DAMQĀTUM

INDEX

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The Mediterranean Diet in Ancient West Semitic Inscriptions

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Introduction

The field of West Semitic epigraphy is gradually being extended, as fences are being removed to increase its area. A dozen writing systems are now known to have been employed for recording West Semitic texts. For the Bronze Age, before 1200 BCE, the term "West Semitic" can encompass such languages as Amorean (Amorite, which originated in Syria), Phoenician (of the Lebanon region), and Israelian Hebrew; but also the "Minoan" language of Crete, which is now revealed in the Linear A and Eteocretan inscriptions. On the other hand, "East Semitic" refers to the dialects of Mesopotamia (Akkadian, Assyrian, Babylonian), which used Sumerian cuneiform writing for recording speech.

The primary purpose of this exercise is to show how several different writing systems were employed in the Bronze Age (1-10), and the Iron Age (1, 2, 8, 11, 12), for West Semitic documents:

(1) **Mesopotamian logo-syllabary** (Assyrian and Babylonian cuneiform) a modification of the Sumerian pictographic system;

(2) **Egyptian logo-consonantary** (the celebrated hieroglyphic system) with its stylized forms, known as Hieratic and Demotic; the Rosetta Stone (c.200 BCE) had a Greek text, and inscriptions in Hieroglyphic and Demotic;

(3) **West Semitic logo-syllabary** (commonly known as the Byblos syllabary or the pseudo-hieroglyphic script) with acrophonic signs for twenty-two consonants and three vowels; and these 66 (and more) syllabograms could also function as logograms, representing whole words;

(4) **West Semitic logo-consonantary** (the protoalphabet) with acrophonic signs for twenty-seven consonants; and the 27 (or more) consonantograms could also act as logograms and represent the word they depicted;

(5) **West Semitic consonantary** (the Phoenician short alphabet) with letters for twenty-two consonants;

(6) **West Semitic long cuneiform consonantary** (which is found in short and long forms, as with the early alphabet, and its cuneiform characters are derived from the linear letters of the proto-alphabet);

(7) **West Semitic short cuneiform consonantary** (not the same as the short linear alphabet, as it has only twenty-one letters, generally speaking);

(8) **West Semitic neo-syllabary** (in which the letters of the short alphabet were utilized to express syllables, with the vowels *i, a, u,* by changing the stance or shape of the character);

(9) **Kaptarian logo-syllabary of Crete** ("Minoan" Linear A);

(10) **Alashiyan syllabary of Cyprus** (Cypro-Minoan);

(11) **Cyprian syllabary** (for Arcadian Greek and Eteocyprian);

(12) **Greek alphabet** (for West Semitic Eteocretan). In providing examples of West Semitic texts recorded in the various scripts, several components of the ancient Mediterranean diet will come under scrutiny here, especially **oil** from olives, **wine** from grapes, **beer** from barley and wheat, **cheese** from the milk of goats, and **fish** from the sea. West Semitic (or "Canaanian") words for these foodstuffs will be highlighted in a selection of inscriptions from the Fertile Crescent (the Ancient Near East), and also from the Mediterranean world.[1]

(1) The Mesopotamian logo-syllabary

This complicated cuneiform script was first employed for Sumerian, and then East Semitic, as well as non-Semitic languages, but occasionally for West Semitic. An interesting example is the "pidgin" Akkadian (a West Semitic version of the Babylonian language), a "mixed dialect' used by scribes in Canaan, written in cuneiform script on clay tablets, and preserved in the Amarna letters in Egypt, and in the ruins of Ugarit.[2]

(2) The Egyptian logo-consonantary
Pyramid Texts
It is claimed that the oldest-known transcription of West Semitic language is in magic spells against snakes, transcribed into Egyptian hieroglyphs in pyramid texts, specifically in the tomb of Unas (Wenis), who was the last pharaoh of the Fifth Dynasty, in the 24th century BCE; but the Pyramid Texts are actually older than that.[3]

Spells against sickness
The London Medical Papyrus (BM10059) contains foreign spells, some of which are NW Semitic. No 32 is a *Keftiu* incantation against the Asiatic

disease.[4] This possibly means that the words will be Semitic, which is the language of "the Asiatics".
sa an ta ka p- pi wa ya'a ya m- -n ta r ku ka ra
(The – indicates that the vowel is uncertain; the words are not separated in this recorded flow of speech.)
If this is correctly dated in the fourteenth century BCE, when Crete was under Mycenean rule, the dominant language at that time should be Greek. Whatever the truth of the matter may be, this papyrus document has West Semitic texts written in Egyptian script.

Tablet from tomb of Senneferi (Thebes)[5]
This incomplete limestone tablet (tentatively dated to the fifteenth century BCE) is possibly a *"halaḫamary"*, a list of the letters of the early alphabet in the order beginning HLḤM, rather than 'ABGD. It certainly has those four letters at the beginning of the list, accompanied by an appropriate West Semitic word, written with Egyptian Hieratic characters.

(3) The West Semitic logo-syllabary
The examples presented here will be interpreted according to the decipherment of George Mendenhall, with a few corrections to his system.[6]

Clay cylinders from Tuba (Syria)[7]
These inscribed artefacts were found in a tomb, and are dated to the Early Bronze Age, perhaps 24th Century BCE as possibly the oldest-known West Semitic writing. They are fragments of two small cylinders, each of which had a thread running through it, originally; they were found near smashed jars, and possibly they were labels tied to the vessels, which may have contained the hearts of the deceased male and female adults, and of the child. The two legible pieces have eight syllabograms, which can be read according to Mendenhall's scheme (with the exception of the dotted circle, representing the sun, here understood as S̲I, from *sim̲su,* "sun", not PU, "mouth"):

O3a:[ ] NI (tusk) KA (hand) WA (hook or nail) NA (snake)

O3b: NU (bee) S̱I (sun) 'U (ten) HI (rejoicing)

nikawana: here we see the root *kwn*, "be", which was important for Mendenhall's decipherment of the Byblos syllabic documents; the *ni-* could mark the nip'al, "be established", as in Hebrew. The preceding syllabogram may be a circle, and so S̱I (sun), as in the other inscription.

nus̱i'u: another possible nip'al passive, from the root *w/ys̱'*, "save".

hi: possibly a pronoun (3rd person), or a logogram, *hillul*, "celebration" or "rejoice" or "high".

These words ("established", "saved") seem to be appropriate if the objects are talismanic. However, an intruder smashed them to pieces, apparently endeavouring to prevent the survival of the occupants in the afterlife.

WINE

Metal cup from Jamaica[8]

This is (*hana*) a cup (*kasu*) which (*sa*) (is made of) bronze (snake rebus, *nakas̱*)

Wine (*wanu?*) exhilarates (*tiruni*) (me?) and overwhelms (*tarida*)

There are two lines of writing, but the first starts on the left and runs dextrograde to meet the second line, which begins on the right and goes sinistrograde, till its door (*da*) meets the snake (a rebus for "bronze") at the end of the other line.

wanu: "wine"; WA as on the cylinder O3a from Tuba; NU is a simple vertical stroke, without the complex details of legs and head on the bee (as on clay cylinder 3b).

kasu: "cup"; KA (as on cylinder O3a); SU (*suk*, "booth"); the following *sa* ("breast") looks disconcertingly similar to the *su.*

tiruni: root *rnn*; cp. Ḥ G R N Y "feast of my rejoicing" on a Lahun ostracon.[9]

FISH

Document A from Gubla

This is an inscribed stone, an incomplete stela with monumental-style writing.[10]

1. ru tu mi bu hu ra [ba li] … Claim from Buhura-Bali …

2. ḥi sa ni m 'a sa mi m … of stores, of granaries …

3. ka wan a tu m ha ta q- mi pa …

4. ti ru ya ma pa ni . . mi . . m …

5. pa . . . du ti ti ma s̱a du ta . . .

*6. pa **da ga ti** 'a tu m s̱a du . hu 'i ya ma* …

This text has ten damaged lines, but it appears to be a royal taxation decree; the relevant words are *s̱aduta* ("collection, harvest", cp. *s̱aduda* in Gubla Document D), and *dagati* ("fish"), feminine collective noun, as in Genesis 1:26 ("the fish of the sea", *dgt hym*; and here, in line 6, *yama* could be "sea") as distinct from masculine *dâg,* plural *dâgîm*, which possibly appears as Caphtarian *daki* in HT 6b (section 9).

(4) The West Semitic logo-consonantary

This is the original form of the alphabet, with pictorial acrophonic signs for at least 27 phonemes, as in the long cuneiform consonantary (6); additionally, the signs could be used as logograms.

WINE

Wadi el-Hol inscriptions from southern Egypt

This is a pair of inscriptions on a rock face; one is vertical (V), and the other is horizontal (H); they are usually regarded as separate entities, but they are close enough (on the rock and in their subject matter) to form a single text.[11]

Vertical: M S̱ T R H ' N T Y G S̱ ' L
Horizontal: R B W N M N H N G Ṯ H ' P M Ḥ R

[V] "Drinking-place (MS̱T) of the excellent (R) celebration (H) of 'Anat ('NT). 'El ('L) will provide (YGS̱) [H] plenty (RB) of wine (WN) and victuals (MN) for the celebration (H). We will sacrifice (NGṮ) for her (H) an ox (') and (P) a prime (R) fatling (MḤ)."M S̱ T R H ' N T

"First-class (R) banquet (MS̱T) for the celebration (H) of 'Anat".

ms̱t: Hebrew *mis̱teh*, "banquet" (root *s̱ty*, "drink"). However, the literal meaning of *mis̱teh* is "drinking

place". In this regard, notice that in the light of the Egyptian graffiti on the site (but not taking this alphabetic inscription into account), Darnell has suggested that this could have been an official "drinking place" for the consumption of wine and beer in the celebrations for the goddess.[12] The occurrence of "plenty of wine" (*rb wn*) at the start of the horizontal line gives additional confirmation. Accordingly, an alternative translation needs to be offered:

"Drinking-place for the grand celebration of 'Anat"

The R is a head (*ros̲*) and a logogram, for "top-class", and also in MK̲R (at the end of the **H** line), "prime fatling".

"El will provide ...." (The objects of the verb are in the **H** line).

The sequence 'L is immediately recognizable as "god" probably indicating the chief god 'Ilu, or 'El in the Bible.

GS̲ could be a word for "army" (found in Arabic and Hebrew), and this suits the known circumstances of soldiers stationed on the desert road from Thebes; hence "the army of the god El". Another possibility is: "the voice (*gu*) of (*sa*) God (*'il*)". Or, the whole combination could be a personal name, Yigash'el (like Yisra'el), the signature of the writer. However, sense can be made of YGS̲ as a verb from the root *n-g-s̲*, "approach"; in the h- causative form, and, with the n dropped by assimilation to g, it could mean "bring in". An example is found in Genesis 27:25, where Jacob brings (*wygs̲*) game for his father Isaac to eat, and wine (*yayin*) to drink (root *s̲ty*, as in MS̲T above).

(5) The West Semitic consonantary

This is the Phoenician short alphabet, with only twenty-two letters, covering the same number of consonants as the West Semitic syllabary, and thus differing from the logo-consonantary (**4**) and the long cuneiform consonantary (**6**).

WINE AND BEER

Clay Bowl from the Levant (short alphabet)[13]

The inscription running around the bowl is clearly West Semitic, and all its words are found in Classical Hebrew (including *b'lt*). A diagonal line between H̲ and T shows the beginning and end of the text.

One indication that this is the short alphabet is the word *s̲mh̲,* since Ugaritic has *k̲* (palatal) not *h̲* (guttural) in this root; the same applies in *tbh̲,* but not so in *h̲nn,* and *h̲lb* (confirmed by Arabic, not Ugaritic).

