices, from intense polygyny with subordinates (e.g., slave harems) to (serial or perennial) monogyny.

6. History

This tabulation not only differentiates among different marriage and mating practices but also provides a crude evolutionary sequence from top to bottom. Moderate—and ecologically mediated—polygyny appears to have dominated for millions of years. Francois Nielsen’s analysis of Murdock’s data shows that a weak trend away from polygamy was reversed in advanced horticultural societies (where women’s labor was and still is generally critical in generating resources) but subsequently resumed in agrarian systems: “monogamy” is attested for 10.5% of the surveyed hunter–gatherer cultures ($n=172$), 24.8% of simple horticultural systems ($n=157$), 6.5% of advanced horticultural systems ($n=261$), and 41.5% of agrarian societies ($n=135$), as well as for 12.1% of fishing cultures ($n=58$) and 21.6% of herders ($n=74$).⁹ This is consistent with the observation that in the Standard Cross-Cultural Sample ($n=186$), “46% of larger states have socially imposed monogamy, compared to 26% of smaller states, 10% of chiefdoms, and 11% of bands and tribes” (Sanderson, 2001, p. 332).

While agrarianism curtailed polygamy, in many cases it also helped to intensify reproductive inequality within polygynous systems.¹⁰ In a series of groundbreaking studies informed by the insights of Darwinian evolutionary psychology, Laura Betzig has documented a close relationship between stratification, despotism, and polygyny in early agrarian states (Betzig, 1986, 1992a,b, 1993, 1995, 2005). The pertinent evidence is too massive to be summarized here even in the most superficial manner: suffice it to say that it extends across thousands of years of Eurasian, African, and American history. Imperial state formation was particularly conducive to

the growth of harems for rulers and often the ruling elites more generally, for example in Pharaonic Egypt, the pre-Islamic and Islamic Middle East, India, China, South-East Asia, among the Aztecs and Inka, and in many African polities up to the fairly recent past (Scheidel, 2009, expanding on Betzig’s work). Polygyny was normally much more limited in sub-elite circles, reflected in references to bigamy in various Mesopotamian cultures and ambiguous evidence for Pharaonic Egypt but better documentation from Zoroastrian Iran, to name just a few examples. At the same time, formal barriers to non-marital polygynous relations between men and their slave women were normally lacking.

Moving on to the Greco–Roman world, elite polygyny looms large in the Homeric tradition (Wickert-Micknat, 1982, pp. 83–84; Mauritsch, 1992, pp. 92–98; Scheidel, 2009, pp. 286–288; Hunt, forthcoming). By the historical period, by contrast, SIUM was firmly established as the only legitimate marriage system: polygamy was considered a barbarian custom or a mark of tyranny and monogamy was regarded as quintessentially “Greek.” However, SIUM co-existed with concubinage even for married men: as far as we can tell, they were supposed to draw the line at cohabitation, which was considered inappropriate.¹¹ At the same time, married men’s sexual congress with their own slave women or with prostitutes was free of social and legal sanction. As several probable instances among both the Argead kings and later Hellenistic rulers show, polygamy persisted in “hellenized” Macedonia (Ogden, 1999). There is no sign of an early polygamous tradition in Rome. Whether concubinage was feasible concurrently with marriage has been debated in modern scholarship and the evidence is inconclusive: it was not until the sixth century CE, after centuries of Christian influence, that the emperor Justinian claimed that “ancient law” prohibited husbands from keeping wives and concubines at the same time.¹² As in Greece, sexual relations of married men with their own slave women were not unlawful, including relationships that resulted in offspring. Formal recognition of the latter was optional but not unknown. Moreover, ease of divorce underwrote a degree of effective polygyny: while men were unable to have more than one wife at a time they could marry several in a row, thereby raising reproductive inequality overall.¹³

⁹ Nielsen, 2004, p. 306 table 10, p. 309. The overall incidence is 17.9% ($n=857$).

¹⁰ Nielsen’s claim (2004, pp. 309–310) that maximum harem size was smaller in agrarian than in advanced horticultural polygynous societies is invalidated by the exclusion from his sample of many of the most egregious instances of harem polygyny in agrarian empires (cf. the dataset in Betzig, 1986, pp. 107–133).

