Of revenue without rulers: Public goods in the egalitarian cities of the Indus civilization

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Conflict of interest statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest

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I wrote this article in its entirety.

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Abstract

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The archaeology of collective action addresses a widespread myth about the past–that premodern societies were despotic, and only produced public goods when everyday people convinced a separate and distinct ruling class to provide them. Archaeological evidence from the Indus civilization (~2600-1900 BC), home to the first cities in South Asia, reveals that Indus cities engaged in a remarkably egalitarian form of governance to coordinate different social groups, mobilize labor, and engage in collective action, thus producing a wide range of public goods. These public goods included, but were not limited to, water infrastructure, large public buildings, and urban planning–all of which helped Indus cities invent new technologies, grow, and thrive. Many intersecting institutions contributed to Indus governance, including civic bureaucracies that gathered the revenue necessary to mobilize labor in pursuit of collective aims, as well as guild-like organizations that coordinated the activities of numerous everyday communities and ensured the equitable distribution of information within Indus cities. A wide range of large and small public buildings, information technologies, and protocols for standardized craft production and construction attest to this egalitarian governance. Through these institutions, Indus governance incorporated the "voice" of everyday people, a feature of what Blanton and colleagues have described as good governance in the past, in absence of an elite class who could be meaningfully conceptualized as rulers.

Contribution to the field

This manuscript aims to advance collective action theory by highlighting the emergence of public goods in absence of political elites. It also advances comparative archaeology by further integrating data from the Indus civilization into broader debates, and South Asian archaeology by presenting a new argument about an old dataset.

Ethics statements

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Introduction

Political theorists often assume that the benefits of governance only accrue to people who sacrifice their political and economic power to a permanent ruling class. This assumption can lead the people of otherwise democratic societies to tolerate political strategies that turn leaders into autocrats and shut everyday people out of the political process. This is a "tripwire" that is well-known to political scientists (Waldner & Lust 2018) and has also been addressed by archaeologists interested in the diversity of human political systems (Blanton *et al.* 2021). Despite the efforts of these researchers, however, it remains a pervasive myth that many transformative features of human economies come about only through the canny largess of political-economic elites.

Archaeological evidence from the Indus civilization (~2600-1900 BC), home to the first cities in South Asia, reveals that public goods emerged long before a ruling class. Indus cities supported a sophisticated Bronze Age political economy, where growth was driven by diverse groups of people who practiced different economic specializations, including intensified agropastoralism and craft production (e.g. Kenoyer 1997a, Vidale 2000; Meadow & Patel 2003; Madella & Fuller 2006; Wright 2010; Pokharia *et al.* 2014; Ratnagar 2016; Petrie & Bates 2017). It would be naïve to assume that the interests of these communities were always aligned. It is not hard to imagine herders negotiating for better access to land, artisans disagreeing over how many ornaments to make, or farmers debating a planting sequence that distributes the demand for harvest labor. And yet, considering the range of potential conflicts that could have atomized them, Indus communities nonetheless adopted forms of governance that allowed them to accomplish extraordinary feats of social coordination, standardizing construction techniques and planning urban development, assembling and maintaining drainage systems, constructing massive city infrastructures that required the labor of thousands and creating systems of information that extended from the foothills of the Himalaya to the Arabian Sea.

47   The archaeology of the Indus civilization therefore challenges the widely-held myth that public
48 goods–those that benefit everyone who invests labor in their production as well as many who do not–must
49 be provisioned by rulers who are forced to accommodate citizen demand. Debate surrounding this
50 assumption has long shaped the interdisciplinary study of collective action and public goods (e.g. Olson
51 1965; Levi 1988; Ostrom 1990; North 1990). Evidence from the past in fact reveals that there are many
52 pathways to collective action (Blanton & Fargher 2008; Carballo 2013; Feinman & Carballo 2018),
53 reinforcing Ostrom's (1990) critique of the conventional argument that societies only produce public
54 goods when everyday people place pressure on the elite (e.g. Levi 1988). People have in fact engaged in
55 collective action, often at very large scales, in societies where there are no elites to speak off. With access
56 to data from many such premodern societies, archaeologists are particularly well-positioned to address the
57 origins of public goods. Often, the publicness and privateness of goods can be inferred from the material
58 constraints to their use. The high accessibility of public goods contrasts with the restricted accessibility of
59 private goods, those that were constrained to a subset of people. Given that the people of the Indus built
60 their cities in absence of all but trivial inequality (Green 2021), it is worth asking: how did they
61 coordinate governance beyond households? How did everyday people make and implement political
62 decisions that resulted in forms of collective action that traditional political theories hold must be imposed
63 from above? In this article, I argue that civic deliberation and bureaucracy, as well as guild-like
64 organizations, were prominent features of Indus governance, incorporating significant proportions of
65 urban populations into collective decision making and implementation, allowing them to engage in
66 collective action without investing political authority within a fixed social stratum. The result was "good
67 governance," that which responded to the needs of everyday people (sensu Blanton *et al.* 2021), over
68 much of the Indus civilization's urban development.
69

What is evidence for good governance in the ancient past?

71
72 Governance is the way that a society directs its collective affairs. Across disciplines, many theorists hold
73 that governance is produced by the institutions that emerge from and cross-cut social groups, creating
74 rules, norms and practices that shape a society's distribution of power and resources (e.g. Olson 1965;
75 North 1990; Ostrom 2000; Levi-Faur 2012; Bondarenko *et al.* 2020). Research on governance is often
76 biased toward contemporary or recent historical social contexts, however governance is a human
77 universal. It takes place within households and between nations. Different forms of governance produce
78 drastically different societies. When governance admits only a small number of people into decision-
79 making, it tends to constrain the benefits collective action toward a small minority, a vicious cycle that is
80 enabled by and creates predatory and extractive social institutions (Acemoglu & Robinson 2013). By
81 contrast, "good governance," a concept that began as the stated goal of international development, now
82 describes institutional arrangements that produce public goods, such as civic infrastructure, sanitation,
83 transportation, and other things considered essential for economic prosperity (Rothstein 2012). This
84 duality, as well as they key role governance plays in generating and dispersing political and economic
85 benefits–makes collective action theory a key tool for investigating it.
86   Collective action theory is concerned with identifying the conditions under which people
87 coordinate their labor to solve common problems. Public goods often involve substantial labor
88 investment, so making them tends to require collective action. However, collective action is often
89 implemented from the "top-down" by people who command considerable control of a society's political
90 and economic resources, such as the agents of a state administration. There is therefore significant debate
91 about what kinds of agents and institutions are most likely achieve collective action within collective
92 action theory. Some theorists have focused on how "predatory" leaders muster revenues for collective
93 action (e.g. Levi 1988), while others argue that sustainable collective action is the produce of institutional
94 arrangements that draw upon knowledge and action at appropriate social scales (e.g. Ostrom 2010). The
95 latter theory builds on the observation that public goods emerge through coordination between a diverse