H̲ N N S̲ M H̲ G ' M Ṭ H̲ B H̲ L B W N S B ' Ç P L B ' L T

"Gracious (H̲NN**) and joyous (**S̲MH̲**) is the Feast (**H̲G**) of the Mother (**'M**): sacrifice-meat (**ṬBH̲**) with (**B**) the finest (**H̲LB**) wine (**WN**) and beer (**SB'**) overflowing (**ÇP**) for (**L**) the Lady (**B'LT**)."**

h̲nn: "nice", root meaning "be gracious, favourable"; cp. the first word on the Beth-Shemesh ostracon (in section **8**). The four instances of N are simply vertical strokes.

s̲mh̲: the "gladness" root (with Sin not Shin in Hebrew). The M here has three water waves, but only two in *'m.*

hg: "festival" (Arabic *h̲ajj*, "pilgrimage festival"). The Gimel has the shape of V.

'm: "the Mother", presumably the same goddess as "the Lady". The 'Alep is an ox-head, but not pictorial.

tbh̲: the text has ṬH̲B, but the root *ṭbh̲,* Ugaritic *ṭbk̲*, "slaughter", seems more appropriate in this setting; cp. Hebrew *ṭebah̲,* "meat slaughtered for feast". The B is an archaic form, a simple square showing the ground plan of a house. The Tet seems anomalous, as a vertically divided square instead of a circle encompassing a cross.

h̲lb: perhaps "milk" (Arabic and Hebrew *h̲alab*), or else "fat" (*h̲eleb*), but possibly "the fat of the wine", meaning the best wine, as in English, "the cream of the crop".

wn: "wine"; a forked stick for Waw, and a vertical stroke for Nun; it is definitely Waw and not Yod, and so *wn,* as opposed to *yn* (**6**, **8**) or *yyn*, is an indication of ancientness, as in the Wadi el-Hol

horizontal inscription (**4**), and on the Jamaica cup (**3**).

sb': "beer", brewed from grain, or "strong drink"; cp. the Linear A BEER texts in section **9**. The fish (Samek) has its tail on the right and its head on the left; Samek is usually the telegraph pole (spinal column) in the short alphabet.

çp: çwp, "flow" or "overflow".

b'lt: "the Lady", a goddess particularly associated with Byblos (and this bowl may have come from Byblos); this title appears frequently in the proto-alphabetic inscriptions at the Sinai turquoise mines.[14]

This inscription may be profitably compared with the Wadi el-Hol text (in section **4**): both are referring to celebrations for a goddess (here "the Mother" and "the Lady", and there 'Anat); wine and sacrificial meat are mentioned in each case.

It is noticeable that the copula *wa* is lacking in these early texts, and perhaps "and" is simply *u*, as in Akkadian and sometimes in Hebrew, without a glottal stop, and therefore not represented in non-vocalic writing; with the glottal stop, Ugaritic *'u,* as also Hebrew *'o*, is a disjunctive pronoun, "or".

Curiously, Sealand signature-inscriptions from Babylonia in the 16th Century BCE are close to the Iron Age style of the Phoenician alphabet,[15] but the version of the Phoenician script on this bowl is different, with some unique features.

(6) The long West Semitic cuneiform consonantary

This system is partly syllabic, having separate signs for 'u, 'a, 'i . At least 27 consonants are represented in the inventory, as in the original pictorial alphabet. The cuneiform characters are based on the original pictophonograms.[16]

WINE

Ugaritic text **KTU 1.114:16**, "El drank wine (*yn*) until he was sated, new wine (*trt̲*) until he was intoxicated (*s̲kr*)".

The consonant T̲ shows that the extended consonantary is in evidence.

(7) The short West Semitic cuneiform consonantary

This appears to be a reduction of the long version, a simplification but with new complications.

OIL

KTU 4.710 (RS 22.03) (Commercial document from Ugarit).[17]

(3) *kd s̲mn* "a jar of oil"

(10-11) *'s̲rm s̲ls̲ kd ztm* "twenty-three jars of olives"

kd: kad (cp. *kadi* in **ZA 15b,** Zakros Linear A administrative document, in section **9** below).

ztm: "olives"; various forms of *zayt* ("olive") are also found in sections **9** (*PK 1.7, KN Zc7*) and **10** (bowls from Cyprus).

This text also has the weight *sql* (*t̲ql*) "shekel" (of silver) in line 5, together with the dry measure *prs*, here for wheat (lines 5 and 7); cp. *tekelo | pesaro* on **ENKO Apes 001**.[18]

The last line (13) has *w.s̲ls̲t kst*, "and three beakers" (*kasu*, "cup", as in the bronze cup in section 3. Note that the S̲ (Shin) is a circle, representing the sun (Shimsh), and the S covers Samek and Sadey (Ç).

(8) The West Semitic neo-syllabary

As a sample of the few substantial inscriptions from early Israel, we may take the Beth Shemesh ostracon (ink-inscribed), and compare it with the Izbet Sartah ostracon (stylus-engraved). Both show variety in the forms of the characters in their respective texts, and while this might be haphazard it could be significant, in that the different stances and shapes of the letters indicated which vowels went with the consonants; if so, the three vowels -a, -i, -u would be expected, as in the original West Semitic syllabary (section **3**, above) and in the cuneiform long alphabet (section **6**, above), which had three separate forms of Aleph for these three vowels.[19]

WINE

Beth-Shemesh Ostracon

This double-sided document was discovered in Beth Shemesh in 1930, and its ink inscription has

been fading ever since, so that old photographs are now our main source.[20] The language emerges as West Semitic, but the writer could have been Canaanian, Philistian, or Israelian, because of the population changes at the end of the Bronze Age. The proposed reading recognizes a boustrophedon arrangement: lines 1, 3, 5 run downwards; lines 2 and 4 go upwards; line 6 runs from left to right, and this is the usual direction for neo-syllabic inscriptions (for example, the Izbet Sartah ostracon), while Phoenician inscriptions run from right to left; but this line 6 could be considered as simply an extension of line 5.

(1) H̲ N N (2) N ' M G

(3) L ' Z ' H̲ (4) R S B '(5) B T Y N (6) ' M ' M T

h̲nn n'm g // l'z 'h̲r sb' bt yn 'm 'mt

Tentative syllabic version (1) h̲a-ni-ni (2) na-'i-mi gi (3)la-'a-zu 'ah̲a-(4)ra su-bu-'i (5) ba-ti ya-ni (6) 'i-m-'a-ma-ti

(1-2) **A nice pleasant voice.**

(3-4) **Slurring after tippling (5) in the wine house (6) with a maid.**

Working on the hypothesis that the forms in the Phoenician alphabet (and the later Hebrew alphabet) are the *–i* syllabograms, and that the letters on the Izbet Sartah abagadary are the *–a* syllabograms, notice some of the potentially significant details:

'ayin in line 2 (with no dot) is *'i*, while the dotted 'ayin in line 3 is *'a*;

'alep in line 4 (leaning leftwards) is *'i*, and the one in line 6 (leaning rightwards) is *'a*; 'alep in line 3 seems to be upright, and is perhaps *'u*, or another *'a*;

Samek is a fish (line 4), as on the Izbet Sartah ostracon, but there the head is at the bottom (*sa?*), and here the tail (apparently) is at the bottom (*su?*); the standardized consonantal alphabet has the other Samek.

There are two versions of Bet (4, 5), and other letters also have variants; but, no Shin, nor Sadey.

Here we see a word for "wine", and it is YN, not YYN, nor WN. Incidentally, judging by the number

of *–i* endings, it seems that the genitive case was still functioning in the language.

(9) The Kaptarian logo-syllabary of Crete (Linear A)

Kaptar was a name applied to Crete in the Bronze Age; it was *Kaphtor* in the Bible (Caphtorim were from Caphtor, Deuteronomy 2:23; Philistines came from Caphtor, Amos 9:7, Jeremiah 47:4), *Kptr* in Ugaritic texts, and *Keftiu* in Egypt.[21]

With regard to the Aegean scripts,[22] this is how our present knowledge stands and how it may be extended: **Linear B** (a logo-syllabary for Mycenean Greek)[23] and **Linear C** (the Cyprus syllabary for Arcadian Greek)[24] offer us known sound-values for most of their glyphs; it is now common knowledge that both systems developed out of **Linear A**,[25] which in turn was a stylized version of the original pictophonic and acrophonic logo-syllabary of Crete.[26] Thus, most of the solutions for decipherment are clear: for example, the cross + for RO/LO is obvious in every member of this family of scripts, as also the twig |- for DA/TA, and the Y-shaped cuttlefish (sepia) for SA.

We can identify North and South systems of writing in Crete: from Knossos in the north we have seals and inscriptions in the original pictorial script, which produced Linear A; from Phaistos in the south we have the celebrated Disc,[27] with a different script, and apparently vestiges of it can also be found in linear form on some of the administrative clay tablets from Phaistos (for example, **PH 13c** has a fish, equivalent to PD33, but with no counterpart in Linear A).[28] Ironically, the largest collection of Linear A tablets comes from Hagia Triada, adjacent to Phaistos, and they are Semitic, it will be argued here. However, it seems that the northern (Knossos) and southern (Phaistos) scripts were both constructed acrophonically on the basis of a Hellenic dialect.[29]

The Kaptarian documents (inscribed on clay tablets, offering receptacles, and vessels) are available (with photographs and drawings) in the corpus (*Recueil*) of Linear A inscriptions; to locate an item, consult the concordance in the fifth

volume of the set.[30] The inscriptions relating to offerings and libations are conveniently collected in a book on the subject, which includes a concordance.[31]

For the syllabic signs and their interconnections, see my inventory of Cretan and Cyprian syllabograms.[32]

It transpires from the dedicatory inscriptions that this is a give-and-get system of religious exchange (*do ut des*, I give that you may give in return).[33] Examples of the offering formulas are included below.

WINE

The ideogram for wine (P156) is found eight times in the original pictophonic ("hieroglyphic") texts and continues into Linear A and B (AB131). It represents a grapevine-stand, like the hieroglyph (M43).

HT 40.1 (Hagia Triada administrative document)

The first sequence on the clay tablet is: *nudu WINE* (logogram AB131).

We can relate this *nudu* to Hebrew *n'od* or *nôd*, "skin bag" or "leather bottle", and understand it as "wineskin" or "bottle of wine". Young David took a "skin of wine" (*n'od yayin*) to King Saul (1 Samuel 16:20).

ZA 15b (Zakros administrative document)

The initial sequence (**15b.1**) is:

kadi. WINE 3.

This *kadi* could be the same word as Hebrew and Ugaritic *kad*, meaning "jar" or "jug", a container for water, wine, oil, or flour.

The remainder (**15b.2**) runs:

kuro. WINE 78   RA-WINE 17.

The term *kuro* is found frequently in the Hagia Triada accounting documents, and here in **ZA 15b**; it is acknowledged as meaning "total"; if it is a Semitic word it would be *kull,* Hebrew *kol,* "all" (the Kaptarian script cannot distinguish *l* and *r*). The total for both sides of the tablet is 92; the scribe adds a RA category of wine with a sub-total 17; this combination also occurs in **ZA 6b.2**, and on **KE Zb 5** (on a fragment of a vessel, presumably

referring to its contents). A Hebrew example is the list of David's heroes, ending thus: "total (*kol*) thirty-seven" (2 Samuel 23:39). Incidentally, in the Linear A texts we only see numerals not number-words.

