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Central Transjordan in the Late Bronze and Early Iron Ages: An Alternative Hypothesis of Socio-Economic Transformation and Collapse

Over the past several decades, the archaeology and history of the Late Bronze Age (LBA) and early Iron Age of the central Transjordanian plateau have been greatly illuminated by discoveries in the Amman area, including Sahab (Dajani 1970; Ibrahim 1974, 1975a, 1975b), the Amman Airport Building (Hennessy 1966; Herr 1983) and Citadel (Harding and Isserlin 1953; Dornemann 1983), Hesban (Geraty 1983; Ibach 1978a, 1978b), and Madaba (Harding 1953). Very recently, the emerging picture and reconstruction of the period has been reinforced by archaeological reconnaissance in the Baqʿah Valley to the northwest of Amman (McGovern 1986a). Detailed scientific analyses of an overlapping temporal sequence of materials (pottery, metals, and silicates) has provided clear evidence for gradual technological and cultural change during this period (*c.* 1550–1050 BC). Most striking of all is the way in which the Late Bronze (LB) cosmopolitan city-state system was transformed into a much more insular society in the early Iron Age, with few foreign contacts and a lower standard of living. A similar cultural process has been documented about the same time in other regions of the country, particularly in the Galilee and the Hill Country of western Palestine (Aharoni 1957; Mazar 1981).

The elements of Iron IA material culture which superficially appear to be quite different from those of the LBA—including new pottery types, iron (steel) jewelry, necklaces made up primarily of Red Sea mollusc species—can all be accommodated within a general theoretical framework of a relatively peaceful, indigenous socio-economic transformation on the central Transjordanian plateau in the LB and early Iron Ages. Cultural continuity is also evident in the uninterrupted use of the same cemeteries and settlement sites, which show no sign of destruction at the end of the LBA.

Reconstructions of other periods of significant culture change in the ancient Near East have also stressed internal processes of development, e.g., in explaining urbanism in early Mesopotamia (Adams 1966) and the shift from sedentary agriculture to transhumant pastoralism in Early Bronze IV Palestine (Dever 1977; Kamp and Yoffee 1980). The major factors responsible for change may differ—the redistribution of wealth in Sumer (Adams 1966) or climatic deterioration at the end of the Early Bronze Age in Palestine (Richard 1980)—but the concept of systemic adaptation to localized cultural and/or natural constraints is the same. Sometimes, however, a diffusionary model has appeared to fit the facts better, and more abrupt archaeological discontinuities in a relatively short time span, such as the appearance of a distinctive type of pottery of Aegean affiliation on the southwestern littoral of Palestine about 1150 BC, may require corresponding discontinuous causes, in this instance the arrival of a new people from abroad, the Philistines (Dothan 1982).

The LB central Transjordanian city-state system shared in the international trading network of the period, and the transition there to the Iron Age cannot be divorced from developments in other parts of the then civilized world. The LB empires in Anatolia, the Aegean, northern Syria, Mesopotamia, and Egypt, which formed an international trading network, were wracked by warfare, mass population movements, and natural disasters toward the end of the LBA (Gardiner 1966: 270–314; Hallo and Simpson 1971: 117–120; Pomerance 1970; Desborough 1972; Schaeffer 1983: 74–75), and a so-called 'Dark Age' ensued (Snodgrass 1971). The Sea Peoples played a major role in the general upheaval (Sandars 1978). Archaeological sites from Greece, across Anatolia, to coastal Syria and Palestine, contain destruction levels which can be broadly dated between 1250 and 1150 BC. At some of these sites, especially those along the Mediterranean coast, the destructions can be correlated with the movements of the Sea Peoples (for Palestine, see Miller 1977: 252–262; cf. Lapp 1967), but farther inland, circumstances were probably more complex.