96   range of intermediate and local institutions that often have non-hierarchical relationships to one another
97   and to the broader "state" (Ostrom 1990). In other words, good governance can emerge through
98   interactions enacted from the "top-down," or through interactions from the "bottom-up" (Rothstein 2009;
99   2012). What seems to be essential is *wide participation* in the institution-formation process. Societies are
100 most likely to produce public goods when governance is inclusive, incorporating many everyday people
101 into directing collective affairs (e.g. Dahl 1989; Ostrom 1990, 45).
102   Evidence from the past reinforces these insights and offers a wide comparative frame that draws
103 on archaeology to more fully addressing variation in political forms (e.g. Blanton *et al.* 1996; Blanton
104 1998; Blanton & Fargher 2008; Blanton 2010; Carballo 2013; DeMarrais & Earle 2017; Feinman 2018;
105 Blanton *et al.* 2020; 2021). Initially, collective action theory helped advance critiques of neo-evolutionary
106 theory within the discipline of archaeology, contrasting the impact of corporate political strategies–those
107 that incorporated commoners in governance–from network political strategies that excluded commoners
108 and forged connections between elites (Blanton *et al.* 1996). As archaeological debate proceeded, it
109 became apparent that the evolutionary distinction between "commoner" and "elite" was not always useful
110 to understanding past social changes (Blanton 1998). Collective action theory offered an alternative
111 framework, revealing a political variable that had gone understudied in past societies, even though it was
112 clearly responsible for explaining many phenomena that were central to neo-evolutionary theory (Blanton
113 & Fargher 2008). Strong indicators of collective action included public goods–things like transportation
114 and water management infrastructures–but redistributive economies, equitable taxation, institutional
115 accountability, and bureaucratization (Blanton & Fargher 2008, 133–248). These phenomena were not
116 mutually exclusive and have been used to characterize the degree of collectivity apparent in past societies
117 (Feinman 2018; Feinman & Carballo 2018). This reframing has led to several important insights. For
118 example, it is clear that one of the long-term patterns that has emerged over the millennia has been steady
119 increases in different human societies' capacity for collective action (Carballo 2013). Another insight is
120 that collective societies–those characterized by corporate political strategies–appear to have been more
121 dependent on "internal" sources of revenue like agrarian taxation, while less collective societies appear to
122 be those more dependent on exclusionary political strategies that focused on "external" resources
123 (Blanton & Fargher 2008; Feinman 2018; Feinman & Carballo 2018). Past societies that draw on internal
124 revenues to engage in collective action are more likely to produce public goods and can be predicted to
125 have developed institutions that enable wide participation and accountability in the political process
126 (Blanton *et al.* 2021).
127   But what kinds of institutional arrangements create good governance? A focus on institutions is
128 adaptable to evidence from the past because it eliminates the need to assume that a past institution was
129 public, private, market or state based. An institutional approach thereby helps archaeologists compare
130 different kinds of integrative, cross-cutting institutions that facilitated the mobilization of labor in the past
131 without imposing assumptions from the present (Holland-Lulewicz *et al.* 2020; Bondarenko *et al.* 2020).
132 Traditionally, archaeologists have theorized that such institutional arrangements were limited to "states,"
133 a social type used by neo-evolutionary theorists to describe a combination of extractive social classes and
134 predatory institutions thought to emerge alongside one another: institutions like militaries, big and
135 impersonal administrations, and long-distance exchange networks (e.g. Childe 1950; Weber 1978;
136 Flannery 1972; Service 1975; Wright & Johnson 1975). This definition of the state has been subject to
137 decades of critique by archaeologists, who must square it with evidence that different features commonly
138 associated with the state materialized in different social contexts at different times for different reasons
139 (e.g. Yoffee 2005; Pauketat 2007; Jennings 2016). Archaeologists now take pains to document the
140 different ways features of the neo-evolutionary state have been combined in the past (e.g. Wright 2002;
141 McIntosh 2005; Smith 2009; Feinman 2013; Jennings 2016). One recurring insight is that many of the
142 political interactions between the political institutions within "states" were often "heterarchical," or
143 unranked, institutions (sensu Crumley 1995). This is not to say that political hierarchies were precluded
144 by heterarchical institutional arrangements, or that all political interactions were horizontally distributed.
145 Rather, heterarchical arrangements require archaeologists to think more broadly about political
146 organization. Like all complex systems, premodern societies often incorporated many intersecting

147 institutions that were not always ranked or could be ranked in different ways. This flexibility probably
148 made some premodern societies more sustainable in the past (e.g. Scarborough 2009). Good governance
149 is not necessarily more heterarchical, but heterarchical institutional arrangements could certainly have
150 played a role in inclusive political decision-making and collective action in the past.
151   There have been many surprising instances of increases in political and economic scale that
152 unfolded without incurring more than trivial inequalities. Egalitarianism has therefore appeared in many
153 large-scale premodern societies that would have surprised neo-evolutionary theorists. This claim was
154 foreshadowed by Blanton (1998, 151), who argued that some early states employed egalitarian political
155 strategies. Egalitarian here does not mean perfect equality in all spheres of life, but rather a prevalence of
156 firm limits on exclusionary political power. Building on these points, I reiterate that elites or ruling
157 classes are not prerequisites to collective action or the production of public goods, but epiphenomena
158 associated with a restricted range of political-economic trajectories. Thus, rather than search for elite
159 agency to explain past social transformations, like the emergence of public goods, it is often more fruitful
160 to investigate the range of political arrangements people have made to engage in collective action
161 (Carballo 2013), examine connections between collective action and political economy (DeMarrais &
162 Earle 2017), and explore articulations between collective action and other indicators of governance
163 (Feinman & Carballo 2018). Governance activities in many past societies were often dispersed, and
164 emerged from the bottom-up (Thurston & Fernandez-Gotz 2021). In fact, I would add that by distributing
165 political and economic benefits among everyday communities, good governance can further be predicted
166 to contradict the expectations of neo-evolutionary theories of state formation by producing egalitarianism
167 in societies with coordinated governance and large-scale collective action. After all, if inequality and
168 government always increase together, then there would really be no such thing as good governance.
169   One advantage of this theoretical frame is that it can be used to make a range of predictions
170 regarding how good governance materialized in the past. In addition to reconstructing evidence of public
171 goods from past societies, I would suggest that good governance can be inferred from deliberative spaces
172 that help incorporate everyday people into political decision-making processes. There are other
173 archaeological indicators of governance as well. Blanton and Fargher (2008) argued that collective action
174 in the past is associated with a process called "bureaucratization." This concept of bureaucratization
175 diverges from Max Weber's (1978) evolutionary type, which holds that bureaucracy replaced tradition-
176 based systems of administration only in the nineteenth century AD due to rising capitalism.
177 Bureaucratization, rather, can be conceptualized as the expanded implementation of governance into new
178 spheres of a political economy by specialists working on behalf of institutions that crosscut different
179 social groups–what Blanton and Fargher (2008:166) call "government by office." An indicator of
180 bureaucratization is therefore the construction of institutional spaces set aside to facilitate the
181 implementation of coordinated governance and collective action. Thus, good governance is associated
182 both with the creation of deliberative spaces for accommodating citizen voice, and with "offices," spaces
183 that help specialists coordinate the activities of multiple social groups by facilitated activities like
184 planning, organization, monitoring, and execution.
185   The initial formation of cities represents a profound challenge for good governance. Urban life is
186 defined by regular interactions amongst strangers (e.g. Jacobs 1961). The defining trait of many of the
187 world's first cities were population aggregation that required novel forms of political and economic
188 organization (e.g. Smith 2003; Birch 2014; Jennings 2016; Gyucha 2019), as well as unprecedented
189 technological innovation and economic growth (e.g. Ortman & Lobo 2020; Green *et al.* forthcoming),
190 especially in their initial periods. Initial urban governance is demanding because urban communities faced
191 a wider range of social and economic conditions than their pre-urban predecessors, all of whom needed
192 public goods to prosper (e.g. Childe 1950; Fletcher 1995; Sherratt 1995; Wright 2002; Smith 2003;
193 Cowgill 2004; Feinman 2011; Ortman *et al.* 2016; Bettencourt *et al.* 2007; Smith 2019). The demand for
194 technologies that enable exchange amongst strangers–itself a public good–is closely associated with
195 changes in governance. Urban communities needed new tools to effectively keep track of credits and
196 debts amongst strangers. The tools and techniques employed to materialize and represent information, or
197 a society's "means of specification" (Green 2020), can be distributed in different ways, and have major

198 implications for governance. In egalitarian urban societies, we find the means of specification distributed
199 amongst everyday households, while in stratified societies with predatory institutions, these same
200 technologies were monopolized to create extractive forms of interest-bearing debt (Green 2020).
201 Likewise, collectivity produced a more widely distributed form of collective computation, while
202 authoritarianism limits the flow of information (e.g. Feinman & Carballo 2022).
203

What is the evidence for governance in the Indus civilization?