HT 131ab (Hagia Triada accounting tablet)

This document is severely damaged, but lines 2-4 on side b have the symbols for FIG, OLIVE, and WINE, with accompanying numbers, and a grand total for both faces of the tablet is provided, with the word *potokuro*; one remote possibility is that the Greek word for "all" (*pant-*) has been affixed to the Semitic word; or it could be the Semitic word *bat*, "daughter", hence "daughter total" as the complete sum of all the numbers.[34] This practice is clearer on **HT 122ab**, with a sub-total (*kuro*) on each side, and the complete total (*potokuro*) on side b.

KO Za 1 (Base from Kophinas, inscribed on four sides).

This text will serve to introduce us to the standard formulas that are used for making libations and other offerings.

A TA I SO WA YA || TU RU SA ME RYA RE . NO DA||A .

U NA KA NA SI . I||PI NA MA . SI RU TE

"I bring my offering, strong fresh wine, a bottle, and we shall indeed collect abundance."

If the object is an altar, it might not accept libations; and so, liquids would be offered in containers.

atai: "I bring"; the verb seems to be common Semitic *'t'* or *'ty*, "come, go"; this verb is known to have a transitive force as well, and thus "bring"[35]; but it might be a causative form, "I cause to come"; the writing system cannot show 'Alep (for Aramaic 'ap'el causative) or He (for Hebrew hip'il) or 'Ayin in the next word, *sowaya*. Another possibility is that *atai* is from the verb *ntn* or *ytn*, "give", with *n* not recorded, as happens in Linear B, and presumably also in Linear A. Notice the later Eteocretan stone fragment from Dreros, with

the corresponding word ATAE, "I bring" (section **12** below).

sowaya: the suffix *–ya* is for 1. p. sg, "my"; *sowa* would be related to Ugaritic *ṯ'*, "offering" (*hw ṯ' nṯ'y*, "this is the offering we offer", KTU 1.40.24); cp. Ethiopic *ṣawa'a*, "make a sacrifice" (notice the *w*); and Hebrew *ṣay*, "gift" (brought to God); the *–a* indicates that *sowa* is the object of the verb (accusative case singular); in *souya* (**AP Za 1**), the *–u* would be the standard Semitic marker of the nominative case (singular and plural); the vowel for the genitive case (singular and plural) is *–i* (also for plural accusative).

turusa: "new wine", Hebrew *tîroṣ,* Ugaritic *trṯ*, perhaps fermented, possibly not; cp. Ugaritic text KTU 1.114:16, "El drank wine (*yn*) until he was sated, new wine (*trṯ*) until he was intoxicated (*škr*)"; the *–a* of *turusa* would be the inflection for the accusative case, as also on *sowa* and *nodaa*.

meryare: the reading of each letter is not certain; RE could be the olive logogram; the Semitic root *mrr* can mean "bitter" or "strong".

nodaa: this could be the "skin bag" (Hebrew *no'd*) that we met as *nudu* in **HT 40** above; *idaa* is the customary transcription, but this is one of the few documents that allow us to distinguish the syllabograms I (an olive branch) and NO (a hand); note also *noda* (not *ida*) on the fragmentary **PK Za 17** and **18**.

unakanasi, "and (*u*) we will gather" (N- as 1 p. pl. prefix), or "and it will be gathered" (N verbal pattern, reciprocal or passive); but a variant formula suggests that the "*I* bring" and "*we* collect" progression is normal (see **ZA Zb3**, wine pithos, below); the root is KNS, "gather, collect", as in Hebrew (for example, in *kneset*, "congregation, assembly").

ipinama: the *pina* sequence suggests *panu* ("face") and being in the presence of the deity (Exodus 23:15-17, "see my face", regarding the festivals and appearing at the sanctuary with offerings); but compare Ugaritic *apn* (and *ap-pu-na-ma*), "and

also" or "and even"; the proposed translation is "indeed", equivalent to *aya* in **SY Za 2**.

sirute: two Hebrew words offer themselves for consideration: *šârêt*, "ritual service"; or *srh*, "multiply" (apparently referring to oil in Isaiah 57:9) with a noun *šârût*, "riches" (in Ezekiel 27:25); hence "wealth" or "abundantly" as possible meanings in this context.

AP Za 1 (*Libation bowl with incomplete inscription, from Apodoulou*)

YA TA I SO U YA …

yatai souya: apparently says "My offering comes …."; *ya-* indicates 3. p. sg. from the root *'t'*, "come", as *a-* shows 1. p. sg. in *atai*, the usual word in the offering formula; as stated above (**Sy Za 2**), the *–u* would mark *so*u*ya* as the *subject* of the verb *yatai*, whereas *sow*a*ya* is the *object* of *atai*.

IO Za 8 (Fragment of a circular libation receptacle from Iouktas)

]A NA TI SO WA YA[

"I give my offering"

The verb seems to be from a "give" root (*ntn* or *ytn*).

ZA Zb 3 (Inscribed pithos)

WINE 32 DI DI KA SE . A SA MU NE . A SE
A TA I SO DE KA . A RE PI RE NA . TI TI KU

atai: "I bring", according to formula, but with *sodeka* instead of *sowaya*, "my offering".

sodeka: possibly "your libation", root *šdy*, "pour" (Ugaritic, Aramaic)

arepirena: "for our fruit"; *'al* (preposition, "on account of"); *pr,* "fruit" (Ugaritic, Hebrew); *-na*, 1. p. pl. suffix. This shows a similar pattern to the usual formula: "**I** bring (*atai*) my offering" and "**we** shall collect" (*unakanasi*).

ase: "gift" (Hebrew *'wṣ,* Arabic *'ws*)?

asamune: any connection with *šmn*, "oil"? Or the Phoenician divinity Eshmun? Or "debt" or "atonement offering" (Hebrew *'âṣâm*, 1 Samuel 6:3, regarding Philistines)?

titiku: apparently a personal or divine name; also in **HT 35** at the beginning of a list which includes wine and oil.

PH Wc 46 (Rondelle from Phaistos)

WE NA (and possibly a part of the WINE sign below this, as on PH Wc 43 and 44). The syllabograms are from the southern system, as exemplified on the Phaistos Disc: NA is the head with an eye and two tears on the cheek, and the WE is enigmatic, perhaps a grub (werm, according to the decipherment of Steven Fischer); the language could be Hellenic or Anatolic rather than Semitic.

KN Zb 4 (Fragment of a pithos from Knossos)

] YU? . YA NE . NE[

The NE is unusual and might be SI, but the vertical strokes on the ends of the crossbar should be oblique for SI. If this is *yain*, "wine", then a West Semitic sound-shift is in evidence here (*w* > *y*). The habitual use of the WINE logogram (examples: **KN Zb 34. 36, 37, 38**) conceals the wine word.

THE Zb 3 (Jug from Thera)

A NE

The character NE (a libation vessel) is more pictorial here than the two in **KN Zb 4**. If this *ane* is a word for "wine" (without initial *w* or *y*) the question of the identity of the language arises.

WATER

HT 89 (Clay tablet from Hagia Triada)

MA I MI *24*

maimi: this combination occurs in line 4; it could be the Semitic word for "water" (Hebrew *mayim*); other entities in the record use logograms, such as FIG and WINE in line 6, and there is no known "water" symbol in the system; the quantity "24" is a puzzle to solve.

BEER

The ideogram for BEER (P157, AB123) has hitherto remained unrecognized; it is usually said to be a marker for AROMATA, spice; reference books do not explain it; the one instance of the original pictogram (P157) has mesh-lines on the top part; apparently it is a tankard with a strainer.

There are two categories of words associated with this logogram: the *s̠kr* group (*sikiri, suqare*), probably barley-beer; and the *sb'* set (*subu, sipu*), presumably wheat-beer.

HT 49a.7 (Clay tablet fron Hagia Triada)

BEER subu

The beer tankard (P157, AB123) is in evidence here; it is not O (AB61, an eye, side view, with eyelashes at top and bottom); *subu* may be cognate with Hbr. *sobe'*, "intoxicating drink" (beer?).

HT Zb 161(Pithos from Hagia Triada)

sipu: presumably "beer", Akkadian *sibu,* "beer", "brew", Hbr. *sobe'*, "strong drink" (beer?). Perhaps *sipiki* is also a word for "beer" or "strong drink", in **ZA 4a.6-7, 5b.2, 15a.5**, all in a context with the wine sign (but not the beer sign).

HT Zb 158b (Pithos from Hagia Triada)

su ki ri te i ya

(cp. *suqare*, "beer", in **TL Za 1** below; and *tai* BEER in **HT 9ab**)

IO Za 16 (Offering table fragment from louktas peak sanctuary) . . . PG 157/AB123 . YA SA SA RA ME . U NA RU KA AB123 BEER: this symbol (beer mug with a strainer) also appears with *suqare (s̠ikr)* "beer" in **TL Za 1**.

unaruka: "and we shall collect" (root *lqh̠*, "take"?), a variation on *unakanasi* with the same meaning.

TL Za 1 (Offering ladle from Troullos, near Arkhanes)

A TA I SO WA YA . AB123 (*BEER*) SU QA RE .
YA SA SA RA ME . U NA KA NA SI [. I PI] NA MA .
SI RU [TE]

"I bring my offering (*atai sowaya*), beer (*suqare*), O Deity (*yasasarame*), and (*u*) indeed (*ipinama*) we shall collect (*nakanasi*) abundance (*sirute*)."

suqare: cp. *sukiri* in **HT Zb 158b** above; connected with the Semitic "intoxication" root *s̠kr;* presumably beer brewed from barley. This word is usually

transcribed as *osuqare*, where the logogram BEER is misread as the syllabogram O (an eye).

The dedication formula here is basically the same as **KO Za 1** (WINE), above, and the details are explained there. See also **SY Za 2** (OIL), **AP Za2** (CHEESE).

OIL

Two relevant logograms are: AB122 OLIVE and A302 OIL

TY 3 (Clay tablet from Tylissos)

This is a record of oil of various types, and olives (once, line 3a.4) using the OIL and OLIV logograms. The sign ZA appears in 3a.1, possibly an abbreviation of *zait,* "olive" (see **PK 1.7** below).

SY Za 2 (Square offering table from Kato Syme rural sanctuary)

A TA I SO WA YA. YA SU MA TU OLIV (AB122).

U NA KA NA SI OIL (A302)

A YA

"I bring my offering, O Deity, olives, and we shall collect oil, indeed."

This example is instructive, showing how the offering formula works:

the first segment states that the person is presenting an offering (*atai sowaya*); the second part is addressed to the recipient deity (*ya-sumatu*) and declares the nature of the offering (here olives, represented by the logogram, a twig with three leaves); next the expected or desired outcome, that the product (olive oil) will be obtained (*unakanasi*), assuredly (*aya*).

ya-sumatu, "O Deity"; this could be related to the word *s̱-m-n*, "oil", with *-n-* omitted, and referring to a goddess with an oil-connection.

aya: this might mean "any" (Ugaritic *ḵmr yn ay*, "any wine", KTU 1.23: 6), here "any oil"; or else "we shall collect oil, each"; or this is a particle of affirmation, Arabic *iy* (cp. English *aye*), "indeed", and this could be equated with *ipinama* in other versions of the offering formula. Note also I YA on **KN Za 10** (libation table from Knossos).

PK 1.7 (Clay tablet from Palaikastro)

SU MA TI ZA I TE

sumati: this matches the *sumatu* of **SY Za 2** above, and could be a word for "oil", though this feminine form is not attested elsewhere; *zaite* corresponds to Semitic *zait*, "olive", and the combination would produce "olive oil"; other occurrences of *zait* are presented in section **10**. Unfortunately, there is, apparently, a vertical stroke after the SU, which would join it to the last syllable in the previous line, hence TUSU; nevertheless, a scribal error of haplography could be invoked.

