



# A World-Altering Technology

## Script Development in Predynastic Upper Egypt

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JOUKOWSKY INSTITUTE  
FOR ARCHAEOLOGY AND THE ANCIENT WORLD

# Introduction: inventing the Predynastic (3,900 – 3,100 BCE)



Burial at Naqada



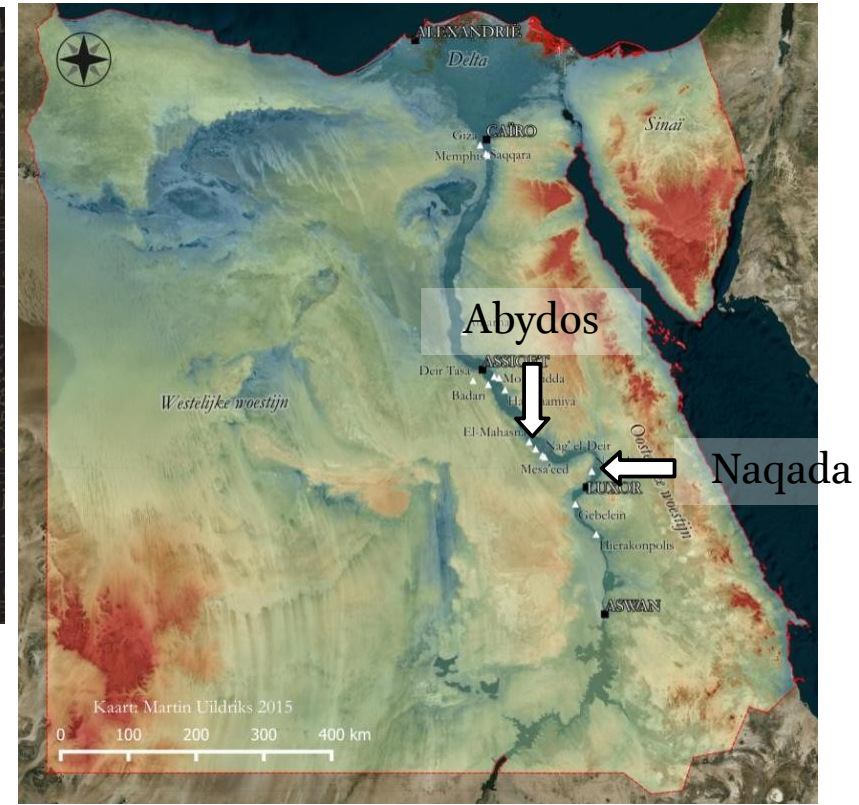
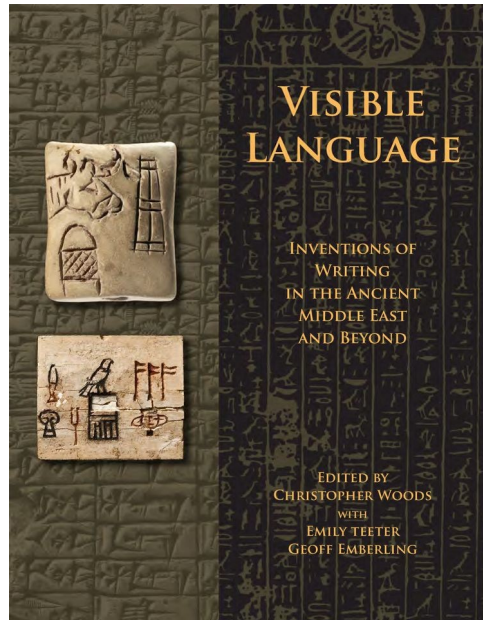
# Introduction: problem and question

- Writing

- 19<sup>th</sup> century model: history disconnected from prehistory
- “a conventionalized system of visual communication representing language” (MacArthur 2010, 115)
- “...continuous speech” (Stauder 2010, 137; Regulski 2013)
- “a visual code” (Stauder 2010, 139)

- Abydos

- *When* do graphics behave as writing? (proto-writing)
- *How* do graphics start behaving as writing?