204
205
206   One of the world's first great urbanizations produced the Indus civilization, whose settlements
207 emerged over an extensive area that extends from the Himalaya to the Arabian Sea (Fig. 1). The
208 geographical extent of the Indus civilization eclipsed that of its contemporary societies in Mesopotamia
209 and Egypt (Possehl 1999). People built Indus settlements within a wide range of environments, from the
210 semi-arid coasts of Gujarat to the well-watered plains of northwest India. Life in these contrasting regions
211 required a flexible and diversified agropastoral economy that responded to a wide variety of local
212 contexts (e.g. Weber 1999; Madella & Fuller 2006; Wright 2010; Chase 2010; Petrie *et al.* 2016; Petrie &
213 Bates 2017; Bates *et al.* 2017). Five Indus settlements are often identified as cities due to their size,
214 sophisticated Bronze Age technologies, numerous houses, and range of different kinds of structures. Four
215 of these sites, Harappa, Mohenjo-daro, Rakhigarhi and Dholavira, have been subject to extensive
216 excavations (see Lahiri 2005; Wright 2010; Petrie 2013a; Ratnagar 2016; Green 2021). Archaeological
217 surveys have also produced substantial data pertaining to the spatial organization of the smaller sites
218 immediately surrounding Harappa (Wright *et al.* 2003; 2005) and Rakhigarhi (Singh *et al.* 2010; 2011;
219 2018; in press; Green & Petrie 2018; Singh *et al.* 2019). Establishing the maximum extent of these sites is
220 a matter of ongoing debate, as there are many formation processes that impact area estimates. However, it
221 is clear that Indus cities were more extensive than the pre-urban settlements that emerged before them in
222 the same region. The extent of many of these pre-urban settlements cannot be established due to the
223 overlying remains of settlements that date to the urban phase. However, at Harappa (e.g. Meadow &
224 Kenoyer 2005) and Rakhigarhi (e.g. Nath 1998; 1999; 2001), pre-urban material culture is reported from
225 only around a quarter of the total site area. Moreover, settlements that were abandoned prior to
226 urbanization tended to be relatively small. Kot Diji, a type-site of the pre-urban phase, appears to have
227 extended over less than three hectares (Khan 1965). Most scholars would agree that the most densely built
228 part of each Indus city encompassed a core area that (often greatly) exceeded 50 hectares. Much of this
229 settlement area was dedicated to houses–domestic residential structures that incorporated courtyards,
230 wells, hearths, and sometimes specialized craft production areas (Sarcina 1979; Cork 2011; Green 2018).
231 The growth of Indus cities coincides with substantial evidence for changes in governance.
232   Indus governance can be inferred from different categories of archaeological evidence. For
233 example, substantial brick walls and platforms provide direct evidence of collective action, an outcome of
234 governance, because there would have been no way for a single household or social group to mobilize
235 sufficient labor on its own. Other forms of evidence are less direct. A hypothetical ledger detailing labor
236 obligations may record actual accumulations of past revenue *or* the aspirations of a presumptive
237 government whose desire for revenue was greater that its capacity to gather it (e.g. Richardson 2012).
238 Rules and protocols that crosscut social groups, and the institutions that form them, are perhaps the most
239 basic indicator of governance. However, unless such rules are written down, they do not leave direct
240 material evidence. At the same time, the repeated adherence to a standard of production can indirectly
241 attest to shared rules and protocols. And indeed, standardization has long been recognized as a basic
242 concept for the analysis of archaeological datasets (e.g. Rice 1991; Eerkens & Bettinger 2001; Roux
243 2003). The production of standardized artifacts is often taken as evidence that they were produced by a
244 group of specialists to meet the demands of a larger population of users. However, multiple groups of
245 specialists also often adhere to common standards, a pattern that we can use to infer governance of
246 production, especially when it cooccurs with evidence of collective action.

247   Indus cities are recognizably "Indus" because the people who lived in them produced a shared
248   material culture. Indus assemblages include a wide range of shared ornament types, pottery styles, bronze
249   metallurgy, and stamp seals–technologies that have been subject to considerable study (Wright 1991;
250   1993; Kenoyer 1992; 1997a; Vidale 2000; Vidale & Miller 2000; Menon 2008; Agrawal 2009). While
251   assemblages from Indus cities tend to receive the most attention, they actually represent only a small
252   subset of the settlements that contributed to the Indus civilization's material culture (Fairservis 1989;
253   Wright 2010; Sinopoli 2015; Parikh & Petrie 2019). Extensive archaeological surveys have uncovered
254   hundreds of small archaeological mounds across a very wide area (e.g. Singh 1981; Joshi *et al.* 1984;
255   Possehl 1999; Wright *et al.* 2003; 2005; Kumar 2009; Rajesh SV 2011; Pawar 2012; Chakrabarti 2014;
256   Dangi 2018; Green & Petrie 2018; Green *et al.* 2019). Indus cities therefore did not hold a monopoly on
257   these technologies, which were widely distributed across the civilization's extent, and employed
258   alongside many local forms of craft production (Possehl & Herman 1990; Meadow & Kenoyer 1997;
259   Wright 2010; Chase *et al.* 2014; Parikh & Petrie 2016; Patel 2017; Petrie *et al.* 2018). Many of the pottery
260   and ornament styles that have been found in urban contexts have also been identified at these smaller
261   settlements, which were, in some cases, dozens of kilometers from the nearest urban center (Wright *et al.*
262   2003; 2005), a characteristic that Parikh and Petrie (2019) have characterized as "rural complexity."
263   Governance is evident in the shared styles that permeated the production of many different Indus
264   crafts. Indus artisans made a lot of different kinds of things, from elaborate stone pillars to tiny steatite
265   microbeads (Wright 1991; Kenoyer 1997a; Vidale 2000; Miller 2007a). Though these crafts were
266   produced by multiple groups of artisans, many common standards patterned their production–shared ideas
267   and practices about how to make things, regardless of material (Miller 2007b; Wright 2010). For example,
268   Indus artisans often incorporated the same materials into different technologies, many of which had to be
269   acquired from locations far from the point of production (Lahiri 1990; Kenoyer 1997a; Ratnagar 2003).
270   While the use of exotic materials in urban contexts is not particularly remarkable, it is striking that Indus
271   artisans did not use all of the different sources of raw materials accessible within their civilization's broad
272   extent. Artisans preferred–or were perhaps even constrained to–a limited number of specific sources of
273   stone, like steatite, even when local materials were more readily available (e.g. Law 2006; 2011).
274   Likewise, shared protocols for production patterned different crafts, resulting in a range of cross-craft
275   "technological styles" (Lechtman 1977; sensu Wright 1993). For example, Indus assemblages were
276   marked by considerable "technological virtuosity," or crafts that incorporated very high levels of skill,
277   knowledge, and labor and invested these into small things, like portable beads and ornaments (Vidale &
278   Miller 2000). Likewise, a "talc-faience industrial complex" is evident across different crafts, a common
279   set of materials and techniques used produce exceptionally large quantities of artificial ornaments, such
280   steatite beads, and faience bangles, which were widely distributed amongst everyday people (Miller
281   2007a). Indus artisans also shared a proclivity for radically transforming raw materials, such as steatite
282   and carnelian, into new forms, and creating entirely artificial materials like stoneware or faience. Wright
283   (2010) has called this technological style a "transformative mindset." Though many different groups
284   engaged in craft production, the technological styles that linked these groups reveals substantial
285   integration and suggests a degree of coordination among artisans that indirectly attests to a particular form
286   of governance.
287   Indus seals (Fig. 2) are a hallmark category of artifacts from the Indus civilization's urban phase
288   (Mackay 1931; Rissman 1989; Parpola 1994; Franke-Vogt 1991; Kenoyer & Meadow 2010; Law 2006;
289   Kenoyer 2007; Green 2016; Jamison 2018). These small stone stamps had intaglio engravings that could
290   be impressed into clay sealings on containers and doors, materializing information that could serve as a
291   kind of record of socio-economic interactions, a practice that is attested across Eurasia beginning in the
292   Neolithic (e.g. Jarrige *et al.* 1995; Akkermans & Duistermaat 1996; Pittman 1995). The production of
293   Indus seals, themselves quite intricate, required high levels of skill and complex production sequences.
294   They epitomized Indus technological virtuosity as well as adherence to common standards, with a range
295   of standardized forms and images that were engraved on seal after seal (Rissman 1989; Ameri 2013;
296   Frenez 2018). Most Indus seal carvings depict an animal along with an inscription in an undeciphered
297   script (e.g. Mackay 1931). It has long been argued that such motifs served the emblems of different social