KN Zc7 (Small bowl from Knossos)

akanu zati = agganu zayti, "bowl of olives".

KN Zc 6 (Small bowl from Knossos) KRATIRI (Greek *krater*) "bowl".

KRATIRI ADIDAKITI PAKU NIYANU YUKUNAPAKU ….

Taking these two objects together (and they seem to be miniature versions of the larger vessels bearing their names) we look at Exodus 24:6: "Moses took half the blood and put it in bowls" (Hebrew *'agganot*, Septuagint Greek *krateras*). The mixing-bowl (*krater*) may have a Greek inscription: *niyanu* resembles *neion,* "new", though *yukuna* looks like a Semitic word

CHEESE

HT 54a.2 (Fragment of a tablet from Hagia Triada)
KU MI NA QE

Is this cumin (*kuminon)* or cheese (Eteocretan *KOMN,* "cheese", equivalent to Greek *turos*, in section **12** below)? The same combination of signs is found on *HT Wc 3914a-b* with a goat ideogram (AB22), and this suggests goat-cheese; and possibly the supposed QE is actually a depiction of a round block of cheese.

HT 47a.1-2, HT 119.3 (clay tablets from Hagia Triada)

KU BA NA TU

This would be "cheese"; Akkadian *gubnatu*, Aramaic *gûbnâ*, Hebrew *gbînâ* (Job 10:10).

AP Za2 (Two fragments of a cylindrical jar for offerings, from Apodoulou)

The latter part of the formula is preserved:

[U NA KA] NA SI . I PI NA MA [. . .] I **KU BA NA TU** NA TE [

] PI MI NA TE . I NA YA RE TA [. . .] QA

ikubanatunate: enclosed in this combination is a word for "cheese" (Akkadian *gubnatu*, and presumably that is what the Linear A spelling KUBANATU represents); see also *HT 47a.1-2* and *HT 119.3* above.

piminate: preposition *bi* ("in, as"), *minate* could correspond to Arabic and West Semitic *minḥat*, "gift, tribute, offering". Note also *minute* (Hebrew *mnḥwt*, plural), possibly "offerings" (HT 106.1, 86a.5, 95ab).

inaya: one faint possibility would be "my wealth"; Hebrew *'ôn*, "power, wealth"; or Hebrew *ḥên*, "grace, favour"; or Hebrew *'ayin*, "eye", Akkadian *inu*.

FISH

HT 6b (Clay tablet from Hagia Triada)

daki (Hebrew *dâgîm,* "fishes") together with a word *sama* (fish?).

HT 34 samuku (monogram) 100

If this is the word *samk*, "fish", attested in Arabic but not yet in West Semitic, then this strengthens the hypothesis that the fish-sign in the early alphabet was S (*samk*) rather than D (*dag*).[36] The number 100 may be compared with a later catch of 153 (John 21:11). However, another possibility is Ugaritic *ṣmq(m),* Hebrew *ṣimmuqîm*, "raisins" (2 Samuel 16:1).

(10) The Alashiyan cuneiform syllabary of Cyprus (Cypro-Minoan)

Alashiya was a name for Cyprus in the Bronze Age.[37] The term cuneiform is used here because the signs were not linear, but made out of wedges (especially in the texts from Ugarit). The readings of the following documents[38] are according to my inventory of Cretan and Cyprian syllabograms.[39]

207 ENKO Atab 002A+B *(Clay tablet from Enkomi)*[40]

ARASIYA (last word on second line of B) Alashiya?

OLIVES

186 PPAP Mvas 001 (*Bronze bowl with inscription*)[41]

SA PA SA ZE TI "bowl of olives"

sapa: Hebrew *sap*, "metal bowl" (also Ugaritic and Akkadian); cp. *supu*, pictured on Linear A tablet HT 31.

sa: Semitic *ṣa*, relative pronoun, here meaning "of".

zeti: "olive(s)"; common Semitic *zait*; cp. AKANU ZATI, "bowl of olives", in **KN Zc 7** (section **9** above).

180 CYPR Mvas 003 (*Bronze bowl, unprovenanced*)[42]

SI YA LI ZE TI | RA NO

zeti: "olives"; *li* might be the preposition "for"; *siya* is perhaps "my offering", Hebrew *ṣay.*

181 (*Bronze bowl*)[43]   ZE TO RA TI | E

zeto: possibly "olive", as in 180 and 186 above.

NAMES

215 RS 20.25 (*Double-sided clay tablet from Ugarit, Ras Shamra*)[44]

SIDE B (Selections)

[14] ILIMALIKI PIRU UMIMOTI|

Ilimaliki: Ugarit *Ili-malik* (Nahm).

Piru Umimoti: Ugr *bn ummt*, *bin ummi-moti*, "son of a dead mother" (Nahm).

piru: "son"; Aramaic *bir* is known as well as the normal *bar*.

[19] SASIMALIKI ZEPERI PA |

sasimaliki: Shamshi-Malik, cp Shamshi-Adad and the like (Nahm).

zeperi: Nahm finds the word "scribe" in this, and Sasimaliki as the signature of the recorder, citing an example at the end of a document from Ugarit: *Bçmn spr, "Bçmn the scribe"*. Alternatively: *samṣi-maliki*: "servants of the king" (Hebrew *sammaṣ*, "minister";

zeperi: could be Ugr *çbr* "team (of workers)", root *çbr*, "heap", "bind".

pa: could be "and" (et cetera?); or "here" (in attendance), Hebrew *po*.

(11) The Cyprian syllabary (for Greek and Eteocyprian)

There are West Semitic inscriptions from Cyprus, written in the Phoenician alphabetic script;[45] and one of them (from the reign of King Milkiyaton of Kition and Idalion) has an accompanying Cyprian Greek syllabic text (and the Phoenician text enabled George Smith to decipher the Cyprian script, in 1872);[46] and there are Eteocretan syllabic inscriptions which may be Semitic;[47] and there is one bilingual text, exhibiting Hellenic (Greek alphabet) and Eteocyprian (Cyprian syllabary) inscriptions.

196 *Greco-Eteocyprian inscription from Amathus*[48]

The two texts (Greek alphabetic and Eteocyprian syllabic) are inscribed on a slab of black marble, on which a statue had once stood, as a memorial to the Ariston named in the two inscriptions. There is no mention of produce, but a few significant samples are given here.

a-na . ma-to-ri: these are the opening words of the Eteocyprian line (sinistrograde, as is customary with Semitic writing); their counterpart on the Greek inscription (dextrograde, as is characteristic of Greco-Roman writing) is *(h)e polis*, "the city". Gordon connects *matori* with Hebrew *mador*, "dwelling place".

ana: for *hana,* "this" (Aramaic, Syriac); cp. Ugaritic *hn*, "behold.

ka-i-li-po-ti: this is the end of the text, and it has no counterpart in the Greek; Gordon parses it as the preposition *ka*, "as", and *ilipoti*, "a memorial monument", invoking Ugaritic *ilib*, literally "father-god"; so, we might simply say "as the family god" (represented by his statue): or, again from Ugarit, *ilbt*, "god of the house".

(12) The Greek alphabet (for West Semitic Eteocretan)

Cyrus Gordon has offered a concise summary of his decipherment of the Eteocretan texts, which were written with the Hellenic alphabet; he affirms that the Eteocretan language was a late development of the West Semitic "Minoan" language of the Bronze Age.[49]

DRE a (Inscribed stone fragment from Dreros)[50]

This is a short Eteocretan inscription (not mentioned by Gordon) using six Greek letters; the writing runs from right to left (sinsistrograde):

A T A E | A S "I bring a goat"

atae: this could correspond to the *atai* ("I bring") on the offering tables in the Bronze Age (see section **9** above).

as: "goat"; Hebrew *'ez* (but the vowel *a* appears in some other Semitic languages). Note that the Semitic sibilants (including *z*) were represented by Sigma.[51] Or is it simply "a gift" (Hebrew *'wṣ,* Arabic *'ws*)?

CHEESE

DRE 1 (*First Dreros Bilingual*)[52]

The direction of the Eteocretan text is sinistrograde (or sinistroverse, right to left) and has word dividers. The Greek version is boustrophedon and lacks separation of words.

Some of the words that can be salvaged from the wreck are:

LMO, l'immo, "to his mother" (or: 'to the Mother"?), Greek *matri*.

KOMN, apparently "cheese", Greek *ton turon*, accusative case of *turos*; *KOMN* also occurs in the third and fourth Praisos inscriptions;[53] Gordon argues that *KOMN* is a form of Semitic *gbn* (Arabic *gubn*, Hebrew *gbina*) with *g* represented by K, and *b* partly assimilated to *n* as *m*; Gordon did not notice that this word for "cheese" was also present in the Linear A inscriptions, as KUBANATU, equivalent to Akkadian *gubnatu*; furthermore, there seems to be a forerunner of *KOMN* in Linear A *KU MI NA QE,* where the supposed QE is possibly an ideogram of a round block of cheese, and the same combination is found with a goat sign (AB22), suggesting "goat cheese" (see section **9**, CHEESE).

Other indications that the Minoan and Eteocretan languages were one and the same:

kuro = KL "all"; *u =U* "and". Also, some shared culture features, notably the goddess holding a serpent in each hand (at Praesos).[54]

CONCLUSION

The foregoing account does not claim completeness, as it was only intended to be a sampling of the great variety of places (that is, writing systems) where ancient West Semitic texts could be found. One question that has been avoided is whether the language of Ebla, written in the Sumerian script, was East, North, or West Semitic.[55]

What has also been offered here is a contribution to the decipherment of some intractable West Semitic and Aegean scripts: the West Semitic logo-syllabary (**3**), the logo-consonantary (**4**), and the new syllabary of early Israel (**8**); also the Kaptarian Linear A syllabary of Crete (**9**), and the Alashiyan syllabary of Cyprus (**10**); and finally some new ideas for reading Eteocretan inscriptions. The use of the Greek alphabet for the West Semitic language of the Eteocretans is surprising, given the existence of the Phoenician alphabet, which was entirely suited to their needs. The same can be said of the Semitic "Minoans" and their adoption of the Cretan syllabary (Linear A), with its scope for a mere dozen consonants, when their language had at least twenty-two, and possibly twenty-seven (as shown by the long and short Canaanian alphabets). Incidentally, this phenomenon should be kept in mind by anyone attempting to describe the phonology of the "Minoan" language.[56]

Eteocretan should mean *echt* (or true) Cretan; but accepting the Semitic Eteocretans as the original Cretans or Kaptarians is questionable: possibly Hellenes preceded the Semites, but were subdued by them for a while, under West Semitic rulers such as the archetypal Minos, and then the tables were turned.[57] In this regard, Homer's list of ethnic groups in Crete (Odyssey 19.172)[58] is either instructive or inscrutable: "Akhaians, great-hearted Eteokretans, Kudonians, Dorians, Pelasgians".

And he mentions Knôsos as the great city where Minôs reigned; but he does not say in which group Minos belonged.

Are Akhaians placed first, because they were there first? Strabo (around the beginning of the current era, CE) reports that the Dorians occupied the east of Crete, the Kudonians the west, and the Eteokretans the south, at Praesos where the temple of Diktian Zeus was.[59] The Akhaians (Myceneans?) and Pelasgians have disappeared. Perhaps the mysterious Pelasgians (possibly proto-Greek) were the indigenes of Crete; they may have invented the syllabary, under Phoenician influence.