¹¹ Scheidel, 2009, pp. 289–294. For temporary emergency authorization of bigamy in Athens following massive male casualties in the Peloponnesian War in the late fifth century BCE, see Ogden, 1996, pp. 72–75.

¹² Scheidel, 2009, section 3.5. Quote from the *Codex Iustinianus* 7.15.3.2.

¹³ On the serial aspect of monogamy in general see esp. Fischer, 1989.

Greco–Roman SIUM was preserved and gradually reinforced by the Christian church which labored to suppress polygamy among Germans and Slavs at a time when the Arab conquests lent ideological support to polygamy in parts of the Mediterranean and across the Middle East. The Middle Ages, as SIUM spread as a by-product of Christianization, witnessed the church's struggle against divorce and elite concubinage, practices whose curtailment would render monogamous precepts more effective (e.g., Goody, 1983; Brundage, 1987; MacDonald, 1995, pp. 7–18; and cf. also Herlihy, 1995, pp. 579–580). Ashkenazi Jewry followed this trend, highlighted by Gershom ben Judah's ban of polygamy at a synod around 1000 CE.¹⁴ In western Europe, a brief spell of Anabaptist polygamy in Münster in 1535/6 (and, if true, a decree in Nürnberg in 1650 reacting to the lack of men after the Thirty Years War) was to be the final gasp of this practice, whereas Mormonism subsequently briefly revived it in the United States in 1831.¹⁵ In the wake of European overseas colonization, demic diffusion and imitation by non-European populations finally elevated SIUM to a globally dominant principle. The spread of SIUM outside Europe was slow and has yet to be systematically tracked and analyzed. In Japan, legislation against polygyny commenced in 1880. Polygamy was banned in Thailand in 1935, in China in 1953, for Hindus in India in 1955, and in Nepal in 1963. The main exceptions to this global trend have been the least secularized Islamic countries of the Middle East and more generally sub-Saharan Africa. Despite the Quran's tolerance of up to four wives, countries such as Turkey (1926) and Tunisia (1956) have formally outlawed polygamy and others have imposed judicial restrictions on this practice. In what has been termed the "polygyny belt" from Senegal in the west to Tanzania in the east, 20–30% of married men tend to be in polygynous unions (Jacoby, 1995, p. 939, and more generally Lesthaeghe, Kaufmann, & Meekers, 1989).

In the very long run, the trajectory of historical change reaches from habitual resource polygyny at low levels of overall development to formal monogamy coupled with various forms of concubinage in early agrarian states and on to SIUM in parts of the first-millennium BCE Mediterranean that co-existed with de facto polygyny with slave women, a practice that subsequently declined

together with the institution of chattel slavery and evolved into church-backed monogamy accompanied by more casual relations with servants or other subordinates that were gradually curtailed by modernization. At this latest stage, European dominance underwrote the spread of this principle across much of the world.

7. Causation

This rough sketch of cultural change raises questions of causation. Two distinct but related issues are at stake: the reasons for variation in the incidence of polygynous polygamy and monogamy, and the motivation for the social imposition of universal monogamy regardless of status and resources.

7.1. Female choice

The overall incidence of polygyny may be explained as a function of female mate choice. Economists have long argued that polygyny is beneficial to most women if there is substantial inequality among men in terms of resources or other properties that are relevant to reproductive success.¹⁶ Simply put, a woman may be better off sharing a resource-rich husband with other women than to monopolize access to a resource-poor husband. In this context, moreover, polygyny not only benefits multiply married women but also monogamously married women in the same population by allowing them to avoid unions with the least desirable males.¹⁷ Conversely, this custom benefits male polygynists but harms other men to varying degrees, the more so the more unequally resources are distributed and this inequality is correlated with polygynous preferences. Hence polygyny tends to *reinforce* male inequality by matching reproductive inequality with resource inequality.¹⁸

¹⁶ Becker, 1974=Febrero and Schwartz, 1995, pp. 316–317; Grossbard, 1980, esp. p. 324; Becker, 1991, esp. pp. 87, 89. Becker, 1991, pp. 80–107 provides the fullest formal analysis of the economics of polygyny. Cf. also Bergstrom, in press.