298 groups, while the script records the name of a particular seal user (Fairservis 1982; Kenoyer 2000; Vidale
299 2005; Frenez & Vidale 2012; Frenez 2018). Regional variation in the prevalence of particular seal motifs
300 in an assemblage (e.g. Ameri 2013; Petrie *et al.* 2018) suggest that different kinds of social groups–rural
301 and urban–used seals to make sealings. And yet, the vast number of people who used Indus seals relied on
302 a remarkably standardized tool–a square stamp approximately 2.5cm on each side with a restricted range
303 of motifs–to specify things (Green 2015; 2020).
304   Stone weights are also a prominent component of Indus assemblages (Miller 2013). They formed
305 a system a measurement which would not have worked unless the weights were highly standardized,
306 incorporating weights that ranged from less than 1g to well over 10kg (Fig. 3). Indus weights were made
307 from a wider range of harder stones than seals, which nonetheless had to be sourced from the highlands
308 surrounding the Indus civilization (Law 2011). Many classic examples of Indus weights were cut from
309 chert from the Rohri Hills proximal to Sindh (Kenoyer 2010). Indus weights have been recovered in rural
310 as well as urban sites, suggesting that a single authority operated throughout the Indus civilization. The
311 spatial extent of the weight system has even been cited as evidence in proposals that the Indus civilization
312 was an empire (e.g. Ratnagar 2016), though it should again be noted that the Indus civilization lacks
313 convincing evidence of an emperor (Green 2021). Moreover, in contrast with the weight systems of the
314 Indus civilization's contemporary societies in Mesopotamia–which do provide clear evidence of a ruling
315 class–Indus weights were unmarked, suggesting that they comprised a single system that did not compete
316 with any others across the Indus civilization's vast extent (Rahmstorf 2020). Thus, in the Indus, it appears
317 to have been unnecessary for weight users to specify which weight system they were employing. Indus
318 weights were *the only* weights in many of the contexts in which they were used, suggesting very high
319 levels of coordination amongst the artisans who created the weights.
320   A closer look at the architectural matrix of Indus cities reveals the degree to which common
321 standards contributed to the growth of Indus settlements. While some Indus settlements were made of
322 stone, the majority were comprised structures assembled from thousands of mud or baked bricks. These
323 bricks had to be produced outside of the settlements themselves, mined from favorable sediments,
324 tempered, shaped, left to dry, and then sometimes fired in massive kilns. In describing the bricks of
325 Mound F at Harappa, Madho Sarap Vats (1940:21) writes:

326   *Like all other buildings of the various strata, this amazing complex is composed of*
327   *well burnt bricks of fine texture which are laid throughout in good tenacious mud. The*
328   *bricks measure 11 by 5 ½ by 2 ½ by 3 in., of which the chief interest lies in the*
329   *scientific proportion of two widths to the length–a size of which makes for good*
330   *structural bonding.*

331 The bricks at Mohenjo-daro adhere to the same ratio. Mackay (1931: 265) noted that comparable
332 brickmaking techniques did not appear in Mesopotamia until nearly a thousand years after their debut in
333 South Asia. The high quality and scale of Indus brick assemblages is clear evidence of mass production,
334 which would have required substantial coordination among a large number of brick producers. Adherence
335 to common standards made it possible for Indus builders to employ header-stretcher masonry techniques,
336 and create durable joints, tidy corners, and sharp lines (Fig. 4). Bricks could also be subdivided to create a
337 range of different kinds of platforms, staircases, vents, and other structural features. Common standards
338 also made it easier to create wedge-shaped variants that interlocked with other bricks and were essential
339 for the construction of waterproof wells (Jansen 1993a; Wright 2010). The high quality of Indus brick
340 masonry is one of the reasons so much of Mohenjo-daro's architecture remain standing to be studied by
341 archaeologists today (e.g. Jansen 1993a; Rizvi *et al.* In Press).
342   The production activities considered thus far involved the coordination of labor from many
343 different households (e.g. Wright 1991). Guild-like organizations, which have been inferred from
344 evidence of technological virtuosity and decentralized production, likely contributed to the coordination
345 of different groups of artisans (e.g. Wright 2010, 327). Such organizations would have comprised an
346 integrating institution capable of producing, reproducing, consolidating, mobilizing, and preserving the

347   knowledge and skill necessary to engage in different production activities. A similar model of Indus craft
348   organization was first suggested by Rissman (1989), who posited that the restricted range of seal motifs
349   found at different Indus cities revealed that multiple workshops operated independently of specific
350   locations of production. This model holds that production activities were undertaken by multiple
351   specialist groups who accumulated resources for the production and reproduction of the craft apart from
352   households, while also standardizing production practices. Groups of artisans specialized in different
353   techniques and shared their skills with one another, applying knowledge gained from the production of
354   one kind of craft to a range of different materials (Miller 2007a; 2007b). The result was a wide range of
355   highly standardized craft objects produced in very large numbers by many different groups of artisans. In
356   nearly every study of the spatial distribution of finished craft objects in Indus settlements (e.g. Vidale &
357   Balista 1988; Miller 2000; Wright *et al.* 2003; 2005), they are most often found everyday households–
358   they were not meaningfully restricted. Interactions among guild-like organizations may help explain how
359   different technological styles emerged heterarchically or from the bottom-up.
360   Collective action leaves a robust material footprint. Detecting archaeological evidence of
361   collective action is straightforward–the archaeological record is full of big things that simply could not
362   have been built without the labor of many people. Prominent examples include the temple complexes at
363   Teotihuacán (e.g. Cowgill 2015), the monumental platforms in the early settlements along the Andes
364   coast (Pozorski & Pozorski 2018), Pepys' pyramid in ancient Egypt (Wenke 2009) and the Temple Oval
365   at Khafajah in Mesopotamia (Delougaz 1940). Large non-residential structures were also built in the
366   Indus, providing direct evidence for collective action (e.g. Smith 2016; Wright 2016). Archaeologists
367   have identified many examples of such buildings, along with large-scale investments in infrastructure in
368   Indus settlements (Wright 2010). Examples include the massive structures of the Western Mound at
369   Mohenjo-daro, such as the Great Bath, and the erroneously named "Stupa" at Mohenjo-daro (Marshall
370   1931, 23). Detailed discussions of these structures are available in a range of studies (e.g. Fentress 1976;
371   Jansen 1993b; Verardi & Barba 2010; Vidale 2010). Like many of the large non-residential structures of
372   Mohenjo-daro, the Great Bath was built atop a massive brick platform (e.g. Jansen 1993a; Mosher 2017),
373   which would have demanded the investment of many hours of labor from many people. Possehl
374   (2002, 103) speculated that a single platform would have required 4 million days of labor. Even at
375   Harappa, where colonial British brick-mining activities destroyed much of the city's architecture (Vats
376   1940, 17; Lahiri 2005), excavators reported substantial foundation platforms that could have supported
377   large nonresidential structures (Vats 1940, 12–17). The Harappa Archaeological Research Project has
378   revealed that massive, gated walls surrounded each of Harappa's neighborhoods (Meadow & Kenoyer
379   1997; 2005; Wright 2010; Kenoyer 2012). Evidence of collective action has also been reported in plans of
380   excavations at Dholavira, which reveal the construction of city walls, gateways, and a series of
381   interconnected reservoirs that were cut deeply into the bedrock surrounding the city (Bisht 2005; 2015).
382   Archaeologists have also found large non-residential structures in the Indus civilization's smaller
383   settlements, indicating that cities were not the only settlements that could muster labor for collective
384   action. Thick walls surround the smaller-scale sites of Surkotada (Joshi 1990), Kalibangan (Lal *et al.*
385   2015) and Kanmer (Kharakwal *et al.* 2012); and internally divided different parts of Banawali (Bisht
386   1987) and Bagasara (Bhan *et al.* 2004). A massive structure that could have served as a dock and another
387   that could have been used as a warehouse were constructed at Lothal (Rao 1973; 1979). Excavators have
388   identified smaller buildings dedicated to specialized production at Chanhu-daro (Mackay 1943; Sher &
389   Vidale 1985), and the brick platforms have been reported at the Harappa-satellite sites of Vainiwal
390   (Wright *et al.* 2003) and Lahoma Lal Tibba (Wright *et al.* 2005). Some of these structures rivaled those
391   constructed in the cities in terms of size and complexity and would likely have required the coordination
392   of labor from neighboring settlements.
393   Revenue is income expended through governance to undertake collective action. While buildings
394   with substantial storage capacities may serve as indirect evidence, direct inferences about past revenues
395   can rarely be made using archaeological evidence alone. Due to the vagaries of preservation, it is rare that
396   accumulations of resources can be directly associated with forestalled instances of administered collective
397   action. Most examples of storage spaces provide better evidence of household provisioning (Bogaard *et*