Traditionally, Kadmos (whose very name reveals him as a Semite from the East, Phoenician *qadmu*) taught the art of writing to the Greeks. This information should be applied to the invention of the pictophonic syllabary in the Bronze Age in Crete, rather than the alphabet in the Iron Age in Greece, though it is true that in each case the Phoenicians provided the writing materials: first, the idea of a simple acrophonic syllabary with pictophonic characters (as employed in Gubla, Greek Byblos); and second, an alphabet (the Phoenician consonantary), to which the Greeks added vowel-letters, using consonant-signs that were superfluous to their purposes (Alpha the glottal stop became A, for example). But it was in Crete that the Phoenicians taught *Greeks* to write syllabically. It seems that the two early writing systems of Crete (emanating from Knossos in the north and from Phaistos in the south) are based on a Hellenic language[60] (and this idea has been tested in the inventory of Cretan syllabograms appended here). Minos and his dynasty were interlopers, perhaps from the time of the Hyksos empire in Egypt, when Phoenicians were scouring the world in their ships.

The term "Minoan" was coined by Arthur Evans; it is like "Victorian", referring to an era and a culture, and named after a monarch; and perhaps the Semites of Crete did consider themselves to be

Minoans in some sense; and somehow, they became Eteocretans, but they were really Neo-Cretans, and their genetic heritage may still linger in the population.

Nanno Marinatos has produced a book (2010) in which she argues that "palatial Crete" (Bronze-Age Kaptar) belonged in the Near East, comprising Anatolia, Syria, the Levant, and Egypt. She quotes Evans at the head of her Introduction: "Throughout its course Minoan civilization continued to absorb elements from the Asiatic side". Marinatos reminds us that Kothar, the West Semitic god of arts and crafts, had his abode in Kaptar (and he was also at home in Egyptian Memphis, as Ptah, and perhaps in Mesopotamia as Heyan, if that is Ea/Enki).[61] Accordingly, Marinatos proposes a religious *koine* of the Mediterranean world, and if Minoan religion was West Semitic, like the Minoan language, then she must be right. Deities and details of the religion have been set aside here, but there is no doubt that the West Semitic pantheon can be found in the Kaptarian documents.[62]

The possibility that one person could handle all these writing systems seems preposterous, and so the reader may justly be suspicious of what has been presented here; but this is the summation of sixty years of research on the scripts of the Mediterranean world. My desire is to give notification of all this before my time is up, and try to move the material from my websites into permanent print.

Transcription System

'(Aleph) H̱ (Het, Ḥ, guttural) Ḵ (Kh, palatal fricative) Ṭ (Tet) '(Ayin) S (Samek, Sin) Ç (Sadey, ts, ss) S̱ (Shin) Ṯ (Th).

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Notes:

[1] "Canaanian" is used here in preference to the heavily loaded and mispronounced "Canaanite" (which, like "Amorite", carries negative associations in the Bible); the name "Canaan" (Kana'an, which should be pronounced with stress on the second of its three syllables in academic discourse) will be understood as covering the Levant (Syria, Lebanon, Israel) or "Syria-Palestine". The term "Phoenician" tends to be used with reference to the West Semitic people of the Iron Age, in the Lebanon region (notably Byblos, Tyre, Sidon), and in their colonies around the Mediterranean Sea; but it can also be applied to the seafarers of the Bronze Age, who even plied the Atlantic Ocean; in that period, the Egyptians spoke of a *f-n-kh* people. The term "Mediterraneans" may also be used for the seafarers who carried West Semitic dialects and scripts (writing systems) into the wider world (but the Odyssey of Homer implies that the Hellenes also went on long-distance voyages). Albright (1961) has given us a concise history of the West Semitic peoples (Canaanians, Phoenicians, Amoreans, and Arameans, in my terminology) including the Hyksos, who were called Phoenicians by Manetho (and Albright, 335, accepted this identification) and who occupied the Nile Delta in the Second Intermediate Period.

[2] Rainey 1996 (4 volumes); Huehnergard 1987, 1989.

[3] Steiner 2011; on p. 9 he cites other examples (NW Semitic incantations in an Egyptian medical papyrus of the 14th century BCE, and Aramaic texts in Demotic script).

[4] Duhoux 1982: 255-257; Davis 2014: 185-187. Keftiu is Kaptara, that is, Crete; see section 9.

[5] Haring 2015. Colless: http://cryptcracker.blogspot.co.nz/2015/11/h-l-h-m-order-of-alphabet-letters.html

[6] Mendenhall 1985: 19, Table 3; Colless 1992: 58-60 (table of signs); 1998:34-35; 1997: 56-57.

[7] Schwartz 2010 for description and discussion (he fails to recognize the West Semitic syllabic script, relying too heavily on comparing the forms known from the Byblos texts), and pictures of the four pieces; and for coloured photographs: http://sites.krieger.jhu.edu/ummelmarra/photos/ Colless: http://cryptcracker.blogspot.co.nz/2007/03/oldest-west-semitic-inscriptions-these.html

[8] This remarkable object was brought to light in Jamaica (reported as "dug up in the bush"); it came into the possession of Stephen Izett Solomon, who received independent advice from an Israeli expert that the beaker and also its inscription are probably ancient; the writing is West Semitic, specifically syllabic. Detailed photographs of the text are collected here: https://goo.gl/photos/S7n7hQMJZvba2kqXA Colless: http://cryptcracker.blogspot.co.nz/2012/05/phoenician-bronze-cup-in-jamaica-below.html Documents such as this cup and the bowl in section 5 come without an archaeological certificate, but they are invaluable and must be taken into account (for instance, they both have the West Semitic word for wine as WN instead of the later

YN); similarly, the Goetze or Grossman seal (purchased from an antiquities dealer in London and of unknown provenance) has an important little text, and although Sass (1988: 99) rejects it as a forgery, it is now in the corpus of Bronze-Age WS documents (Hamilton 2006: 397).

[9] Sass 1988:104, and Fig. 285

[10] Dunand 1945: 72 (drawing), plate VIII (photograph), Mendenhall 1985: 113-119, Colless 1994: 72-78.

[11] Darnell et al 2005, 116-123 (photographs; the drawings are slightly faulty), Hamilton 2006: 324-330 (324 and 327, drawings), Colless 2010: 91 (95, drawings). For a detailed discussion, see:
http://cryptcracker.blogspot.co.nz/2009/12/wadi-el-hol-proto-alphabetic.html

[12] Darnell 2002: 134-135.

[13] This noteworthy clay bowl (180 mm x 80 mm) is now in the possession of Wayne French, at Avondale College of Higher Education in New South Wales. Its ultimate provenance is uncertain, but it was acquired in the Middle East by Jack Colheart (USA) in the 1950s. The label that came with it said: "This ancient bowl, in-scribed in Phoenician script, was discovered at Byblos, 32 km north of Beirut, Lebanon". Photographs, draw-ing, and discussion are available here:
https://www.dropbox.com/sh/j5pdoq3qfmqbn6y/AAAuJc_Xb4R0hLqhpb9u5Y6la?dl=0
Also, Colless:
http://cryptcracker.blogspot.co.nz/2016/08/byblos-bowl-inscription.html

[14] Sass 1988: 12-16.

[15] Colonna D'Istria 2012.

[16] https://sites.google.com/site/collesseum/cuneiformalphabet

[17] Dietrich and Loretz 1988:161-168, and 270 for an inventory of its letters.

[18] https://sites.google.com/site/collesseum/cyprianweight

[19] On the new syllabary in early Israel, see Colless 2013: http://asorblog.org/?p=6692, and http://cryptcracker.blogspot.co.nz/2014/04/early-hebrew-syllabary.html.

[20] Analysis and depictions of the two sides of the Beth Shemesh ostracon, Sass 1988, 64-65, and figures 169-174; also, the Izbet Sartah ostracon, 65-69, and figures 175-177; for the Phoenician and Hebrew letters, see his Table 5. See also Colless 1991: 46-49, and https://sites.google.com/site/collesseum/winewhine

[21] Documents relating to Kaptar and Keftiu are examined in Davis 2014: 182-188,

[22] For an overview of the scripts, with tables of signs, see Davis 2014: 143-157; the Phaistos Disc and the Arkalokhori Ax (which has the same pictorial script as the Disc, or similar) are consigned to his footnote 812; John Younger provides tables of characters: http://www.people.ku.edu/~jyounger/LinearA/ABgrids.html
Colless:
https://sites.google.com/site/collesseum/cretanscripts

[23] Gordon 1971: 131-141, for a concise account of the decipherment of Linear B by Michael Ventris and others; Ventris and Chadwick 1973; Duhoux and Davies 2008.

[24] Gordon 1971:125-131, on the Cyprian syllabary.

[25] Gordon 1971: 141-171, on Linear A and his own part in its decipherment. His theory that Linear A inscriptions record a West Semitic language (Gordon 1966, 1975) will be extended here, with new identifications of vocabulary and syntax. In a recent attempt to characterize the language of Linear A texts (Davis 2014:143-192, "Framework for investigating Linear A"; 193-278, "Linguistic analysis of Linear A") Davis (190) denies that the language could be Semitic, and alleges that Gordon's "etymological method" of decipherment failed and is discredited. In the end, Davis (277) accepts that the word order in the offering formula could be Verb Subject Object, and therefore Semitic must not be excluded from consideration. In his own examination of the formula (269-276) he does not realize that the opening sequence (a ta i 301 wa ja) is the verb, the subject, and the object combined as a unit. The universal refusal to acknowledge my recognition of LA sign 301 as SO (the Linear B sign for SO is obviously a reduced image of the adz glyph, P46) is a serious impediment to understanding this sequence. The subject is "I", built into the verb atai, "I bring"; the object is sowaya, "my offering", as explained in my comments on the examples of the formula presented here. With hindsight, many of his speculations are misplaced, notably that the dedicant is named in the formula, but the receptacles were shared, and so the giver is always "I". In analysing the phonology, Davis seems to assume that the language of the Linear A inscriptions was the basis of the formation of the syllabary; but accepting that the language of the texts is West Semitic, the Cretan syllabary was not designed for it, since it only has a single S-sign for all the Semitic sibilants, and no signs for the "gutturals".

[26] The corpus of Cretan pictophonic ("hieroglyphic") inscriptions is edited in Olivier and Godart 1996 (Corpus); p. 19 has a table of possible matchings for various signs in the three systems (P, A, B).

[27] Duhoux 1977; Fischer 1988; Colless:
https://sites.google.com/site/collesseum/phaistosdisc

[28] Colless:
https://sites.google.com/site/collesseum/phaistosscript

[29] Fischer 1988 makes a case for a Hellenic origin for the two Cretan scripts (Phaistos and Knossos).

[30] Godart and Olivier 1976-1985 (Recueil,"GORILA") 5 volumes; also Consani and Negri 1999 (transcriptions, and

[31] Davis 2014: 319-390.

[32] https://sites.google.com/site/collesseum/cretanscripts
http://cryptcracker.blogspot.co.nz/2017/06/aegean-syllabic-signs.html

[33] http://cryptcracker.blogspot.co.nz/2016/09/semitic-crete.html

[34] Gordon 1966: 27.

[35] Mendenhall 1985: 36.

[36] Contra Hamilton 2006, 61-75, esp. 62, n. 50, where the Samek fish is denied any existence; this can be refuted by the presence of a fish in the Samek position in the abagadary on the Izbet Sartah ostracon, but this defining detail is not noticed by the supporters of D as dag (Sass 1988: figures 175-177); the true D (Dalet, door) occurs together with the fish on Sinai 376 (Sass 1988: figures 91-93).