# Introduction: two (?) sign inventories from U-j at Abydos

(Naqada III ~ c. 3,300 BCE)

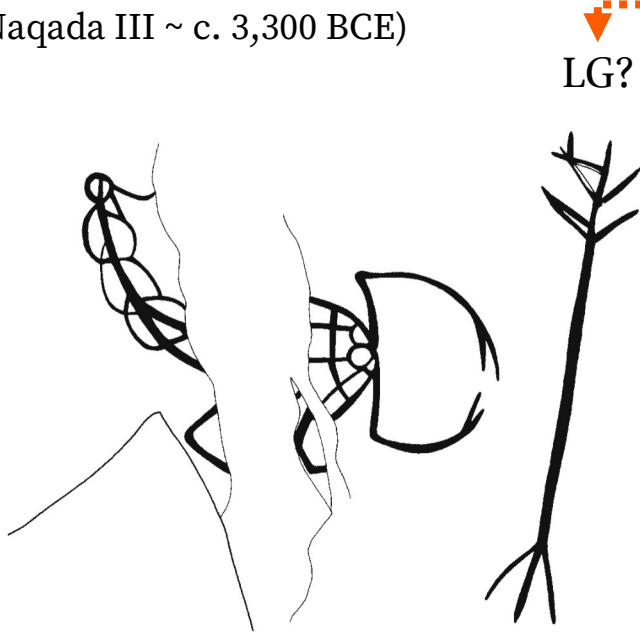


FIGURE 6.2. Dipinto from Tomb U-j depicting scorpion and tree signs. Perhaps to be interpreted as "Plantation of King Scorpion." Scale 1:2



FIGURE 6.4. Tag from Tomb U-j, perhaps reading *dw grh* "Mountain of Darkness," or "Western Mountain." Scale 2:1



FIGURE 6.5. Tag from Tomb U-j, perhaps reading *3bw* "Elephantine." Scale 2:1

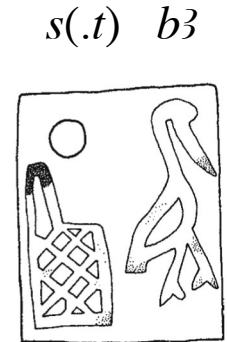


FIGURE 6.6. Tag from Tomb U-j, perhaps reading *b3st* "Bubastis" (?). Scale 2:1

← Reading order; LG = Logogram; SC = Semantic classifier



# Introduction: principles of writing in U-j

- Indexed to language:
  - Single unambiguous string of speech
  - Particular message (place-names)
- Calibrated (same size; see image on the right)
- Independent from referent?
- Drawn from earlier graphic inventories

(Notes: the elephant sign is assumed and resembles other signs and the bird has striking parallels in imagery considered non-linguistic)

FIGURE 6.3. Tag from Tomb U-j. Note the calibration of the size of signs to each other. Scale 2:1