398   *al.* 2009) or agrarian risk buffering (Halstead & O'Shea 2004), though these activities may not easily be
399   distinguished from past efforts to mobilize revenue. Seals and sealings can be used to make indirect
400   inferences about revenue. This is because seals and sealings were used to monitor claims on resources
401   held by different social groups (sensu Green 2020), allowing resources to remain physically distributed
402   throughout society in the form of reciprocal obligations amongst everyday people and other corporate
403   groups (e.g. Hayden 2020). This form of "virtual" revenue would have been predicated on the widespread
404   availability of information, which would only have been accessible through the means of specification.
405   Caches of materialized information–in the form of clay "sealings" impressed with seals–attest to efforts to
406   record information about resource accumulation and expenditure. Similar technologies have been
407   recovered from other early contexts in the Middle East and South Asia, where they are often considered
408   evidence of "administration" (e.g. Ferioli & Fiandra 1983; Frangipane 2007; Duistermaat 2012; Ameri *et*
409   *al.* 2018). Indus assemblages reveal a clear concern with such forms of revenue. A cache of
410   approximately 90 sealings attest to their use in a system of monitoring access to different kinds of lockers,
411   containers, and structures at Lothal (Frenez & Tosi 2005)*.* This capacity to materialize information was
412   remarkably widespread. Thousands of Indus seals, tools that allowed people to make sealings, have been
413   recovered from sites located throughout the civilization's extent (e.g. Joshi & Parpola 1987; Shah &
414   Parpola 1991; Parpola *et al.* 2010). More than 1,000 seals were recovered from the excavated areas of
415   Mohenjo-daro alone (e.g. Mackay 1931; 1938), and the vast majority of Indus seals were recovered from
416   everyday households, not large nonresidential structures (Franke-Vogt 1991; Green 2020). The
417   distribution of seals likely reflects the distribution of control over resources, especially the internal
418   resources of concern to everyday households, clearly situating the Indus on the collective side of the
419   governance continuum and deeply embedding the "voice" of everyday households into its governance.
420   Indus weights similarly reveal a strong concern with revenue. They have been recovered in
421   smaller numbers than seals, and they may have been employed in taxation. At Harappa, weights have
422   been found in association with the gateway to one of the city's neighborhoods (Kenoyer & Miller 2007).
423   This association has only been preliminarily reported and does not appear to prevail across Indus sites,
424   some of which did not have neighborhood walls or gates. What could have been taxed, and by whom,
425   remains an open question. Still, seals and weights both reveal a common concern with monitoring
426   economic transactions and keeping track of resources, and both would clearly have been useful in
427   mobilizing revenue for collective action.
428   Deliberation is a key element of governance. Here I use the term in its widest sense to refer to a
429   full range of group decision-making practices; everything from discussions among leaders to public
430   rituals designed to build collective consensus. It is easier to deliberate when there are spaces available for
431   people to meet. Thus, the more space a society sets aside for deliberation, the more people can participate
432   in its governance, and the greater the likelihood that everyday people will be able to agree to a particular
433   course of collective action (e.g. Carballo 2013; DeMarrais 2016). Excepting palaces and temples, the
434   wide range of different kinds of common spaces that past people have built to accommodate deliberation
435   has not received adequate attention. Archaeologists argue that many societies incorporate public spaces
436   that facilitate governance activities like deliberation. Drawing on settlement scaling theory (e.g. Ortman *et*
437   *al.* 2016), Norwood and Smith (2021) hypothesized that "urban open space" may increase at a higher rate
438   than population, though add that the kinds of open spaces established may be culture-specific. Blanton
439   and Fargher (2008) have long argued that large public buildings associated with deliberation are an
440   indicator of collective action in a premodern society, and of good governance (Blanton *et al.* 2021).
441   Feinman and Carballo (2022, 101; see also 2018) have further specified that communal or large-scale
442   "…architecture that fosters access (e.g. open plazas, wide accessways, and community temples)" is a
443   strong indicator of collectivity. As good governance is implemented at increasing socio-economic scales,
444   so too does demand for deliberative spaces.
445   Mohenjo-daro's large non-residential structures were largely unwalled, widely accessible, and
446   featured large open spaces. As a result, many scholars have argued that they served a range of "public"
447   purposes (e.g. Jansen 1993b; Possehl 2002; Vidale 2010; Wright 2010; Smith 2016). Their accessibility,
448   enhanced by their numerous entrances and location on wide public streets, fits the criteria for public

449 spaces defined by Hilliard and Hansen (1984). Such spaces provided fertile ground for many people to
450 engage in deliberation. The "Pillared Hall" at Mohenjo-daro (Fig. 5) is one of the only structures that is
451 regularly included in speculation about the Indus civilization's political process (e.g. Possehl 2002),
452 including by authors who suggest that Indus palaces have simply so far evaded the trowel (e.g. Kenoyer
453 1998; Ratnagar 2016). The structure was spacious, measuring more than 30 meters to a side, and boasted
454 at least 20 brick pillars that could have supported a high ceiling (Marshall 1931, Mackay 1931: 159-161).
455 It had paved brick walks and walls that were interspersed with gypsum, which would have brightened the
456 space. Confounding early excavators, who compared the structure with courts from later Buddhist periods
457 (Marshall 1931:24), it lacked benches, simply providing a large, enclosed space that could have
458 accommodated hundreds of people. Indus cities are full of other clearings, yards, and similarly open
459 spaces that could have provided places to deliberate. Such a clearing fills the northeast quadrant of
460 Harappa (Meadow & Kenoyer 2005), and Mohenjo-daro's mounds are separated by spaces that appear to
461 have been deliberately left unoccupied (Wright 2010). Dholavira has an extensive clearing enclosed
462 within its walls (Bisht 2015). Open spaces within urban settlements may also, of course, result from site
463 formation processes. Unfortunately, such spaces rarely attract the attention from excavators that would be
464 needed to narrow down our understanding of their use. Future geophysical investigations at Indus sites
465 could help address this problem. For now, such features remain good candidates for deliberative spaces,
466 even if we are unsure of the specific form that deliberation took.
467   Bureaucratization also impacts the way people use space. I argued above that it leads to the
468 construction of "offices," here defined as institutional spaces that facilitate administrative activities that
469 crosscut and integrate social groups. Such institutional spaces are distinct from deliberative spaces in that
470 they are dedicated to the implementation of governance and not necessarily the production of consensus.
471 Interspersed among the houses of Mohenjo-daro were small structures that clearly were not houses. Two
472 examples are the "hostel" and "letter-writers' office" that were reported in Mackay's (1938) excavation
473 campaign at Mohenjo-daro. In a previous study, I argued that these were "small public structures,"
474 constructed, further opened to the public streets in later construction phases, and expanded over the
475 course of Mohenjo-daro's urban development (e.g. Green 2018). These small public structures could have
476 facilitated bureaucratic activities that could not be undertaken within houses. They were widely accessible
477 and positioned adjacent to a major public intersection, indicating these activities were likely public in
478 nature. Small public structures are undertheorized in archaeology, and there are understudied analogues in
479 other archaeological contexts (e.g. Seibert 2006). They could have played important role in implementing
480 governance. Offices allow people to monitor, regulate, and shape activities at an institutional scale. This
481 is why the small public structures of Mohenjo-daro had good access to the streets but were not
482 constrained by a particular household or neighborhood (Green 2018).
483   Infrastructures–road networks, city plans, walls, common storage facilities–materialize collective
484 aims (e.g. Wilkinson 2019) and thus provide convincing, if indirect, evidence of different forms of
485 governance. Good examples of infrastructure are the terraces surrounding Monte Albán (Feinman &
486 Nicholas 2012), water transport systems among the Maya (Halperin *et al.* 2019) or Mesopotamian
487 communities (Jotheri *et al.* 2019). So too was evidence of widespread faithfulness to street plans (Fig. 6).
488 Infrastructures are built up through many episodes of construction, each of which builds on and adapts to
489 the standards applied in previous episodes, back to initial construction. Such sequences of construction
490 coordinated the collective action of people separated by time and by space. Mohenjo-daro's
491 neighborhoods, each atop a substantial brick platform, were arranged along wide streets that ran from
492 north to south and were intersected by narrow lanes that ran from east to west (Mackay 1938; Marshall
493 1931; Jansen 1978). It is striking that among the interconnected structures of Mohenjo-daro's
494 neighborhoods, which changed dramatically through time (e.g. Mackay 1938; Jansen 1993b; 1993a;
495 Vidale 2010; Green 2018; Rizvi *et al.* In Press), the spatial integrity of many streets was nonetheless
496 honored over the course of many episodes of building construction. Each episode of house construction
497 re-established Mohenjo-daro's infrastructure. As Indus communities built and renovated their houses,
498 they often remained careful not to impinge on streets, which presumably served the transportation needs
499 of their settlements. In contrast, smaller lanes, which physically constrained access to houses, faced no