[37] Evidence for Alashiya summarized: https://en.wikipedia.org/wiki/Alashiya

[38] My transcriptions of various Alashian syllabic texts are provided in the Creto-Cyprian section of: https://sites.google.com/site/collesseum/

[39] Tables of Cyprian syllable-signs and sound-values: https://sites.google.com/site/collesseum/cyprusscripts

[40] 207: Olivier 2007: 282-319; Ferrara 2013: 106f, 244-247, Plates XXVIII and XXIX.

[41] 186: Olivier 2007: 259; Ferrara 2013: 95 (but no illustration).

[42] 180: Olivier 2007: 253; Ferrara 2013: 91f (description), 226 (depiction).

[43] 181: Olivier 2007: 254; Ferrara 2013: 92 (description), 227 (depiction).

[44] 215: E. Masson 1974: 29-46, figs.16, 17; Olivier 2007: 393; Ferrara 2013: 111-112 (description), 258-261 (depiction); Nahm 1981: 59-63 for a credible transcription and interpretation, which is not acknowledged by Ferrara, but his article (with which Nahm had assistance from Chadwick and Neumann) should be recognized as the breakthrough in deciphering this script; references to earlier groundbreaking studies are found in his note 1; in an addendum he acknowledges the work of Jean Faucounau, who has also made a considerable contribution to the solution of this problem.

[45] Gordon 1966: 7, n. 11,

[46] Gordon 1971: 126-128.

[47] Gordon 1971: 129; O. Masson 1983: 85-87, 201-209.

[48] O. Masson 1983: 206-209, and 208, Figure 57 (drawing); Gordon 1966: 5-7, and Plate 1 (drawing); Gordon 1971: 130-131.

[49] Gordon 1971:165-169; 1975: 148-152.

[50] Duhoux 1982: 112, and Fig. 28 (a drawing; the object is lost).

[51] Gordon 1966: 18, paragraph 57.

[52] Gordon 1966: 8-9, and Plate II (drawing); 1975: 149 (with a drawing); Duhoux 1982: 37-54, 312 (photograph), 313 (drawing).

[53] Gordon 1966: 12-13; see Gordon 1975: 149-153 for his later research on the Greek and Eteocretan inscriptions of Dreros and Praisos.

[54] Duhoux 1982: 22-23, presenting several details they had in common.

[55] See the various essays in Eblaitica, Gordon et al 1987.

[56] Davis 2014: 193-268 (Linguistic analysis of Linear A).

[57] Marinatos 2010: 1-8 for a historical reconstruction of the Kaptar period.

[58] This and other ancient pieces of evidence are assembled in Duhoux 1982 :9-12.

[59] Duhoux 1982: 10.

[60] Steven Fischer (1988) takes this stance, but he calls the Minoans "Greeks" ("East Hellenes", p. 69).

[61] Marinatos 2010: 1; Gibson 1978: 54-55, Wyatt 1998: 88-90, for the Ugaritic myth (KTU 1.3, vi, 5-20) showing Kothar as the deity connecting the various realms of the Near East, also including Gubla (Byblos), and possibly Keilah (Gibson, citing1 Samuel 23:1, which has the Philistines attacking this town in Israel) or simply "the summit" (Wyatt).

[62] Gordon 1966: 31; Best 1989: 12-24.

glossary); and John Younger's transcriptions and commentary: http://people.ku.edu/~jyounger/LinearA/#9

CEHAO's New Book: Flaminni & Tebes (eds.), *Interrelaciones e identidades culturales en el Cercano Oriente Antiguo*

More than 40 years after its birth, approaches from the world-systems and approaches of the core-periphery links still provide an adequate framework for the analysis of political, economic and cultural interrelations of all kinds, both in modernity and in the ancient world. Although this theory was initially postulated to explain the emergence of capitalism in the modern world, later reviews agglutinated under the label of "systems-world analysis" incorporated the study of pre-modern societies, and especially of cultural interrelations and identities emerging in them. In this book, an interdisciplinary research group examines various case studies of ancient Near Eastern societies from Egypt and the Levant to Anatolia and Crete from the 4th to the 1st millennium BC, focusing on inter-regional relations at various scales and in how they affected the daily life of the peoples involved in them. The book contributes, on the one hand, to an original response to significant historical questions about the interrelationships and cultural identities that emerged at key moments in the history of the ancient Near East (when did they originate, what elements were transferred, how did they influence in contemporary communities? What are the particularities of such identities?) and, on the other hand, the much broader debate about the role played by exchanges in the development of social complexity in pre-modern societies.

The work is the result of the joint work of a research group based at the Instituto Multidisciplinario de Historia y Ciencias Humanas (IMHICIHU) of the Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) of Argentina and other researchers who joined in the process. The project, entitled "Center and Periphery in the Near East: inter-societal dynamics of relationship in the Nilotic, Levantine and Eastern Mediterranean (IV to I millennium BC)", was funded by the Agencia Nacional de Promoción Científica y Tecnológica (PICT Raices 2011-0552).

Interrelaciones e Identidades Culturales en el Cercano Oriente Antiguo

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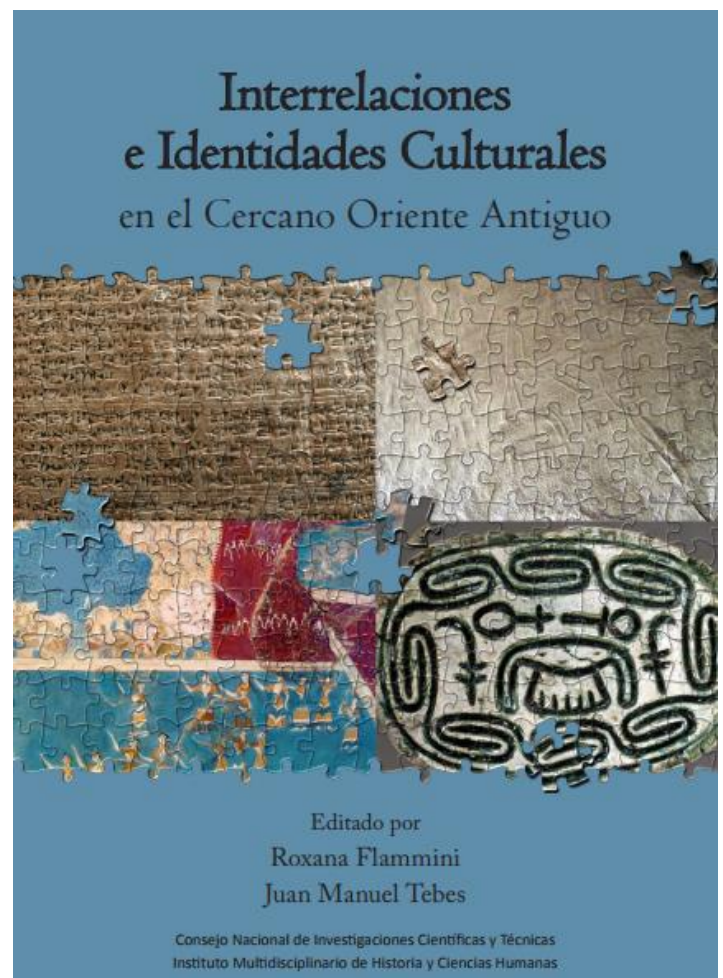
The Socio-political Organisation of Southern Jordan during the Iron Age: a GIS analysis

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The socio-political organisation of southern Jordan during the Iron Age has been defined as an early state. The region has been described as a kingdom with a capital Buseyrah, a defined geographical area defended by watchtowers and fortresses and shared ceramic, linguistic and religious traditions (Tebes 2010: 146). This model was first proposed by Glueck in the 1930s (1935: 64). Although Glueck's thirteenth century BCE date for the origin of the kingdom was revised following Bennett's excavations in the 1960s and 1970s to the eighth century BCE (Bennett and Bienkowski 1995, Bienkowski 2002) the theoretical framework used in interpreting the archaeological evidence remained the same.

More recent scholarship (Levy, Najjar and Ben-Yosef 2014:981-986, Tebes 2014: 16) has questioned this traditional explanation. These authors have emphasised the importance of regional interactions in defining the socio-political organisation of the area. The current evidence for regionalism in southern Jordan during the Iron Age is limited to typological differences in kraters (Bienkowski and Adams 1999: 152) and inter-site differences in the proportions of vessel types (Whiting 2002: 222).

Identifying regionalism using geospatial data

Regionalism can be investigated using geospatial data. Archaeological investigations of regionalism have employed Thiessen polygons (Wilkinson, Ur and Casana 2004), nearest neighbour analysis (Hodder and Orton 1976, Hill 2000), K means (Savage and Falconer 2003) and Ripley's K function (Bevin and Conolly 2006, Winter-Livneh *et al.* 2010). Territorial spheres of influence identified using Thiessen polygons are based on "central place theory" (Renfrew and Bahn 1991: 159). These are simple partitioning methods used to identify settlement patterns in regions with evidence of a settlement hierarchy. Clustering techniques are a more appropriate method for investigating settlement patterns in areas with limited evidence of a settlement hierarchy. Evidence for clustering using nearest neighbour analysis is defined by intra-site distances that are less than the average intra-site difference assuming a random distribution (Clarke and Evans 1954). Inferences regarding territorial spheres of influence using this analysis are biased by the influence of the shape of the study area (Conolly and Lake 2006: 166). This can be minimized using K means. K means is an iterative analytical process whereby clustering using distance measurements continues until a user defined

number of clusters is reached (Kintingh and Ammerman 1982: 39). Both nearest neighbour analysis and K means are based on distances between first degree neighbours. They cannot identify spatial patterns in the archaeological record that are influenced by localised differences in scale (Bevin and Connolly 2006: 218). Ripley's K function (Ripley 1977) is an analytical technique that accounts for the influence of local changes in scale by summarising spatial dependency over a range of user defined distances.

Nearest neighbour, K means and Ripley's K function are global analytical techniques. The results from these analyses are derived from all the geospatial data in the sample and therefore they only detect overall patterns in large regions (Getis and Ord 1992: 190). They detect the presence of clustering but not the geographical location of clusters (Scott and Janikas 2010: 33). Hot spot analysis using the Getis- Ord G_i identifies localised areas of spatial auto-correlation that cannot be identified using global measures (Ord and Getis 1995: 288). This is achieved by calculating the concentration of weighted points within a defined distance (Getis and Ord 1992: 190). The hot spots identified using this algorithm are positively auto-correlated clusters indicated by statistically significant higher Z scores than those that would be expected if the features were randomly distributed (ESRI n.d.a). Despite the advantages of the Getis-Ord G_i in furthering the understanding of regional settlement patterns its application in archaeological is limited (Premo 2004, Barge et al. 2015).

Inter-visibility and viewshed analysis
Inter-visibility analysis which determines the visibility between points (Kim et al. 2004: 1019) uses digital elevation maps (DEMs) to determine the line of sight between locations. This analysis is based on the binary division of sites into visible or not visible. It differs from viewshed analysis which determines the area visible from a single point (Kim et al. 2004: 1019). Both inter-visibility (Briault 2007)

and viewshed analyses (Llobera et al. 2004, Jones 2006, Williams and Nash 2006) have been used to examine archaeological features in the landscape. The combination of these two techniques can be used to calculate the total number of sites in a viewshed that can be visualised from a target site (ESRI n.d.b). This combination has the potential to provide additional insights into settlement patterns that may not be detected using clustering techniques alone.