Bird

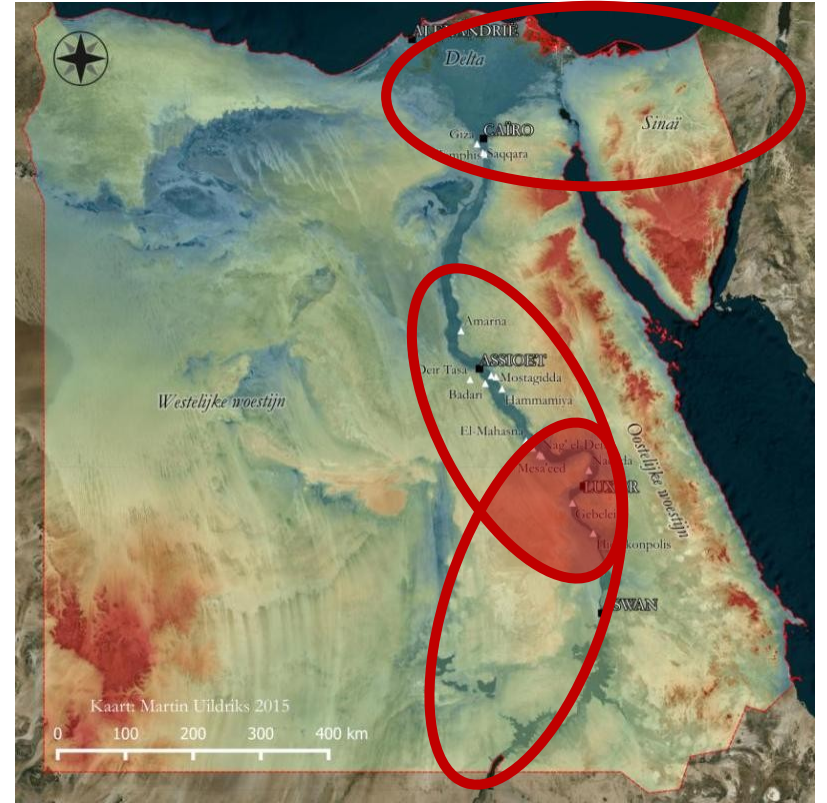
Elephant?



# Introduction: *how* did graphic recording of language develop?

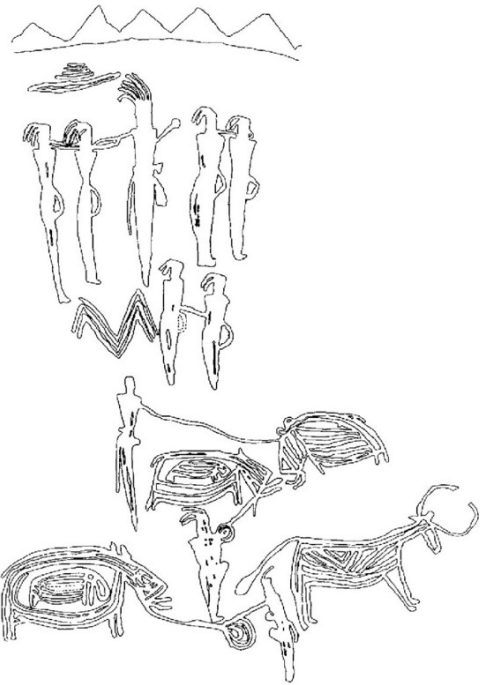
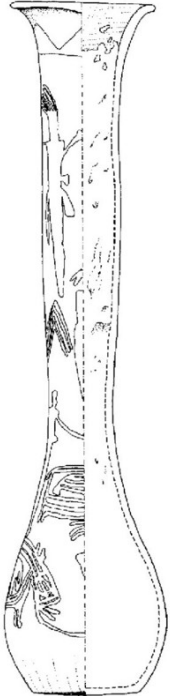
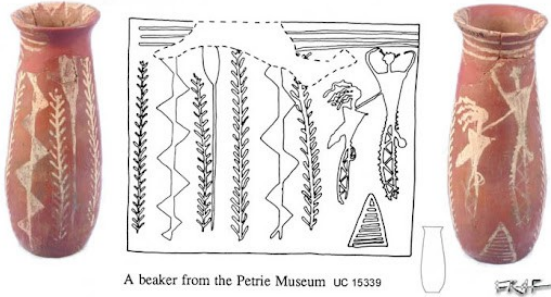
- 1) Sign inventories originate in various Predynastic sources
  - Ceramics & rock art: spread over large territory (see map)
  - Increasingly organized along specific narrative and linguistic functions
  - Considerable stylistic regional variance
- 2) Visual vocabularies developed within two if not more communities of practice
- 3) U-j is the result of Predynastic linguistic development; not only antecedent to dynastic hieroglyphics.