500 such constraint, shifting in location from building episode to building episode. The episodic maintenance
501 and modification of houses is important because Indus scholars generally agree that house construction
502 was not carried out by civic authorities, but by the members of individual households, or by
503 neighborhoods (Jansen 1993b; Wright 2010; Kenoyer 2012). The same pattern structured Mohenjo-daro's
504 drainage system, which included wells, pipes, gutters, and "soaks" that drained water from private bathing
505 platforms within individual households (e.g. Jansen 1993a; Rizvi 2011; Wright & Garrett 2017). As with
506 lanes, households likely constructed pipes that connected their bathing platform to the city's drains, which
507 were located at regular spatial intervals in the wide public streets. Open streets and drainage both
508 comprised public goods (Fig. 6), and elements of both kinds of infrastructure have also been revealed at
509 numerous smaller Indus settlements, such as Kalibangan (Lal *et al.* 2015) and Farmana (Shinde *et al.*
510 2011).
511   The interactions between Indus neighborhoods that would have facilitated these developments
512 have often been labeled heterarchical. Indeed, the interactions between guild-like organizations,
513 households, neighborhoods, and different Indus sites would likely have been unranked. With regard to
514 urban growth, the thinking goes that different heterarchical social groups–neighborhoods, corporate
515 groups, households–managed their affairs independently of one another (Possehl 2002; Kenoyer & Miller
516 2007; Wright 2010; Vidale 2010). Vidale (2018) offered an expanded version of this model, positing that
517 Indus heterarchy was analogous to competition between groups of elites evident in Medieval Genoa.
518 However, accepting this interpretation requires us to make the unfounded assumption that Indus cities
519 were stratified, forcing Indus evidence into an outdated neo-evolutionary model, and obscuring the
520 persistence of egalitarianism in the past (Green 2021). Better to suppose that neighborhood and household
521 groups likely exerted polycentric forms of authority on the urban environment (Petrie 2013b) than to
522 force archaeological evidence from the Indus into an a flawed, neo-evolutionary model of state formation.
523 Moreover, it is also unlikely that heterarchical interactions between different institutions can fully explain
524 the growth of Indus cities. Indus governance also incorporated institutional spaces capable of mobilizing
525 large quantities of revenue and managing its use, mobilizing labor at large scales. However, there is no
526 evidence that the specialists who occupied such offices belonged to a different class than the households
527 from which they coordinated labor.
528

Was Indus governance good?

530
531 Most debate surrounding the Indus civilization's political organization has focused on whether or not the
532 Indus civilization was a "state", and if it was, what kind (e.g. Fairservis 1961; Wheeler 1968; Fairservis
533 1989; Kenoyer 1994; 1997b; Lal 1997; Possehl 1982; 1998; 2002; Dhavalikar 2002; Agrawal 2007;
534 Ratnagar 1991; 2016; Wright 2010; 2016; Shinde 2016; Petrie 2013a; 2019; Chakrabarti 2014; Sinopoli
535 2015). Scholars have variously described Indus political forms as city-states, domains, and some even
536 suspect that it was an empire. Many of these interpretations hinge on the degree of elite agency a
537 particular archaeologist is willing to infer from the archaeological evidence. Noting that the Indus lacked
538 palaces, exclusionary temples, tombs, and aggrandizing monuments that archaeologists can use to infer
539 the presence of a ruling class, I have argued elsewhere that we need to explain political and economic
540 transformations in the Indus without invoking elite agency (Green 2021). This position leads to the
541 question: How do egalitarian urban societies govern themselves?
542   It is surprisingly straightforward to outline an answer. Egalitarian governance is likely to have
543 incorporated many of the same institutional characteristics neo-evolutionary theorists would have
544 confined to despotic states. Egalitarian governance mobilizes collective action that produces public goods,
545 such as economic legibility, civic organization, or environmental management–all things that are broadly
546 usable to most if not all of the people in a society. Examples of collective action in the Indus attest to the
547 construction of buildings that served common goals that crosscut many social groups–public buildings or
548 infrastructure that benefited everyone–not an exclusionary ruling class. Beyond collective action, Indus

549 governance coordinated the activities of everyday households and was oriented toward producing public
550 benefits. Street plans, drainage systems, and standards of recording and measurement all attest to the use
551 of revenues to create goods in response to collective needs. Evidence from the Indus civilization therefore
552 indicates that the governance of its cities was good, especially during the phase(s) that have left the most
553 pronounced material footprints.
554   Potential revenues for funding public goods likely increased with the economic specialization and
555 intensification that is well-attested in archaeological evidence from Indus cities (Wright 2010). These
556 economic resources were widely distributed throughout Indus society using weights and seals, not
557 dissimilar to the patterns of craft production and use evident at Monte Albán (Nicholas & Feinman 2022).
558 Indus seals and sealings comprised a coherent and distributed system of monitoring information–one that
559 was governed, but also emergent, and likely played a key role in making economic transactions legible
560 across social boundaries, another public good. Indus seals would have facilitated the collection of
561 revenues, which, by extension, may have existed in a state of social dispersal until needed for collective
562 action, and episodes of revenue collection may have been task-oriented and ephemeral. However, the
563 widespread availability of the means of specification, and thus access to information, prevented the
564 monopolization of revenues and predatory extraction of value from one corporate group by another (e.g.
565 Green 2020). The political decision-making process necessary to set objectives for revenue expenditure
566 likely occurred, at least in part, in deliberative spaces, which provided one potential mechanism for
567 resolving conflicts, setting agendas, and making plans, through mass participation. This is not to say that
568 every occupant of each Indus city weighed in on every collective decision, but such structures could have
569 allowed a great many voices to be included in the discussion. Nor were deliberative spaces the only
570 avenue to collective decision-making. Guild-like organizations and technological standardization almost
571 certainly came about through many instances of interaction among craftspeople. The deliberative process
572 no doubt benefited from the distribution of information within Indus society–seals and sealings
573 effectively democratized revenue data.
574   Offices provided the capacity to implement political decisions. The small public structures of
575 Mohenjo-daro's eastern mounds are a prime example of institutional spaces for the implementation of
576 governance (Green 2018), but platforms like those recorded at Lothal, Harappa, and even smaller sites
577 like Vainiwal could have served a similar purpose. These institutional spaces were not under the control
578 of a single household or neighborhood, and the people who mobilized labor through them may have been
579 temporary appointees from different households in place to carry out tasks. The sophistication of the
580 projects they appear to have coordinated suggests they amassed considerable skill and knowledge while
581 eschewing material benefits that exceeded those available to other people in the city. Here, too, a
582 democratized means of specification likely played a key role. The wide availability of information could
583 have served as a check on any effort to direct revenue toward projects that permanently increase the
584 political or economic status of a subset of people. It is much easier to achieve the equitable taxation of
585 internal resources if everyday people are in full possession of information about their contribution to
586 collective endeavors. Offices likely helped develop the protocols required to produce and reproduce the
587 physical matrix of Indus life, such as the brickmaking standards that were necessary to build the
588 structures we recognize as Indus. This relationship between deliberative and institutional space outlines a
589 potential comparative lesson for archaeology. Both deliberative and institutional spaces were essential to
590 good government, though the features of both will vary depending on the specific institutions involved in
591 governance. The ratio of offices to deliberative spaces may provide insights into how good a government
592 was in the past. When deliberative spaces are as prevalent as institutional spaces, we can infer that
593 governance was more responsive to everyday communities. Collective action, revenue, and deliberative
594 and institutional spaces are therefore interlinked within systems of governance. Each of these elements of
595 governance is attested to directly or indirectly by archaeological evidence.
596   The theory of egalitarian governance I have outlined here reinforces the idea that governance is
597 fairest and most sustainable when it emerges from within the groups being governed. Ostrom (1990;
598 2009; 2010) has long held that the people who govern best are those closest to the resource being
599 governed. The people who use a common resource must trust one another, set the rules for its governance,

600 and monitor one another to ensure those rules are followed. What if the "commons" being governed is
601 public revenue itself? Given that revenue emerges from all the constituents in a political system, does it
602 not follow that collective action is best achieved through the widespread participation in governance?
603 While Ostrom's model has long problematized the idea that "rulers" are the ones best positioned to
604 govern revenue, the Indus extends collective action theory because it provides a concrete example of
605 revenue without rulers, contradicting the myth that revenue only exists when it is captured by rulers.
606   Why is the potential that an early urban society governed itself without a ruling class so
607 challenging to political theory? After all, democratic deliberation, inclusive political processes, and
608 checks on the concentration of political authority are ideals to which many governments today aspire.
609 Task rotations, elections, and term limits are used now to serve to limit the concentration of political and
610 economic power within a specific social stratum. Rulers are non-essential to many of the supposed
611 outputs of good governance, and "non-elites" or everyday people often spearhead political actions in later
612 societies (Thurston, this special topic). Fiscal systems, which require revenue, are evident in politically
613 decentralized as well as centralized societies (Tan, this special topic). Perhaps it is because many
614 contemporary (and especially Western) narratives of political change are implicitly self-congratulatory,
615 and want to see them reinforced in the origin stories of today's nation-state (Blanton *et al.* 2020). It was
616 by no means pre-ordained that a ruling class would come to monopolize political decision making.
617 Indeed, the opposite would more likely be the case. After all reciprocity is a human universal (Mauss
618 1925; Sahlins 1972; Bowles & Gintis 2013), so it is unsurprising that the archaeological record records a
619 concern for fairness through deep time (Jennings 2021).