¹⁷ For simple illustrations of the main point, see Wright, 1994, p. 97, repeated by Kanazawa and Still, 1999, pp. 27–28.

¹⁸ This observation is distinct from the notion that polygyny favors male polygynists if women produce gains other than children, especially by contributing to subsistence. This is held to be important in horticultural systems where women do much of the farm work (e.g., Boserup, 1970, p. 50; Goody, 1976, pp. 34, 129; cf. also Sanderson, 2001, p. 331). However, Bretschneider, 1995, pp. 177–179 finds little support for the concept of "wealth-increasing polygyny" (cf. White, 1988, pp. 549–550). Jacoby, 1995, p. 965 observes that while women in Cote d'Ivoire prefer wealthy men as spouses, they more specifically favor men on whose farms their (i.e. the women's) labor is more productive. In this scenario, male polygynists gain both in terms of production and reproduction.

¹⁴ Friedman, 1982 discusses evidence for the survival of Jewish bigamy in medieval Egypt.

¹⁵ Anabaptists: Cairncross, 1974, pp. 1–53; and cf. pp. 74–89 on the Christian monogamy-polygamy debate engendered by the Thirty Years War. Mormons: e.g., Kern, 1981, pp. 135–204; Foster, 1984, pp. 123–225; Van Wagoner, 1989. The church leadership renounced plural marriage in 1890 and more forcefully in 1904. For contemporary Mormon polygamy, see, e.g., Altman and Ginat, 1996.

Based on these observations, Satoshi Kanazawa and Mary Still hypothesize that the degree of resource inequality among men should have a positive effect on the incidence of polygyny.¹⁹ Furthermore, women's ability to choose a marriage partner is expected to increase the incidence of polygyny if men's resource inequality is high, and vice versa. In their view, "the extent of resource inequality among men and the level of women's power have a positive interaction effect on the level of polygyny in society" (Kanazawa and Still, 1999, p. 33). In this scenario, the spread of monogamy is a function of decreasing resource inequality among men. These assumptions are borne out by simulation models and successfully tested against indices of resource inequality and women's power in 127 modern countries. These data show that greater resource inequality significantly increases the incidence of polygyny and also indicate positive interaction effects of inequality and women's power on polygyny.²⁰ Economic development is found to be negatively correlated with polygyny, suggesting that male resource inequality diminished with economic development.

Whilst this argument has stood up well to preliminary criticism (Sanderson, 2001; MacDonald, 2001; with Kanazawa, 2001a,b), the apparent significance of "women's power" is hard to explain given that female choice cannot be limited to a prospective wife's own decision-making: if polygynous unions with resource-rich men are advantageous, a woman's kin can reasonably be expected to arrange a marriage pursuant to the same calculus of rational choice.²¹ This suggests that women's power per se ought to be irrelevant to observed outcomes. Moreover, a separate model by Eric Gould and associates maintains that the composition of resource inequality is as important as its overall level: their simulation indicates that while resource inequality based on non-labor income (such as control of land and physical capital) favors polygyny, the marriage market equilibrium becomes more monogamous if inequality is determined by disparities in labor income, which tends

to be a function of human capital (Gould, Moav, & Simhon, 2008). More importantly, however, neither one of these models is capable of accounting for the existence of SIUM.²² In principle, they would readily allow for a moderate degree of polygyny even in the most developed countries today, at the very least among the very wealthy. I conclude that female choice theory is necessary but insufficient to explain SIUM and that we need to take account of male choice to make sense of this institution.