Predynastic imagery ↔ Dynastic hieroglyphics



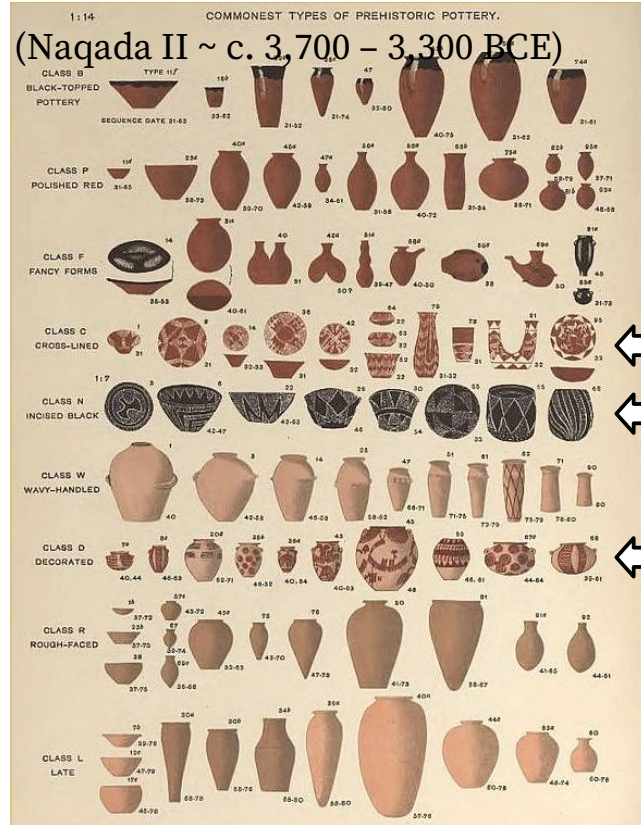
# Predynastic Ceramics: C-Ware

(Naqada I ~ c. 3,900 – 3,700 BCE)





# Predynastic Ceramics: D-Ware



← C-Ware

← N-Ware

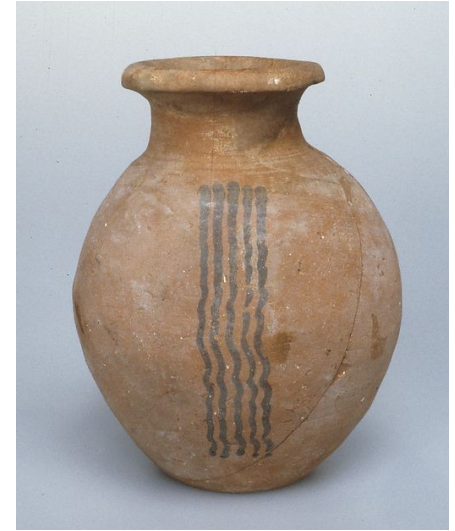
← D-Ware



Naqada IIC/D (c. 3,500 – 3,350)



Naqada IID (c. 3,400 – 3,300)



Naqada IIIA (c. 3,350 – 3,300)

Notes: N-Class ceramics (Nubian imports) are not discussed in this paper; dates based on style and approximate