Conclusions

621
622 In this article, I have argued against the assumption that public goods can only be gained by surrendering
623 political agency to a ruling class. Addressing this issue is essential if we want to increase our
624 understanding of good governance, which coordinates collective action for the benefit of everyday people
625 (Blanton *et al.* 2021). The archaeology of the Indus civilization supports this strong association between
626 collective action and good governance, and between good governance and egalitarianism. In the Indus,
627 there is evidence that many different social groups coordinated their activities from the bottom-up and top
628 down. Indus communities adhered to common standards in craft production and construction, which
629 likely emerged through interactions between different households, neighborhoods, and guild-like
630 organizations. Access to information, such as that which could be materialized using seals and sealings,
631 was democratized, allowing substantial revenues to exist in a state of dispersal ensuring that political
632 decision-making took many voices into account. However, Indus governance also incorporated
633 institutions that facilitated mass deliberation and implementation, such as structures and spaces that could
634 have facilitated deliberation and the implementation of collective aims. Bureaucratic institutions, such as
635 civic authorities, that likely organized collective action at large scales to produce certain public goods,
636 like large nonresidential buildings, foundation platforms, and street plans, that were necessary for Indus
637 cities to grow and thrive. In conclusion, I reiterate the arguments advanced by the other authors in this
638 special topic that good governance is not limited to modern societies. The archaeology of the Indus
639 civilization encourages us to further question the agency of rulers to the creation of public goods and
640 consider the implications of the apparent linkage between good governance and egalitarian social
641 organization.
642

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1149

Figure Captions

1151

1152   Figure 1: Map of the Indus civilization during its urban phase. Included are the sites that are often
1153   presented as cities, as well as smaller settlements that are discussed in this article, where archaeologists
1154   have found substantial evidence of collective action. Map assembled using QGIS 3.16 (www.qgis.org)
1155   and employs a Nature Earth basemap (www.naturalearth.com).

1156

1157   Figure 2: A sample of seals from the Indus civilization. Reprinted from Green (2020) with gratitude to the
1158   Archaeological Survey of India. A: unicorn (M-143|63.10/23, DK 10323), B: buffalo (M-128|63.10/18,
1159   DK 8390), C: rhinoceros (M-276|63.10/149, DK 4812), D: elephant (M-279|63.10/27, DK 7675), E:
1160   short-horned bull (M-251|63.10/44, DK 5791), F: figure in tree with tiger (M- 310|63.10/184, DK 5969),
1161   G: seated figure (M-305|63.10/62, DK 3882), H: zebu bull (M-261|63.10/133, DK 8390), I: human/animal
1162   composite (K-50|68.1/8). All of these seals are curated in the Central Antiquities collection of the
1163   Archaeological Survey of India and were photographed by the author.

1164

1165   Figure 3: Weights from the Indus civilization. These weights were excavated from Mohenjo-daro and are
1166   curated by the British Museum. © *The Trustees of the British Museum. Shared under a Creative*
1167   *Commons Attribution-Non-Commercial-Share-Alike 4.0 International (CC BY-NC-SA 4.0) license.*

1168

1169   Figure 4: Masonry techniques employed at Mohenjo-daro that highlights the sophistication of the brick-
1170   making technology. Illustration redrawn from Marshall 1931: LXVII. Plans from Marshall (1931) and
1171   Mackay (1938) were digitized and extrapolated in three dimensions using QGIS 3.16 (www.qgis.org).
1172   Images is projected over Google Earth Satellite Imagery (accessed 2021).

1173

1174   Figure 5: Map and reconstruction of the "Pillared Hall" from Mohenjo-daro. Plans from Marshall (1931)
1175   and Mackay (1938) were digitized and extrapolated in three dimensions using QGIS 3.16
1176   (www.qgis.org). Images is projected over Google Earth Satellite Imagery (accessed 2021).

1177

1178   Figure 6: Map of Street and Drainage Plans from HR and VS Area at Mohenjo-daro. Plans from Marshall
1179   (1931) and Mackay (1938) were digitized and extrapolated in three dimensions using QGIS 3.16
1180   (www.qgis.org). Images is projected over Google Earth Satellite Imagery (accessed 2021).