7.2. Male choice

A "male choice" approach to polygynous polygamy and monogamy is likewise predicated on the observation that in the context of male resource inequality, polygyny tends to favor many women and disadvantage many men. This situation, in turn, is inherently conducive to inter-male conflict and competition and thereby impedes cooperation.²³ The negative effects of intra-group conflict and the benefits of cooperation supply an incentive for males to engage in bargaining in order to reduce polygyny and thus overall reproductive inequality within a given group. As Richard Alexander and associates put it, "the net effect of rules prescribing monogamy is almost certainly a significant depression in the variance of male reproductive success relative to that in stratified societies which do not prescribe monogamy" (Alexander, Hoogland, Howard, Noonan, & Sherman, 1979, p. 420). Since this form of compromise bargaining erodes the reproductive advantages customarily enjoyed by resource-rich elites, it is unlikely to occur in the absence of powerful incentives. The drive for competitiveness mediated by inter-group conflict has been identified as a plausible factor. All other things being equal, restrictions on polygynous polygamy (e.g., its limitation to bigamy) and even more so its prohibition in the context of SIUM can be expected to

¹⁹ Kanazawa and Still, 1999, pp. 32–35. Sellen and Hruschka, 2004 observe that the principle that "marital unions are more commonly and more highly polygynous when men differentially control access to material resources, particularly where those resources are valuable, renewable, and heritable" (707) *mutatis mutandis* also extends to foraging populations, with control of access to hunting and fishing sites serving as the critical variable.

²⁰ Kanazawa and Still, 1999, pp. 34–35 (simulations), 35–41 (empirical tests). By contrast, the evidence does not show a negative correlation between democracy and polygyny; cf. below.

²¹ Kanazawa, 2001a, pp. 338–340 defends the concept of female mate choice against the assumption that males made the decisions but does not consider female choice mediated by kin.

²² As already noted by Sanderson, 2001, p. 330. It makes little sense for Kanazawa and Still, 1999 to present their female choice model as an alternative what they call the "male compromise theory" of monogamy, described below under the rubric of "male choice" (i.e., men banning polygamy as an intra-group bargaining strategy), which ultimately seeks to account for normative monogamy rather than the relative incidence of monogamy and polygamy. In my view there is no direct conflict between these approaches: "male choice" theory is an auxiliary hypothesis that must be joined to "female choice" theory in order to explain the phenomenon of SIUM.

²³ For the correlation between sexual dimorphism (a proxy of polygyny, see above) and the intensity of male–male conflict in other species, see esp. Alexander et al., 1979; Mitani, Gros-Louis, & Richards, 1996; Weckerly, 1998.

reduce competition within the group and increase cohesion and cooperation and inter-group competitiveness.²⁴ In the most basic terms, reducing reproductive inequality is thought to promote collective action, which must be considered a vital element of successful state formation (e.g., [Blanton & Fargher, 2008](#)).

This hypothesis is susceptible to empirical testing. What we might call a “weak” version of this hypothesis—that monogamy is positively correlated with social cohesion and competitiveness that are in turn positively correlated with advances in development such as agrarianism and large-scale state formation—is partly borne out by the observation that polygamy is less common in agrarian societies than in other systems (see above, at n.9). At the same time, however, imperial state formation in particular can be shown to be associated with sometimes extreme levels of resource polygyny.²⁵ It would therefore be impossible to claim that monogamy is a necessary precondition of social up-scaling (cf. also [MacDonald, 1990](#), pp. 198, 204). A “strong” version of the hypothesis holds that although polygamy is insufficiently divisive to prevent up-scaling per se, it is nevertheless relatively less competitive than monogamy: in consequence, once SIUM has emerged, it is expected to out-compete polygynous systems for human and material assets. In Alexander’s view, the rise of stable large states (loosely if not entirely accurately labeled “nations”) is intimately linked to this institution: “It is almost as if no nation can become both quite large and quite unified except under socially imposed monogamy.”²⁶

Michael Price argues that this assumption is consistent with both historical and contemporary evidence. He represents the spread of SIUM from highly localized beginnings to a global phenomenon as a function of the expansion of European powers at the expense of other (non-SIUM) competitors and the eventual imitation of Western practices by other societies ([Price, 1999](#), pp. 33–45). In addition, he investigates the relationship between SIUM and state success by comparing contemporary monogamous and

polygynous societies with the help of standardized measures of cooperativeness. Using population size, use of the death penalty, democratization, corruption, and per-capita GDP as proxies, he shows that in a sample of 156 states, monogamous ones are more populous, less likely to use the death penalty, less authoritarian, less corrupt, and richer than polygynous ones ([Price, 1999](#), pp. 45–52; see also [Sanderson, 2001](#), p. 332).