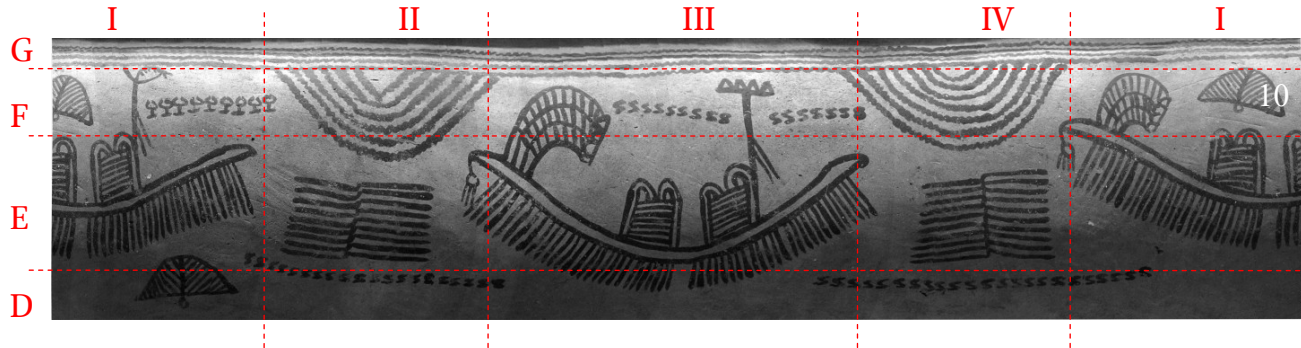
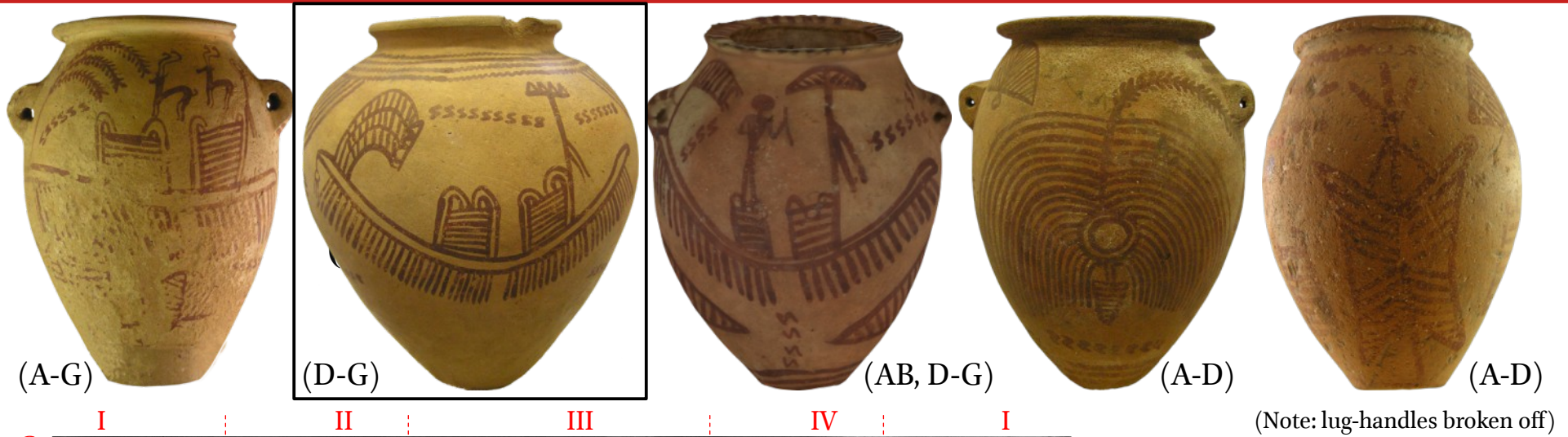
# Predynastic Ceramics: D-Ware

(Naqada IIC/D ~ c. 3,500 – 3,350 BCE)