In Palestine, the evidence for a direct presence of the Sea Peoples drops off dramatically in areas distant from the Mediterranean (e.g., only one Philistine sherd was recovered at Beth Shan, even though this site was occupied throughout the 12th century; James 1966: FIG. 24.1). Nevertheless, the disruption of maritime trade and the weakening of the city state structure along the coast must have had serious economic and social repercussions at inland sites. Central markets for the collection and redistribution of exports (principally agricultural produce and livestock) and imports (luxury goods, pigments, tin, etc.), together with the stratified society (political rulers, priests,

merchants, craftsmen, peasants, etc.) that supported this system, would have been seriously undermined (cf. Lenski 1966; Sjoberg 1960). Similarly, the underlying causes for the migration of the Sea Peoples might well have had a more general basis, such as environmental deterioration and food shortages (Betancourt 1976), which in turn might have led to the movements of other peoples.

Largely because of its geographic diversity (Aharoni 1979: 21–42), Palestine cannot be treated as a single entity, subject to all the same environmental and cultural factors. The highlands of Transjordan are cut off from western Palestine by the Jordan rift valley. On the plateau itself, deep wadis separate the central region from areas north of the Wadi Zarqa (the ancient Jabbok River) and south of the Wadi Mujib (the Arnon).

The archaeological evidence from the central Transjordanian plateau indicates that an urban culture, with strong northern contacts (as evidenced, for example, by the glass/frit industry,* wheel-throwing of pottery, and imported cylinder seals), had been established on the central plateau by the beginning of LB IA (*c.* 1550 BC), which was similar to the city-state system west of the Jordan River. In LB II (*c.* 1400–1200 BC), contacts with the major empires of the period, including Egypt, which came to have a strong interest in western Palestine, appear to have diminished. Mycenaean and Cypriot wares actually outnumbered probable imports from Egypt and Syria. Specific styles and technological features are characteristic of central Transjordanian LB II material culture—bichrome decorated bowls and kraters with high ring bases, dark-colored frits and glasses, and high tin bronzes. Already in this relatively isolated cultural milieu, coil-building of pottery vessels was customary and the first steps had been taken toward steeling iron, features which were to become the hallmarks of the Iron IA culture. The implication is that some of the underlying factors responsible for the cultural and technological shift between the LBA and early Iron Age were already present in LB II, and were greatly intensified in Iron IA (McGovern 1985a, 1985b).

The very isolation of the central Transjordanian plateau no doubt accounts for some of the changes. The availability of certain raw materials (e.g., copper, iron, and manganese ores) and human predilections for prestige goods (cf. Renfrew 1978) would dictate specific lines of development. Lacking certain imported materials, the impetus for innovation might even be enhanced. Once a particular technological tradition had been established, refinements would follow.

Broader environmental changes might have pushed the society further in the same direction. There is evidence for a decline in precipitation toward the end of the LBA (Horowitz 1974; for Greece, see Lamb 1967; Bryson *et al.* 1974). The city-state culture, which most likely had a very limited subsistence base (the cultivation of grains and animal herding), would have been severely affected by climatic deterioration. Increased contacts with peoples on the margins of the urban society would also be anticipated. On analogy with the 'enclosed nomadism' of northern Mesopotamia in the Middle Bronze Age (Rowton 1977; Dever 1977), the *shasu* mentioned in contemporaneous Egyptian sources can be understood as groups of transhumant pastoralists with economic and even family ties to urban centers, who had developed a symbiotic relationship with the latter. Economic exigencies might have threatened this delicately balanced relationship, and possibly resulted in movements of people and even in conflicts. Transjordanian society must also have been affected by similar developments elsewhere in Palestine, including the more violent disruptions of the Sea Peoples along the coast.

If this reconstruction is correct, at least in its general features, then the LB city-state system could not have survived. Urban dwellers, many of whom would have been thrown out of work by the economic dislocations, would have needed to seek alternative means of support. The establishment of small outlying village communities, which have been documented in other parts of the Hill Country, might have provided an outlet for survival (cf. Hauser 1978). Concurrently, LB settlements, such as Sahab, the Amman Citadel, and Khirbet Umm ad-Dananir in the Baq'ah Valley, would have contracted in size in Iron I.