This raises the question whether the success of SIUM-bearing societies is causally related to SIUM or whether SIUM is a coincidental and neutral side effect that has been transmitted alongside other features that were in fact responsible for Western dominance.²⁷ I believe that this question cannot be answered on the basis of the data that have been marshaled to date.²⁸ The notion that SIUM tends to be positively correlated with state success and human well-being is consistent with the observation that polygyny currently retards development in sub-Saharan Africa:²⁹ yet this does not show that development and competitiveness are necessarily predicated upon SIUM. The fact that the causes of the “rise of the West” continue to be fiercely contested in modern scholarship makes it seem a priori unlikely that it was causally tied to a single variable.³⁰ Ultimately, the proposed relationship between state success and SIUM may turn out to be inherently untestable or at the very least to require more sophisticated coding and multivariate regression analysis. The most we can say at this point is that inasmuch as SIUM is likely to foster cooperation and constrain conflict and inequality it is a plausible contributing factor to state success and general human development rather than merely a neutral

²⁴ [Alexander, 1987](#), p. 71. For a formal model in which polygyny is constrained by a ruler’s need to discourage rivals, see now [Lagerlöf, 2007](#). This scenario could easily be expanded to cover elites more generally.

²⁵ See esp. [Betzig, 1993](#); [Scheidel, 2009](#). [White & Burton, 1988](#) maintain that the incidence of warfare for plunder and capture of women is positively correlated with the incidence of polygyny, and [Bretschneider, 1995](#) finds that in the 186 societies of the Standard Cross-Cultural Sample polygyny is a positive correlate of successful inter-group warfare.

²⁶ [Alexander et al., 1979](#), pp. 432–433. In a somewhat different vein, cf. [Nielsen, 2004](#), p. 312 for the possibility of a connection between increasing freedom and SIUM. But cf. below, n.41.

²⁷ Emphasized by [Wilson, 1995](#), p. 37. Cf. also [Price, 1999](#), pp. 29–30, 55.

²⁸ None of the six reasons invoked by [Price, 1999](#), pp. 56–7 seem to me particularly compelling; however, detailed discussion of his unpublished arguments would be out of place here. It is also unwarranted to suppose (*ibid.* 44) that non-colonized countries eventually embraced SIUM not just “because they began recognizing Western economic and political dominance” but more specifically “in order to remain competitive with traditionally Christian nations.” Westernization entailed the adoption of whole bundles of European institutions and there is nothing to suggest that for these “late adopters” SIUM per se was—or was thought of as being—imbued with competitiveness-enhancing properties. Cf. however [Lagerlöf, 2007](#), p. 22 for the observation that according to his own model population growth endogenously reduces polygyny.

²⁹ See esp. [Tertilt, 2005](#) for a model predicting that banning polygyny in sub-Saharan Africa would reduce fertility and greatly increase savings and per capita output. Cf. also [Schoellman and Tertilt, 2006](#); [Tertilt, 2006](#).

³⁰ The same is necessarily true of the analogous argument by [Hartmann, 2004](#) that seeks to trace “Western” progress to the north-western European pattern of late marriage. Recent scholarship on the putative causes of the “rise of the West” is too rich to reference here even selectively.

feature. However, the burden of proof rests on anyone wishing to maintain that it was a necessary precondition or driving force.

Laura Betzig's version of "male choice/compromise theory" views effective monogamy as a fairly recent development brought about by the increased division of labor associated with industrialization which impelled bargaining processes between subordinates and dominants.³¹ Betzig's approach cannot be criticized for disregarding earlier instances of monogamy or even SIUM since she defines Greco–Roman, medieval, and early modern Europe as effectively polygynous.³² However, Betzig's emphasis on polygynous practices in earlier historical periods makes it difficult to posit any kind of critical break with the past: from this perspective, current conditions are merely the latest phase of ongoing cultural evolution. In a sense Betzig is both right and wrong: right about the slow rate of change and the severe limitations of historical forms of monogamy yet also mistaken in ignoring the potential impact of SIUM on actual behavior and in arbitrarily identifying a shift to more genuine monogamy in the recent past. What we are dealing with is a wide range of preferences and practices that leaves little room for a dichotomy of polygamy/polygyny and monogamy/monogyny but requires us to situate any given society along this spectrum and to ascertain what, if anything, it contributed to the overarching trend toward more effective monogyny.³³