Figure 1.TIF

Figure 2.JPEG

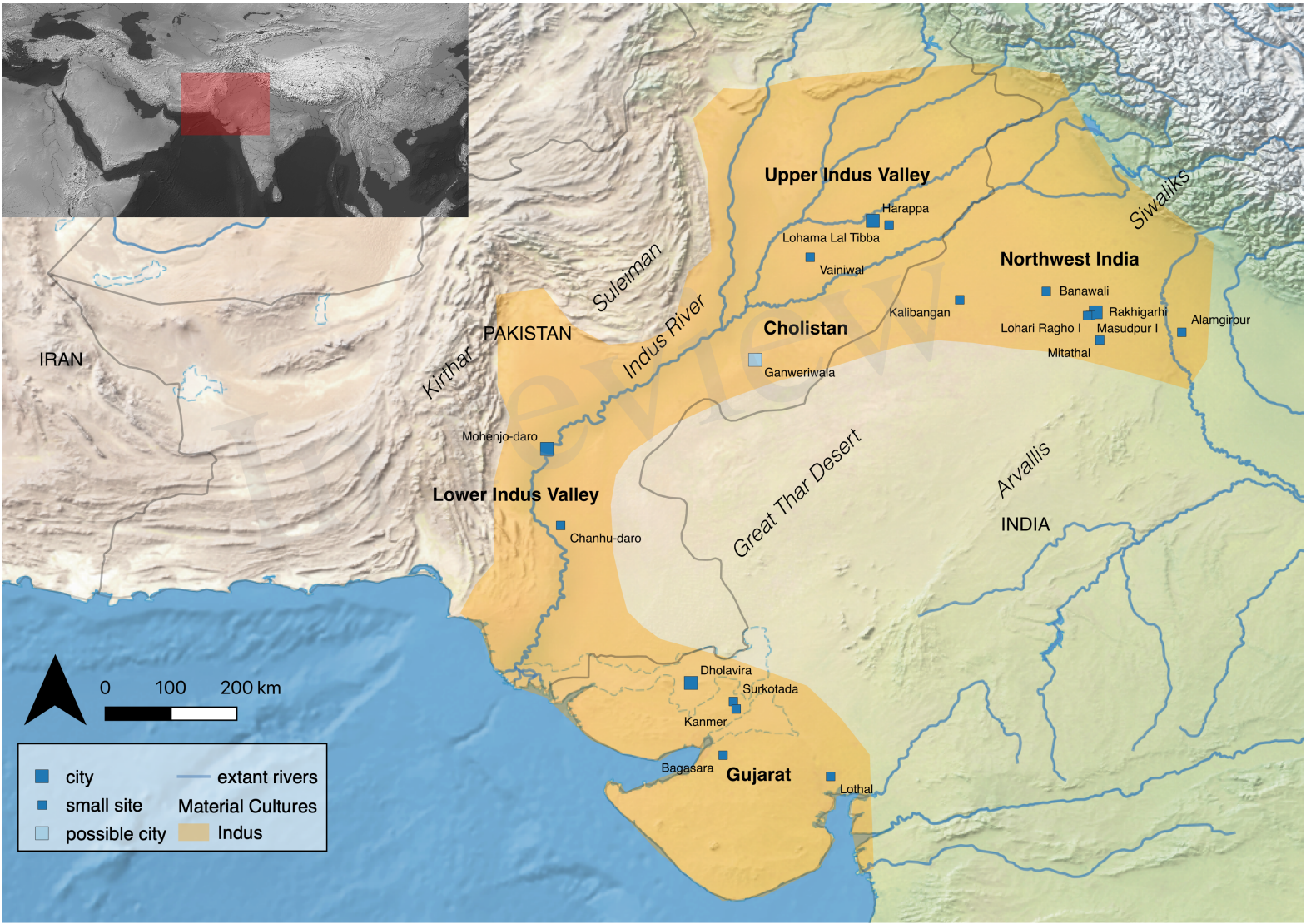Figure 2.JPEG

Figure 3.JPEG
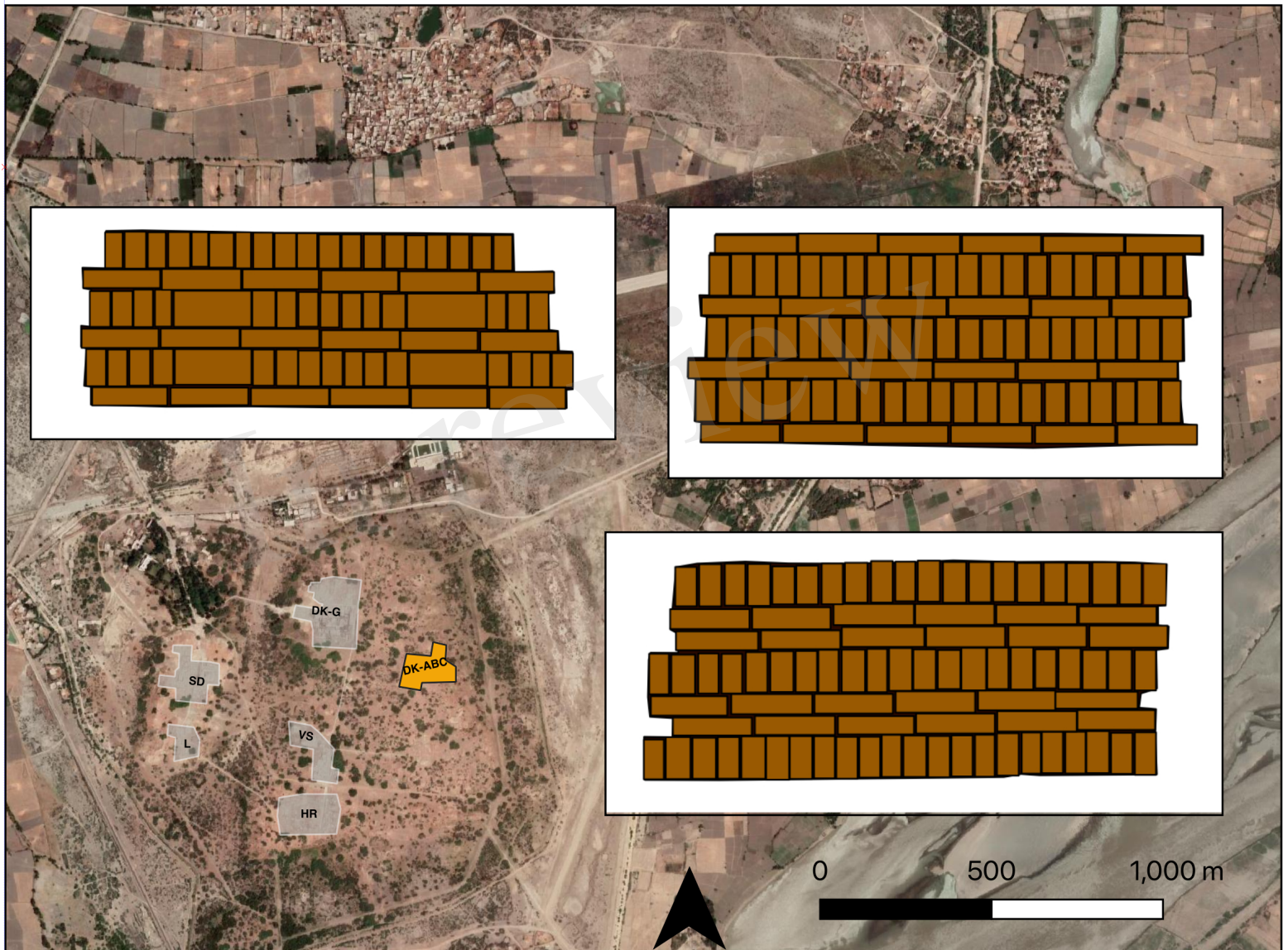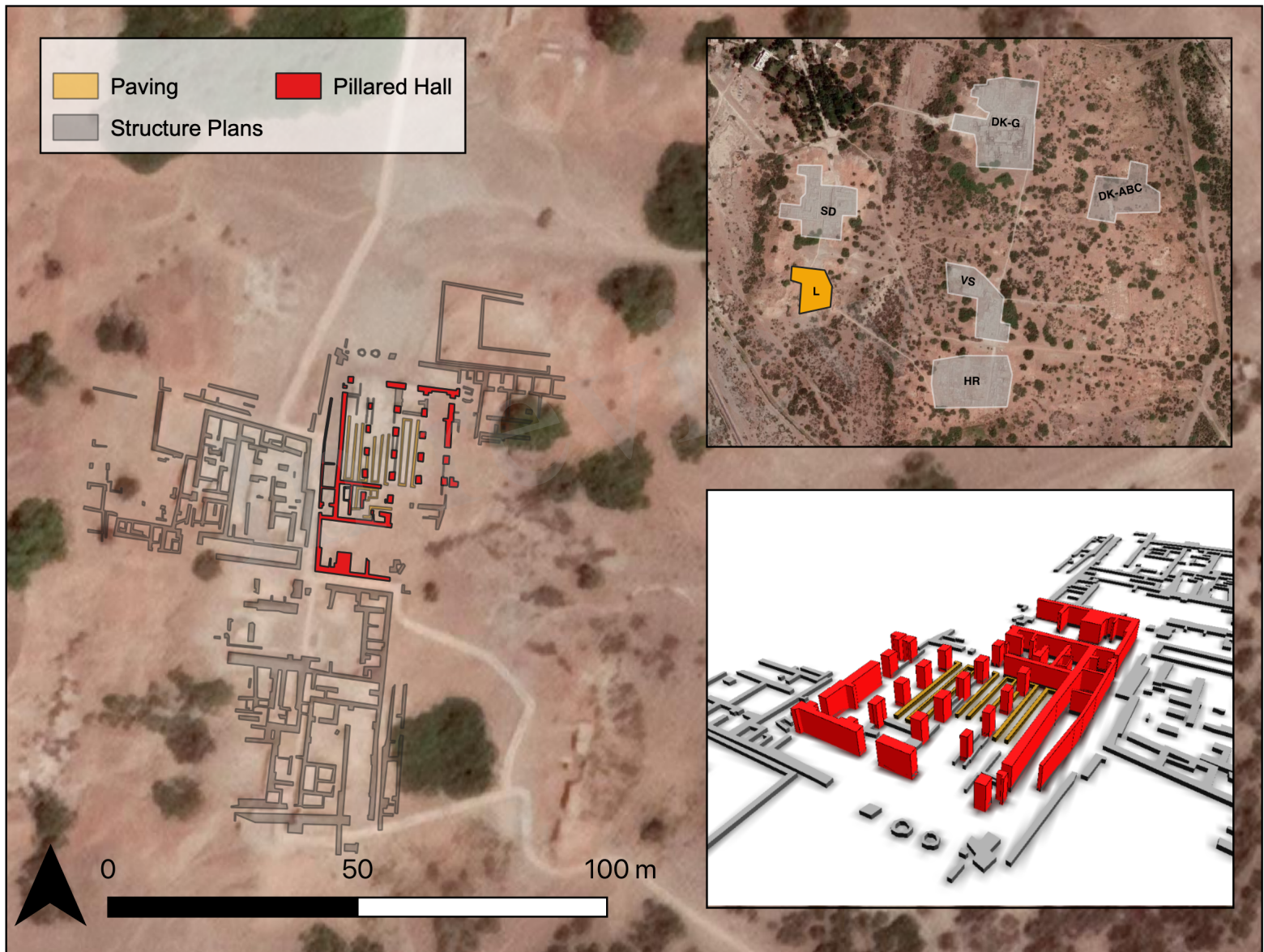
Figure 4.TIF

Figure 5.TIF

Paving Pillared Hall
Structure Plans

DK-G
DK-ABC
SD
VS
L
HR

0   50   100 m

Figure 6.TIF