G  
F  
E  
D  
C  
B  
A



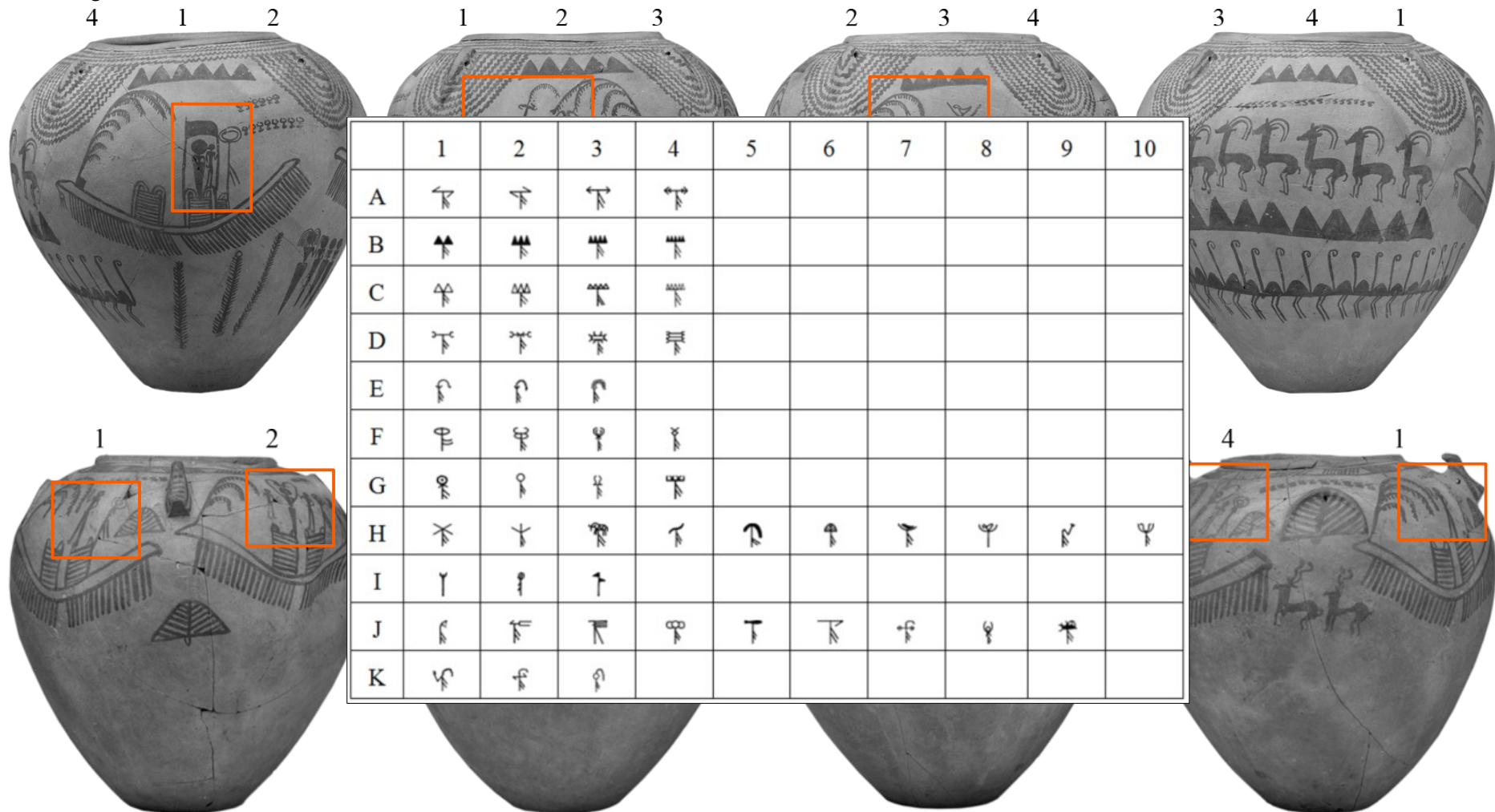
# Predynastic Ceramics: C-Ware & D-Ware (1)



Note how handles (type or absence) follow decorative scheme



# Predynastic Ceramics: narration in D-Ware



|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| A |   |   |   |   |   |   |   |   |   |    |
| B |   |   |   |   |   |   |   |   |   |    |
| C |   |   |   |   |   |   |   |   |   |    |
| D |   |   |   |   |   |   |   |   |   |    |
| E |   |   |   |   |   |   |   |   |   |    |
| F |   |   |   |   |   |   |   |   |   |    |
| G |   |   |   |   |   |   |   |   |   |    |
| H |   |   |   |   |   |   |   |   |   |    |
| I |   |   |   |   |   |   |   |   |   |    |
| J |   |   |   |   |   |   |   |   |   |    |
| K |   |   |   |   |   |   |   |   |   |    |