8. Situating Greco–Roman monogamy

If polygyny is indeed a female response to significant male resource inequality, it is tempting to conjecture that the collapse of the palace system in Greece around 1200 BCE and the ensuing reduction of social complexity in Early Iron Age Greece (formerly known as the "Dark Age") facilitated a shift to SIUM.³⁴ More generally, this depression may have created the necessary preconditions for the rise of the *polis* as a form of socio-political organization predicated upon the relative weakness of rulers and elites and correspondingly strong notions of citizenship and popular participation. However, this

³¹ Betzig, 1986, pp. 103–106; 1993b. Note that her emphasis on recent economic development is consistent with the premise of Gould et al., 2008.

³² *Contra* Herlihy, 1995, p. 578; MacDonald, 1995, p. 4. Effective polygyny: Betzig, 1992a,b, 1995, 2002. Cf. also Price, 1999, pp. 18–22 for discussion.

³³ I therefore agree with Price that Betzig's approach elides the significance of SI(U)M, regardless of how effective it was in practice.

³⁴ It is unknown whether some form of resource polygyny was practiced in Minoan and/or Mycenaean culture. Other analogies to Near Eastern palace cultures might make this seem plausible.

superficially appealing conjecture may be hard to reconcile with the fact that what Ian Morris has called a "middling ideology" and egalitarian institutions (not to mention democracy) can be observed only after the formation of post-collapse aristocracies.³⁵ For instance, Susan Lape argues that in the case of Athens, it was only the Solonian reforms of the early sixth century BCE that defined the monogamous conjugal family as "the sole legitimate family form" by barring legitimate or legitimizable male procreation outside marriage. Her conclusions are so germane to the issue at hand that they merit extensive quotation: "By eliminating a man's bastard children from the family, Solon's laws made it less socially useful for a man to father bastards or to keep a concubine either in addition to or in place of a wife. In this way, the family laws...worked to inhibit a source of aristocratic power and prestige. While the family laws curbed a traditional vehicle of aristocratic self-fashioning, they also made available a new source of commonality and community for Athenian men."³⁶

More generally, the 'low-complexity' conjecture relies on some measure of continuity between conditions during the Early Iron Age and the later prominence of democratic Athens and notionally egalitarian Sparta where resource inequality among citizens at least at times appears to have been modest by historical standards and levels of cooperation and cohesion were—consequently?—high.³⁷ However, even allowing for low resource inequality around 1000 BCE, we would still need to explain why polygyny was not revived in the wake of subsequent economic growth.³⁸ This would require a dialectic model of development where inequality was both constrained and—inasmuch as it did grow—mediated by the imposition of equality-enhancing norms in other domains. In this scenario, a high degree of ecologically imposed monogamy in a post-collapse

³⁵ The most recent discussions include Hansen, 2006; Morris and Powell, 2006, pp. 72–92, 148–170; Raaflaub and Wallace, 2007; Hall, 2007, pp. 119–202.

³⁶ Lape, 2002/2003, pp. 119–120. See also *ibid.* 131: "Since the men most likely to father bastard children were those who could afford to do so, namely men with enough wealth to support multiple women and children, the family legislation articulates a class bias against the wealthy and aristocratic."

³⁷ E.g., Morris, 2000, pp. 138–144; 2004. However, resource inequality among Spartan citizens rose dramatically over time: Hodkinson, 2000 is the fullest account.

³⁸ It is also hard to account for the spread and intensification of SIUM in post-ancient Europe where inequality was often more pronounced than in ancient *poleis* and, indeed, steadily increased from the sixteenth to the nineteenth centuries: e.g., Hoffman, Jaks, Levin, & Lindert, 2002. Cf. already MacDonald, 2001, p. 346. These developments occurred *before* the growth of human capital turned it into a decisive variable: cf. above, on Gould et al., 2008.

environment might have crystallized into SIUM as quasi-egalitarian citizen communities took shape. Much depends on the actual character of the pre-*polis* and early *polis* environments and the role one wishes to accord to inter-male bargaining processes.