A transference of LB technologies to the early Iron frontier villages, especially after the collapse of hierarchical control in the city-states, might be anticipated (Lenski and Lenski 1978; Landsberger 1969, 1973; Moore 1966; Wolf 1966), although a frontier model for technological innovation need not apply (Gottwald 1983b *contra* Lenski 1980). The increased importance of the iron (steel) industry, as well as the emergence of new pottery types (specifically adapted to coil-building), could be examples of the exclusive employment of a new form or process, perhaps as visible symbols of the new order, which in other contexts has been described as a 'revolution' (Renfrew 1978).

The hypothesized movement from the city to the countryside (in the late LB and the early Iron periods) and back again (in Iron IC with the formation of the Ammonite and Israelite kingdoms) is paralleled in another transitional period in the Negev—Early Bronze IV–Middle Bronze I (Dever 1977: 104–111; Cohen and Dever 1978: 40–41; Thompson 1978: 21–23). The specific culture that emerges in a 'Dark Age' and the form it takes upon reconsolidation of the urban system is conditioned by antecedent cultural and environmental factors (Renfrew 1982), and similar societal patterns of change might well be evident over wide time spans. In the Middle East, a strong relationship has long existed between sedentary and transhumant groups. Thus, with the proposed establishment of new settlements of urban dwellers in the hinterland of central Transjordan in the early Iron Age, the symbiotic relationship with transhumant pastoralists and other marginal peoples in these areas might have been enhanced, and even have encouraged them to become sedentary. The hinterland

*According to modern ceramic criteria, a frit is a prefused component of a glass or glaze batch mixture, such as a highly concentrated colorant. In an antiquity, frits were often used by themselves; after the material was formed, it was fired a second time.

thus might comprise a 'reservoir' of farmers and pastoral transhumants that acted as a 'safety valve' to buffer the effects of socio-economic problems related to urbanism (Adams 1974; Renfrew 1982: 114).

This proposed reconstruction of *socio-economic transformation and collapse* of the city-state system on the central Transjordanian plateau differs from prevailing hypotheses about the LB-early Iron transition in Palestine as a whole (see Miller 1977: 262–279). The hypotheses fall into three general categories: (1) external invasion, (2) peaceful infiltration of 'semi-nomads', and (3) internal revolt of urban dwellers and peasants. All the theories derive their primary support from the biblical narrative of the Israelite conquest and settlement in Palestine, with some additional archaeological bolstering of their arguments. They also share the concept that a new people (whether Ammonites, Israelites, Moabites, or Edomites) or a new segment of the existing population gained political power in the early Iron Age and was responsible for the seemingly new cultural constellation.

Contemporaneous textual evidence about the central Transjordanian plateau is minimal, perhaps reflecting its relative self-sufficiency and independence from foreign domination (Weippert 1979). Except for Pella in the northern Jordan Valley, Transjordanian sites are virtually unmentioned in the Amarna Letters and the Egyptian royal inscriptions, which describe Pharaonic military expeditions and administrative control in western Palestine (Weinstein 1981). The only possible exceptions are an itinerary of Thutmose III (Redford 1982) and two inscriptions of Ramesses II (Kitchen 1964; Simons 1937: 155, list XXII d. 10), as well as several late New Kingdom references to Edom and the *shasu* people of southern Transjordan (Gardiner 1937: Pap. Anastasi VI 51–61; Giveon 1971). Even though most of these references date to LB IIB when Egyptian presence west of the Jordan was particularly strong (McGovern 1986a; James and McGovern, Forthcoming), many of the proposed identifications have been questioned (Aḥituv 1972; Weippert 1979). If Egyptian references to the area are few, inscriptional evidence from empires (e.g., Mitanni and Hatti) and city-states to the north are non-existent.

Lacking contemporaneous historical documentation, the identification of sites and the reconstruction of the LB-early Iron history of the area from biblical texts are endeavors plagued with difficulties. The patriarchal narratives are essentially biographies and have little relation to the secular history of the period (Thompson 1974; Van Seters 1975), and the several conquest narratives about the East Bank are difficult to reconcile with settlement traditions west of the Jordan (see Bartlett 1969; Aharoni 1979: 200–209; Wüst 1975; Van Seters 1972).