Naqada IIC/D (c. 3,500 – 3,350); note human figures and interchangeable motifs

# Predynastic Ceramics: C-Ware & D-Ware (1)

(Naqada IID ~ c. 3,400 – 3,300 BCE)

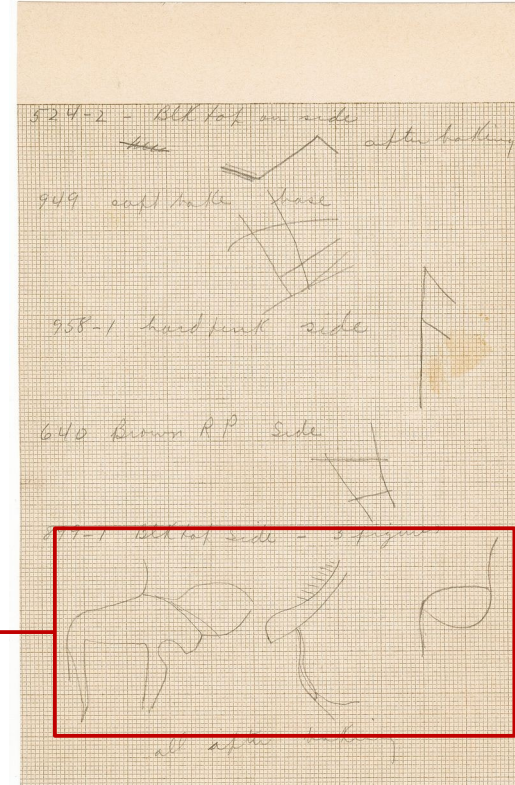
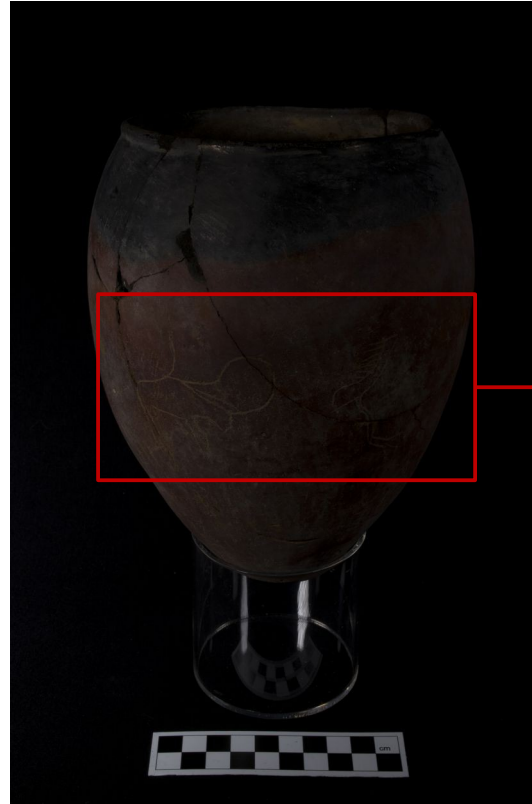
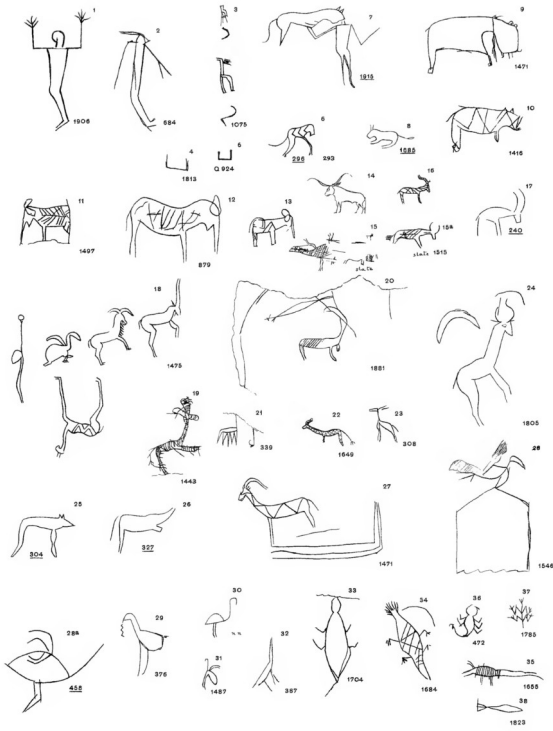