In any case, low levels of complexity are insufficient to account for this development, and so is city-state structure per se: there is no sign that either one of these by itself commonly led to SIUM.³⁹ While strict SIUM may only have arisen in city-states (Herlihy, 1995, p. 580), (pre-Christian) city-states did not habitually adopt SIUM.⁴⁰ Moreover, this model cannot account for SIUM in Rome, which was a city-state with popular assemblies and a high military participation ratio but less egalitarian than at least some Greek *poleis*. Greco-Roman SIUM is, however, consistent with the “male compromise” model—the notion that universally imposed monogamy mitigates sexual competition among men and thereby also diminishes the intensity and divisiveness of other forms of inter-male competition—in that Greek and Roman city-states were characterized by high levels of popular mobilization, especially in the military sphere. Then again, so were many stateless polygynous groups. The degree of political participation also fails to predict SIUM: although Alexander claims that SIUM tends to coincide with “the vote, representative government, elected (not hereditarily succeeding) officials, and universal education”—some of them significant elements of Greek and Roman state formation—, an empirical test of this proposition (drawing on contemporary states) consistently fails to show significant negative correlations between democracy and polygyny.⁴¹ A much narrower hypothesis—that republican micro-states (rather than tribes or chiefdoms or micro-monarchies) instrumentalized SIUM to boost cooperation, or that high levels of cooperation in republican micro-states promoted SIUM—would border on tautology as it would exclude most other (non-Christian) city-state cultures and thus merely re-state an empirical observation—about the co-existence of these features in Greece and Rome—in the guise of a theoretical prediction. This means that Kevin MacDonald’s skepticism regarding overarching theories of SIUM and his emphasis on “complex, historically conditioned outcomes” may well be justified (MacDonald, 1990, 1995, 2001).

³⁹ On the former, see, e.g., Chagnon, 1979; on the latter, see the motley collection of case studies in Hansen, 2000, 2002.

⁴⁰ Republicanism is also a weak correlate: if the historiographical tradition is correct, Rome and perhaps also other surrounding city-states were initially ruled by kings. Cf. below for the lack of correlation between democracy and monogamy today.

⁴¹ Alexander, 1987, p. 72, refuted by Kanazawa and Still, 1999, pp. 38–41.

We know much more about how Greco-Roman SIUM mediated, and was reconciled with, resource inequality. As I have argued in detail elsewhere, the institution of chattel slavery helped facilitate as well as mask effective polygyny in the context of SIUM (Scheidel, 2009, pp. 284–299, and see above, Section 5). It is therefore misleading to suggest that SIUM permitted “a paradoxical combination of principles, sexual equality and social inequality.”⁴² Instead, SIUM coupled with chattel slavery served to maintain strict (serial) monogamy—ensuring access to legitimate wives for low-resource men and preserving an appearance of sexual equality that chimed with concurrent ideals of judicial and sometimes political equality—whilst simultaneously enabling the translation of resource inequality into effective polygyny, i.e. sexual inequality. It is only in a closed population with a balanced sex ratio that these features could not possibly be reconciled: Greeks and Romans solved this problem by importing disfranchised women from outside their own in-groups. This shows that the simple zero-sum model of “female choice” outlined above only applies in the absence of exogenous inputs.⁴³ For SIUM to co-exist with effective resource polygyny, it was essential for slaves to be demographic outsiders (rather than marginalized group members), which was almost always the case in Greece and Rome (unlike in some polygamous societies).⁴⁴ In keeping with “male compromise theory,” this arrangement was likely to foster cohesion within the ruling group or later even within the Roman empire as a whole (inasmuch as slaves hailed from beyond the borders). Chattel slavery has long been regarded as a potent means of fostering personal freedom and civic equality in both Greece and Rome, an interpretation that ties in with Joseph Miller’s emphasis on slavery’s role as a mechanism for the mobilization of external resources that designed to avoid tensions and conflict within a given in-group.⁴⁵ In this environment, Greek and Roman male

⁴² Thus Herlihy, 1995, p. 581. He means “sexual equality” among male citizens.