Advocates of *invasion* (Albright 1939; Wright 1965; Kaufmann 1953; Lapp 1967; Yadin 1982) take as their starting-point the traditional pan-Israelite incursion into Palestine as described most fully in the biblical books of Numbers and Joshua. This interpretative schema is then correlated with numerous destruction levels in Palestine, which spanned the end of the LBA and the Iron IA period. But, the majority of the sites where destruction levels occur either do not enter into the biblical account (e.g., Tell Abu Hawam, Tel Mor, Aphek, etc.) or are not said to have been destroyed (Lachish, Beth Shan, Gezer, etc.). The occupation of some Hill Country sites (e.g., Shechem and Khirbet Rabud) continues uninterruptedly from the LBA into the early Iron Age. Destruction by the Israelites is explicitly claimed for only four sites (Hazor, Hormah, Jericho, and Ai). Recent archaeological work has demonstrated that, while a destruction was at least possible at Hazor, the other three sites were apparently unoccupied during the LBA and were first settled in Iron I. In fact, the circumstances surrounding the known destructions are difficult to ascertain, except for those sites in the southwestern coastal plain which the Philistines or one of the other Sea Peoples probably destroyed. Elsewhere, in a period of general disaster and uncertainty, any of a number of peoples mentioned in contemporary textual sources (*shashu*, *ḫab/piru*, proto-Aramaeans, Sea Peoples, Egyptians, a neighboring city-state, etc.), and not only the Israelites, might have been responsible for a specific destruction level.

The invasion hypothesis as an explanation for the LB/early Iron transition on the central Transjordanian plateau encounters similar difficulties. Destruction levels have not yet been found separating LB levels from those of Iron IA. Sites mentioned in the narratives (e.g., Hesbon) do not even appear to have been occupied in the LBA. Elsewhere in Jordan, a destruction level at Tell Deir ʿAlla in the Jordan Valley has been attributed to an earthquake and the outbreak of fires (Franken 1964: 418).

As a general methodological procedure, the correlation of a destruction level with a specific intrusive people can only attain a high level of probability if the following criteria are met: (1) the material culture of the people is distinguishable at an earlier time period and in an area removed from the site of destruction (artifacts and architecture relating to religious or burial customs can be especially diagnostic, because of their uniqueness and the importance often attached to them), and (2) this culture is introduced in a relatively short time, following the destruction (ideally containing identifiable weapon types of the new people). Thus, the finding of LB IIB 'Israelite four-room houses' containing collared-rim jars in a confined area of the Negev or the eastern Nile delta, which later occur in Iron IA levels of central Transjordan (e.g., Sahab) and other parts of Palestine, would support the invasion hypothesis of a new people. Their identification with the Israelites, however, would require contemporaneous textual evidence. For central Transjordan, an external invasion does not accord with the data presently available—there are few imports apart from marine molluscs, no evidence of traumatic injuries in the human skeletal material, few weapons, and a preponderance of evidence for cultural and technological continuity over an extended period of time from the LBA into the early Iron Age.

A biblical interpretation that is almost diametrically

opposed to that of the conquest theory is cited in support of an *infiltration of 'semi-nomads'* (see Judges 1). Supporters of this view (Alt 1968; Noth 1960; Weippert 1971, 1979; Aharoni 1982; Fritz 1981) envision a gradual, peaceful penetration of 'tribal' groups (transhumants for the most part) into the Hill Country of central and eastern Palestine and the Negev, where Canaanite presence was minimal and there was room to settle. Indeed, a proliferation of villages, often unwalled, in these areas during the 12th century BC provides archaeological support for this view. Nevertheless, the builders can hardly be described as 'nomads' or even transhumants, since they were well acquainted with sophisticated metallurgy, pottery-making, stone masonry, plastered cisterns, and terracing from the start, all of which were either employed or had precedents in the LB urban civilization. Transhumants might well have been acquainted with some of these technologies (Thompson 1978), but in order to explain how all of them were present in the towns that had sprung up *de novo*, it must be assumed that the settlers were either urban people or in some way under the tutellage of urban craftsmen. The further step of identifying the settlers of the new villages as 'Israelites' must satisfy the criteria outlined above.