Investigating regionalism in Iron Age southern Jordan using geospatial data
Nineteen excavated Iron Age sites in southern Jordan have been published (Glueck 1940, Hart 1989, Fritz 1994, Bienkowski 1995, Lindner et al. 1996, Bienkowski 2002, Whiting et al. 2008, Bienkowski 2011, Beherec et al. 2014, Ben-Yosef et al. 2014, Levy, Najjar, Higham et al. 2014. Smith et al. 2014a, Smith et al. 2014b). This number of sites cannot be used to generate a meaningful analysis of the socio-political interactions in the region using geospatial data. Regional archaeological surveys in southern Jordan have identified more than six hundred Iron Age sites based on the presence of diagnostic sherds (MacDonald 1988, Hart 1989, MacDonald 1992, Levy et al. 2001, Levy et al. 2003, MacDonald et al. 2004, Barker et al. 2007, Hauptmann 2007, Smith 2009, MacDonald et al. 2012, Parker and Smith II 2014).

This report investigates the socio- political organisation of Iron Age southern Jordan using the find sites identified in these surveys. The area under investigation is defined by the Wadi 'Arabah in the north, the wadi 'araba in the west, the Wadi al-Hisma in the south and the edge of the Jordanian plateau in the east (Fig. 1).

Method
Data
The data for this analysis was obtained from systematic archaeological surveys of the region published between 1988 and 2014 (MacDonald

1988, Hart 1989, MacDonald 1992, Levy *et al.* 2001, Levy *et al.* 2003, MacDonald *et al.* 2004, Barker *et al.* 2007, Hauptmann 2007, Smith 2009, MacDonald *et al.* 2012, Parker and Smith II 2014). The combined survey area accounts for more than fifty percent of the study area (Fig. 1).
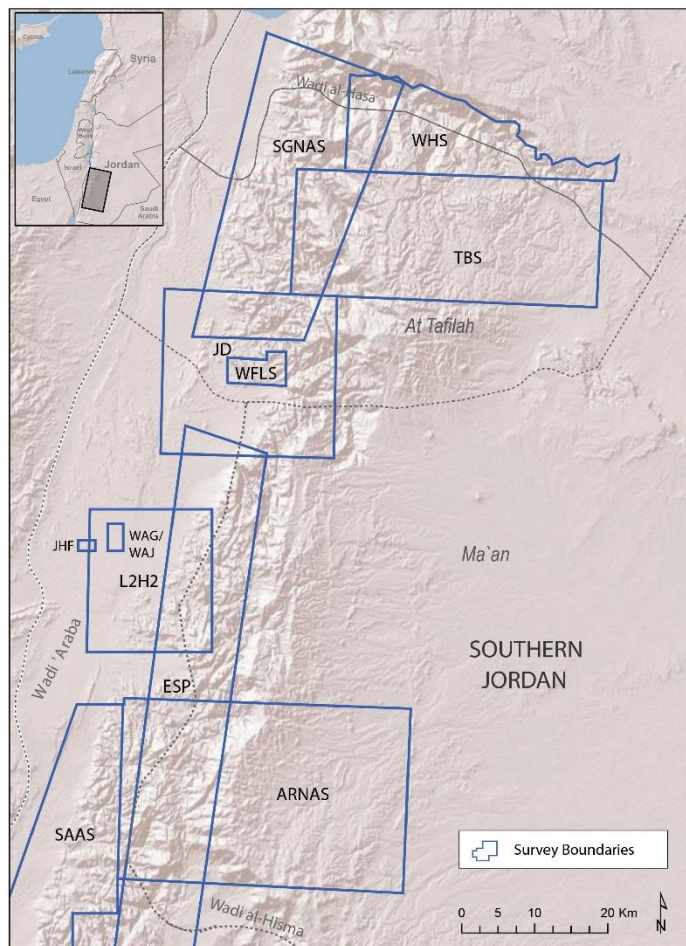
Figure 1. (ESRI World Shaded Relief Map)
Approximate boundaries of the surveys used in this report.

SGNAS: Southern Ghors and Northest Arabah Survey, WHS: Wadi el-Hasa Survey, TBS: Tafila-Busayra Survey, JD: Deutches Bergbau Museum Survey, WFLS: The Wadi Faynan Landscape Survey, WAG/WAJ: Wadi al-Guwayb and Wadi al-Jariya Surveys, JHF: Jabal Hamrat Fidan Survey, L2H2: Lowlands to Highlands survey, ESP: Edom Survey Project, ARNAS: The Ayl to Ras an-Naqab Survey, SAAS: The Southeast Araba Survey

Inconsistencies in the data were clarified by discussions with the original surveyors and comparisons of topographical descriptions with imagery from Google earth® and topographical maps. For one site this was not possible. This was excluded from the analysis. Sites were recorded using different geographical co-ordinates, Palestine grid, latitude and longitude and the Universal Transverse Mercator. All co-ordinates

were converted into a decimal system. Surveys overlapped and some sites were recorded more than once. When duplication was identified only one set of co-ordinates was recorded.

The chronology used in differentiating Iron I and Iron II was the simplified version of the Palestinian Iron Age as proposed by Bienkowski (1992a: 7) which dates Iron 1 from 1200-1000 BCE and Iron II from 1000-569 BCE. Find sites were defined by the presence of diagnostic sherds. There is no definitive chronology for Iron Age ceramics in southern Jordan. The dating of sherds identified in the surveys was based on comparisons with finds from neighbouring areas. The surveys identified six hundred and thirty-eight Iron Age sites, fifty-four Iron I sites, five hundred and sixteen Iron II sites and eighty-eight undefined Iron Age sites. Twenty Iron I sites had evidence of occupation during Iron II. The eighty-eight undefined Iron Age sites were excluded from the analysis.

Bienkowski (1992b: 258) has questioned the validity of dividing find sites in southern Jordan based on ceramic finds into Iron I and Iron II arguing that all should be classified as Iron II. This argument is based on the finds from a single sounding conducted at Ash-Shorabat. This site originally dated to Iron I (MacDonald 1988: 169-170) was subsequently re-dated by Bienkowski and Adams (1999: 157) to Iron II. Bienkowski's criticism is refuted by radiocarbon dates from Khirbet al-Ghuweiba. The original dating of this site to Iron I (MacDonald 1992: 73) has been substantiated by radiocarbon dates (Ben-Yosef *et al*. 2014: 848). The author accepts the dating of the ceramic finds as defined by the publishers of the surveys.

Analytical techniques
The data was analysed for clustering using the Optimised Hot Spot Analysis tool in ArcGIS 10.3.1. The algorithm used in the analysis is the Getis-Ord G_i. In this analysis, the weights and optimal

distances used for defining statistically significant clusters are automatically generated. Viewshed and inter-visibility analyses were performed using the Spatial Analysis tool in ArcGIS 10.3.1. In calculating these results, it was assumed that the viewer had a height of 1.5 meters and was standing. These analyses incorporated the site data combined with a DEM of the region produced by METI and NASA (ASTER 2004).

Results

The hot spot analysis of Iron I sites revealed two statistically significant clusters (p< 0.05). A northern cluster extending southward from Wadi al-Hasa and a southern cluster extending northward from Ras an-Naqb (Fig. 2). In Iron II three statistically significant clusters (p< 0.05) were identified in the northern region (Fig. 3). The largest of these incorporated the mining sites in Faynan. A second cluster which included the site of Buseyrah was located northeast of Faynan. A third cluster was identified north of Buseyrah. A single cluster was identified in the south of the study area in Iron II. This Iron II southern cluster although larger than the cluster identified in Iron I was in the same geographical area.

The combined viewshed and inter visibility analyses revealed limited inter-site visibility in both the northern and southern regions in Iron I with inter-visibility of sites when present confined to a single neighbouring site. A similar pattern was evident in the southern cluster in Iron II (Fig. 4). This contrasted with the northern region in Iron II were an arc of sites with large fields-of-view of up to one hundred other sites was found extending from the southern border of the cluster associated with Buseyrah to the eastern and south-eastern border of the cluster associated with Faynan (Fig. 4).
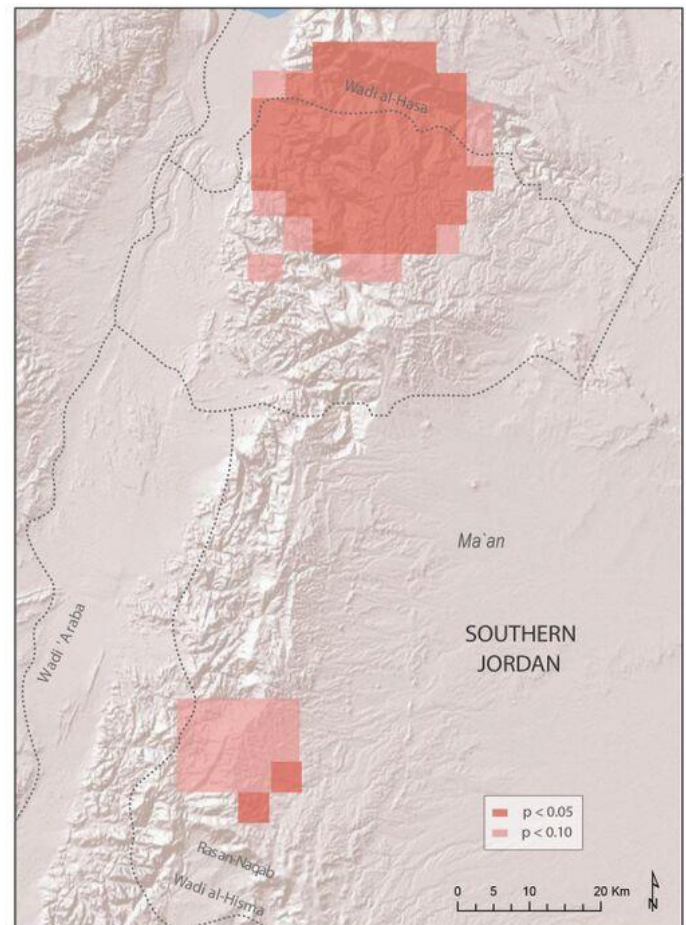
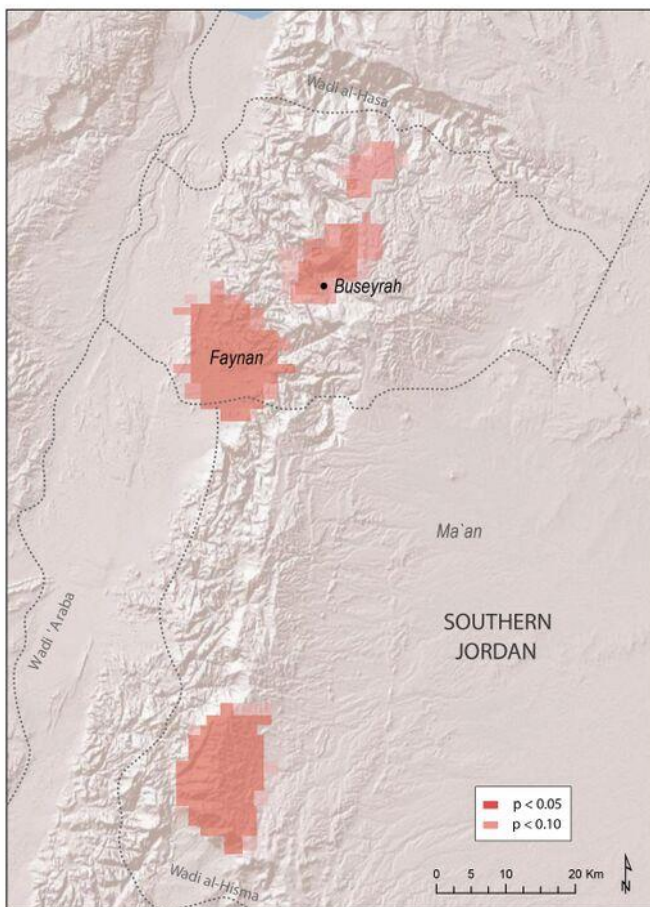**Figure 2.** (ESRI World Shaded Relief Map)
Iron I clusters.