⁴³ However, one might also envision an alternative model where resource and reproductive inequalities foster cooperation by encouraging inter-group aggression for the purpose of obtaining either captive women or resources that could be used to obtain women. In this scenario, inequality could have served as an endogenous engine of cooperation. Cf. White and Burton, 1988 for the motives of warfare in polygynous settings.

⁴⁴ Cf. Patterson, 1982, pp. 105–131 for global variation in the provenance of slaves.

⁴⁵ Finley, 1981, pp. 165–166; 1998, pp. 157–158 (with Morris, 2001, pp. 29–41); Patterson, 1991, pp. 64–81; Miller, 2008. In Sparta, access to helot women may have sustained effective polygyny among male citizens: Scheidel, 2009, pp. 293–294.

citizens may have experienced resource inequality but could reasonably hope to marry and were formally differentiated from a servile underclass: whatever its origins, Greco–Roman SIUM was highly consistent with the prevailing desire to reconcile economic inequality with more egalitarian ideals and the dominance of male citizens that was sustained by constraints on female mate choice (by outlawing polygamy) and the exploitation of enslaved outsiders.

Greek and Roman marital and mating practices were unusual and conventional at the same time: unusual thanks to the observance of SIUM and conventional in the pursuit of resource polygyny. It seems moot to speculate whether the success of these cultures may have been linked to SIUM: as long as we are unable to answer this question regarding contemporary societies it is surely fruitless to ask it about the much more distant past. SIUM might well have been of relevance in so far as it contributed to historically high levels of cooperation and popular mobilization. At the same time, it would be unwarranted to exaggerate the extent of Greco–Roman exceptionalism: while married men's concubinage with free women may have been marginalized because of its logical incompatibility with SIUM, recourse to slave concubines and casual sex partners mitigated socially imposed sexual and reproductive egalitarianism for elites and helped to reconcile formal monogamy with effective resource polygyny. I conclude that Greece and Rome occupied an intermediate position on the spectrum between overt polygamy (in the sub-Saharan African mode) and the more effective regimes of serial monogamy and monogyny of the present.

The true historical significance of Greco–Roman SIUM lies in its impact on the Christian tradition which shaped the European societies that eventually attained global dominance. The current (Catholic but generally representative) position that polygamy “is contrary to the equal personal dignity of men and women who in matrimony give themselves with a love that is total and therefore unique and exclusive” betrays modern sensibilities and does not appear to be directly derived from earliest Christian doctrine (*Catholic Catechism* 2387). The canonical Gospel tradition merely implies Jesus' rejection of non-monogamous practices, whereas Pauline doctrine does not address this issue at all (Brewer, 2000, pp. 89–100, 104). In the early fifth century CE Augustine called monogamy a “Roman custom” (*De bono coniugali* [“On the Good of Marriage”] 7). Pauline Christianity may well have been monogamous simply because it evolved and expanded in a Greco–Roman context and not because of anything that was specific to this movement, let alone its latently polygamous Jewish

background.⁴⁶ In so far as the Christian church(es) preserved SIUM as a Greco–Roman norm and the more autonomous medieval ecclesiastical leadership was a driving force behind the gradual reinforcement of SIUM and cognate practices, Greco–Roman emphasis on SIUM deserves pride of place in a world history of monogamy that has yet to be written.⁴⁷

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⁴⁶ Schremer, 1997/2001 and Satlow, 2001, pp. 189–192 discuss the evidence for Jewish polygyny in the New Testament period and the Rabbinic tradition. In 393 CE a Roman law explicitly forbade Jews to contract plural marriages (*Justinianic Code* 1.9.7).

⁴⁷ The neglect of this phenomenon by historians is astounding in its pervasiveness: there are now more recent book-length studies of incest in various historical societies (e.g., Archibald, 2001; Héritier, 2002; Moreau, 2002; Van Gelder, 2005) than of monogamy and polygamy prior to the onset of Mormonism. I hope to address this deficit in a future monograph.

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