The *internal revolt* model (Mendenhall 1973; Gottwald 1979; Chaney 1983) posits a different set of circumstances. Far from being a thrust from the outside, whether peaceful or violent, change came from within as disenfranchised laborers and peasants joined in revolt against an oppressive city-state system, which was controlled by an upper class. Thus was ushered in the new order, 'Israel'. Here, biblical interpretation would appear to be of secondary importance, since direct literary evidence for a 'peasants' revolt' is lacking (Hauser 1978; Miller 1977: 279; for the relevance of the *apiru* of the Amarna Letters, see the critique by Weippert 1971). The hypothesis places primary stress on dislocations in the economic and social structure of the city-states, which are viewed as rigidly hierarchical and dimorphic (the ruling class versus the workers and peasants), a dichotomy that could only be resolved in quasi-Marxist fashion by revolution. If this theory is correct, then limited destructions or disruptions in occupation, particularly in upper class residential and public areas, might be expected at major sites along the coast and in the main inland valley of the Jezreel (e.g., Megiddo and Beth Shan) toward the end of the LBA rather than later in Iron I, after the Iron IA villages had been built in the Hill Country. This is not the case. The available archaeological evidence suggests that there was a large middle class and presumably a more equitable distribution of wealth in the LB city-states that would not have inspired a social upheaval. Even if the archaeological evidence was in accord with the revolt model, there would still be the virtually insurmountable problem of delimiting an 'Israelite' (or 'Ammonite') component in the peasant and worker population, except by definition. This hypothesis, however, is at least in keeping with the urban prerequisites for the Iron IA villages, but the assumption that peasants and laborers would have abandoned the cities for the highlands is unlikely in the absence of more compelling economic strictures.

A major failing of each of the prevailing theories is that it does not evaluate the archaeological evidence *in toto*, but rather makes selective use of it to support a literary or sociological model. Archaeological reconstructions should be clearly differentiated from literary models (de Vaux 1970), particularly those based on texts from periods later than the time they purport to describe. The biblical narratives are comprised of a variety of literary genres (biographies, etiologies, songs, etc.), and touch only tangentially upon underlying social and economic factors. Archaeological data have the advantage of being contemporaneous, often unintentional evidence of a society (Bloch 1953), which deserves to be evaluated in its own terms. Archaeology as a discipline has developed a whole range of scientific approaches appropriate to the primarily inorganic materials it is concerned with, including analyses of plant and animal remains, pottery and metals, architectural layouts and city plans, clustering of industrial materials and debris within activity areas, etc. Each line of evidence needs to be culled fully and then integrated together in reconstructing the socio-economic and environmental bases of a society. Chronology as the framework for ordering the various discrete data is crucial to this endeavor, and for the main period of interest here, the LBA-early Iron Age, this has been placed on a solid footing by excellent synchronisms with Egyptian dynastic chronology (e.g., Palestinian pottery in dated Egyptian contexts, and Egyptian artifacts, some with royal names, in Palestinian sites). Nevertheless, since the archaeological data represent only a small percentage of what remains of an ancient society and since new discoveries are constantly being made, archaeological reconstructions are at best working models.

Such strictures and recommendations apply to the interpretation of the Late Bronze-early Iron transition in central Transjordan as a long-term, socio-economic transformation, followed by the collapse of the city-state system. The general validity of this proposal, which is supported by the presently available data, can only be determined by more archaeological work in the area. For example, the settlement pattern of LB and Iron IA sites must be more fully mapped out by survey, and the extent and specific features of the LB and early Iron communities revealed by excavation. According to the proposed reconstruction, Iron IA settlements at urban sites should cover a smaller area than the preceding LB settlements, since the populations of the latter would have dispersed into the countryside. Also, if the cultural and technological transformations were relatively peaceful, then there should be no destruction layer between the LB and early Iron levels. The animal and carbonized plant remains that are recovered may shed light on the proposed climatic deterioration during the period, although corings of dry lake beds for pollen will probably be required as definitive evidence.