Discussion

Limitations of the study

This study has investigated the use of hot spot, viewshed and inter visibility analyses in furthering our understanding of the socio-political organisation of southern Jordan during the Iron Age. The results are limited by the unknown association between surface finds and use location, the absence of a definitive ceramic typology for Iron Age southern Jordan and the difficulties associated with identifying nomadic populations in the region using ceramic finds.
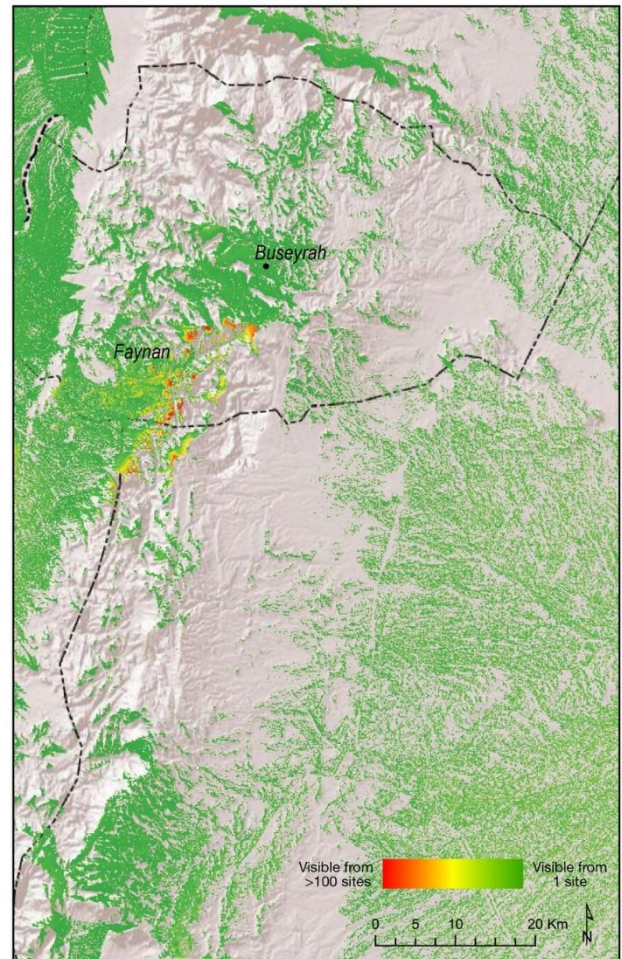
The relationship between ceramic finds sites and their use location is dependent on the relationship between use and discard locations and the relationship between discard locations and find sites. The association between use and discard locations is inversely related to occupational intensity with the association decreasing with increasing population density (Schiffer 1992: 162). A small to medium occupational density can be inferred for Iron Age settlements in southern Jordan based on the size of excavated sites (Bienkowski 2002: 39, Whiting *et al.* 2008: 255, Bienkowski 2011: 8, Smith *et al.* 2014a: 276). A direct relationship between use and discard location of finds is therefore probable. The relationship between discard locations and find sites is more difficult to ascertain due the effect of post-depositional processes. The present geomorphology of southern Jordan differs from that of the Iron Age. Agricultural activities in the

Figure 4. (ESRI World Shaded Relief Map)
Viewshed analysis: Iron II sites

Figure 3. (ESRI World Shaded Relief Map)
Iron II clusters.

highlands evident today, past use of the desert

flood plains for agriculture (Ramsay and Smith II 2013, Contreras *et al.* 2014), copper mining in the wadi 'araba (Hunt *et al.* 2007:1331), seasonal flooding of the wadis and wind blow outs have all modified the landscape. The effect of these post-depositional processes on discard locations is unknown. The possible bias associated with these processes has been addressed by investigating site densities rather than individual sites.

The dating of find sites used in this study was based on the identification of diagnostic sherds. There are limited textual references to Iron Age southern Jordan[1] and radiocarbon dates confined to a specific number of sites.[2] The dating of sites used in this report was based on comparisons of diagnostic sherds with ceramics excavated from sites in neighbouring areas. This is a subjective dating technique. In the absence of a definitive Iron Age ceramic typology for southern Jordan it is the

only method available for dating the ceramic find sites used in this report.

The importance of nomadic populations in the socio-political organisation of Iron Age southern Jordan has been highlighted by Levy (2009). The surveys used in this analysis identified find sites based on ceramic sherds. The paucity of ceramics excavated from the Iron Age burials at Wadi Fidan 40 (Beheric *et al.* 2014: 698-703) suggests that the nomadic population of Iron Age southern Jordan were aceramic communities that would not have been identified by these surveys. The results from this analysis are only valid for ceramic communities and do not address the socio-political organisation of aceramic nomadic communities living in the region.

Evidence for regionalism

The results from this study indicate that settlement in southern Jordan during Iron I was localised to two areas, a northern region extending southward from wadi al-hasa and a southern region located at the southern border of the Jordanian plateau. The find sites in both regions had limited inter-site visibility. Inter-site visibility is suggestive of the existence of organised interactions between settlements. Their absence in Iron I suggests that these two spatially distinct Iron I clusters were populated by semi-autonomous communities.

The northern/southern divide evident in Iron I was also present in Iron II. Although the size of the settlement cluster in the southern region increased in Iron II, the Iron II sites in this area were located in the same geographical area as those identified in the Iron I cluster. The limited inter-site visibility between these sites in both Iron I and Iron II suggests that the socio- political organisation of the southern region remained the same.

In Iron II there were differences in the settlement pattern in the north. The single Iron I cluster south of Wadi el-Hasa was replaced by three clusters. The limited inter-site visibility that characterised the northern sites in Iron I was replaced by a series of sites with large fields-of-view extending from the

eastern and south-eastern border of the southern cluster associated with Faynan to the southern border of the cluster associated with Buseyrah. Sites with large fields-of-view are arguably defensive. The results suggest the existence of an arc of defensive sites linking Faynan with Buseyrah The Iron II sites in Faynan were associated with the large-scale copper mining that occurred in this area during the Iron Age. This industrial-sized operation[3] must have been reliant on a complex infrastructure for supplies of food and fuel. It is questionable whether the Iron Age agricultural fields in nearby wadi faynan (Barker *et al*. 2007: 283) would have had the potential to supply these requirements. Additional food supplies and fuel were probably sourced from the agricultural areas in the north. It is arguable that this proposed trade in commodities would have acted as a stimulus for the development of a political economy (Earle 2002:9).

Buseyrah is a mere eighteen kilometres from Faynan. This was a wealthy stratified settlement as evidenced by its monumental architecture (Bienkowski 2002: 69-50; 199). It has been suggested that Buseyrah's wealth was a result of its role in the overland trade route from the Arabian Peninsula (Bienkowski and Van der Steen 2001: 24). There is no evidence to support this argument. The Iron Age overland trade route from Tayma is more likely to have bypassed southern Jordan by transporting goods to Mesopotamia via the north-eastern city state of Hindanu (Magee 2014: 267). Buseyrah's wealth can be explained by its relationship with Faynan as evidenced by its geographical proximity and the spatial relationship between what can be inferred as defensive sites located on the southern border of its settlement cluster with the eastern and south-eastern borders of the cluster associated with Faynan. Although the exact temporal relationship between these sites is unknown their spatial continuity is suggestive of a contemporaneous political association.

The results of this analysis suggest that Buseyrah's administrative and political influence during Iron II was limited to two regional clusters located in the north of the study area. Its relationship with the smaller cluster further north cannot be ascertained with certainty. The absence of defensive sites as indicated by limited inter-site visibility between the smaller northern cluster and the cluster associated with Buseyrah suggests that this far northern cluster represents an autonomous settlement rather than a satellite settlement. There is evidence for the existence of a political economy administered by Buseyrah but the size of its settlement cluster suggests that this economy functioned within the context of a localised traditional system (Blanton *et al*. 1993:210) not that of an early state.

This investigation has revealed geospatial evidence for regionalism in southern Jordan during the Iron Age. Two distinct regional entities were identified in Iron I. In Iron II three regional entities were identified in the north and a single entity in the south. The data suggests that the Iron II sites at Faynan and Buseyrah were related but that the other clusters although linked by shared cultural ties were in both Iron I and Iron II regional political entities.

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Notes:

[1] Iron Age textual references relating to southern Jordan include a small corpus of Neo-Assyrian, Edomite and Arabic inscriptions and seal impressions (Luckenbill 1926:262; 287, Luckenbill 1927:119; 314; 340, Bienkowski 2002:431, Zuckerman 2004:249, Rollston 2014:969, van der Veen 2014:213, van der Veen and Bron 214:430).

[2] Numerous sites in the north of Faynan and four settlements in the south of the study area have been dated using C14 (Beherec et al. 2014:678, Ben-Yosef et al. 2014: 813; 848; 855, Levy, Najjar, Higham et al. 2014:223-227, Smith et al. 2014a: 285; 263, Smith et al. 2014b:735).

[3] It has been estimated that between 33,000 and 36,000 tons of copper were mined at Faynan during the Iron Age (Ben-Yosef 2010:936).

CEHAO SCHOLARLY PARTICIPATION
2016

Republic of San Marino 14-15, April.

III INTERNATIONAL CONFERENCE OF THE ANCIENT ROADS. THE ANCIENT AMBER ROUTES.

CIVIA Ricerche – International Research Center for Ancient Roads and the Ways of Communication among Peoples, Republic of San Marino.

Paper by Graciela Gestoso Singer: "Amber Exchange in the Late Bronze Age Levant in Cross-cultural Perspective".

Buenos Aires, 19 August.

PUBLIC LECTURE.

Facultad de Teología, Universidad Católica Argentina.

Paper by Juan Manuel Tebes: "La materialidad de los cultos del desierto y los orígenes del culto de Yahvé"

Mendoza, 25-27 May.

III SEMANA BIBLICA ARGENTINA.

Asociación Bíblica Argentina.

Paper by Olga Gienini: "Juan I. Un Prólogo cosmopolita"

Salta, 19-22 September.

XXXV SEMANA DE TEOLOGIA.

Sociedad Argentina de Teología - PUCA.

Paper by Olga Gienini: "Is 66, Una relectura de Isaías en clave Jubilar"

Buenos Aires, March.

MITOS Y CREENCIAS EN EL CERCANO ORIENTE ANTIGUO. CONFERENCIAS DEL CENTRO DE ESTUDIOS DE HISTORIA DEL ANTIGUO ORIENTE.

Universidad Católica Argentina.

Paper by Romina Della Casa: "ḫaḫḫima- paralizó la tierra entera, secó las aguas. ḫaḫḫima- es grande! Paradojas y problemas de interpretación en los mitos hititas.

Buenos Aires, 20 August.

NOCHE DE LA IDEAS.

Ministerio de Cultura del Gobierno de la Ciudad de Buenos Aires, con la participación del Departamento de Filosofía de la Facultad de Filosofía y Letras de la UCA.

Paper by Santiago Rostom Maderna: "El dolor humano, el sufrimiento del justo"

Buenos Aires, 7 September.

SEMANA DE LAS LETRAS.

Universidad Católica Argentina.

Paper by Santiago Rostom Maderna: "Sueños en la tradición bíblica"

Buenos Aires, 17 September.

COMISIÓN ECUMÉNICA DE IGLESIAS CRISTIANAS EN LA ARGENTINA, CEICA.

Paper by Santiago Rostom Maderna: "El martirio en el Antiguo Testamento"

Murcia, 7-8 April.
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