If the hypothesis is correct that the consolidation of certain LB technologies in the hinterland of Transjordan was accompanied by population movement away from city-states in the

early Iron Age, then certain predictions in terms of material culture can be made for the outlying areas. Most obviously, where a sufficiently high density of early Iron remains are found to suggest occupation, there should be little or no sign of LB material (except to the extent that the exodus from the cities had already begun in the LBA). On the other hand, LB urban traditions, perhaps somewhat modified, would be carried over into these Iron IA sites (as they would be at the LB sites which continued to be occupied in the early Iron Age), and should be reflected in the architecture, industries, and minor crafts of the newly founded early Iron Age villages.

In the case of the highly innovative iron (steel) industry, it is most reasonable to assume that such a labor-intensive activity was located in the vicinity of an ore deposit which served early Iron Age settlements. Sites in the Ajlun and Wadi Zarqa areas (such as Dhahrat Abu Thawab, 7 km north of the Baqʿah and on the same side of the Wadi Zarqa) are excellent candidates for Iron IA steel production (see Coughenour 1976). In a preliminary survey of Abu Thawab in 1983, iron slag and probable early Iron Age sherds were collected from a platform area in front of three caves. The site is in the midst of a fertile area at a higher elevation than the Baqʿah along the watershed, and probably received more rainfall in antiquity than it does today. In a period of climatic deterioration such as the late LB and early Iron Age are projected to have been, it would have been a preferred direction for human populations to move in. The area also includes extensive tracts of oak forest, which could have met building and fuel needs, the latter a high priority for an iron (steel) industry.

It may be proposed that native metalsmiths only began to exploit an ore deposit in the Wadi Zarqa/Ajlun area on a large scale when the LB culture began to disintegrate and decentralize. It is also possible that metalsmiths from farther south, who were associated with the copper-base industry in the Wadi Arabah, might have contributed to the development of the new technology (the prevalence of Red Sea molluscs in early Iron contexts points to contacts from this direction).

In the case of Abu Thawab, an archaeological survey in its vicinity should locate satellite Iron IA villages. Excavation of the platform in front of the caves should provide evidence for early Iron Age metallurgy, assuming the site belongs to this period. At a minimum, the finding of material evidence for iron production in an early Iron Age site in central Transjordan would seriously weaken the argument of most investigators that the Philistines introduced iron metalworking into Palestine (N.B.: no definite Philistine imports have been found east of the Jordan). At a maximum, depending on the scale of the iron production, it can be proposed that the location of iron ore was a contributing stimulus to the depopulation of the city-states and the creation of Iron IA villages.

The investigation of the LB–early Iron Age central Transjordan has barely begun. Yet, it has already yielded unexpected results, which cannot be easily accommodated within traditional models. Among other concerns, a more thorough understanding of the area is crucial in elucidating the beginnings of the glass/frit and iron (steel) industries, as well as the development of the early Ammonite and subsidiary cultures.

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Abbreviations

AASOR	*Annual of the American Schools of Oriental Research*
APEF	*Annual of the Palestine Exploration Fund*
ASOR	American Schools of Oriental Research
ADAJ	*Annual of the Department of Antiquities of Jordan*
BAR	*Biblical Archaeology Review*
BASOR	*Bulletin of the American Schools of Oriental Research*
IEJ	*Israel Exploration Journal*
JBL	*Journal of Biblical Literature*
JEA	*Journal of Egyptian Archaeology*
JNES	*Journal of Near Eastern Studies*
JSOT	*Journal for the Society of the Old Testament*
PEQ	*Palestine Exploration Quarterly*
SMA	Studies in Mediterranean Archaeology