# Predynastic Ceramics: Potmarks on Black-Topped Ware

(Naqada I ~ c. 4,400 – 3,100 BCE)



# Predynastic Ceramics: Potmarks from Minshat Abu Omar

|  |                               |                               |                          |                                |                               |                              |                               |
|--|-------------------------------|-------------------------------|--------------------------|--------------------------------|-------------------------------|------------------------------|-------------------------------|
| serekhs with and without Horus           |                               |                               |                          |                                |                               |                              |                               |
|  | 44/3<br>serekh-type           | 160/1<br>serekh-type          | 1800/7<br>serekh-type    | 1640/13<br>serekh-type         | 1590/60<br>wine-type 1        | 520/3<br>serekh-type         | 1210/22<br>serekh-type        |
| imported ware marks applied after firing |                               |                               |                          |                                |                               |                              |                               |
|  | 1590/93a<br>other-impert      | 1590/93b<br>other-impert      | 2275/121<br>other-impert |                                |                               |                              |                               |
| longer inscriptions                      |                               |                               |                          |                                |                               |                              |                               |
|  | 2163/21<br>wine-type 4        | 2400/20<br>wine-type 2        | 2400/21<br>wine-type 1   | 2275/114<br>wine-type 1        |                               |                              |                               |
| houses/hr                                |                               |                               |                          |                                |                               |                              |                               |
|  | 2900/33<br>serekh-other-large | 2400/19<br>wine-type 1        | 2900/31<br>wine-type 1   | 3009/1<br>wine-type 1          |                               |                              |                               |
| prf hwt with fish                        |                               |                               |                          |                                |                               |                              |                               |
|  | 1590/71<br>wine-type 1        | 2780/15<br>wine-type 1        | 3040/17<br>wine-type 1   | 1290/11<br>wine-type 2         | 2275/108<br>wine-type 2       | 2275/116<br>wine-type 3      | 1363/37<br>wine-type 3        |
|  |                               |                               |                          |                                |                               |                              | 1590/61<br>wine-type 4        |
|  |                               |                               |                          |                                |                               |                              | 1590/63<br>serekh-other-large |
| prf hwt with second elements             |                               |                               |                          |                                |                               |                              |                               |
|  | 1930/34<br>wine-type 1        | 2897/25<br>wine-type 1        | 2000/2<br>wine-type 2    | 1590/58<br>wine-type 3         | 1590/78<br>serekh-other-large | 1450/15<br>wine-type 1       | 1000/14<br>wine-type 2        |
|  |                               |                               |                          |                                |                               |                              | 3040/12a<br>wine-type 4       |
|  |                               |                               |                          |                                |                               |                              | 1590/59<br>ovoid-flat-large   |
|  |                               |                               |                          |                                |                               |                              |                               |
|  | 1000/17<br>wine-type 2        | 1590/68<br>wine-type 2        | 2780/14<br>wine-type 4   | 2275/115<br>serekh-other-large | 1590/70<br>wine-type 1        | 1590/77<br>wine-type 0       | 886/8<br>wine-type 1          |
|  |                               |                               |                          |                                |                               |                              | 1590/81<br>wine-type 1        |
|  |                               |                               |                          |                                |                               |                              | 1590/67<br>wine-type 2        |
|  |                               |                               |                          |                                |                               |                              |                               |
|  | 1000/15f<br>wine-type 2       | 2900/11<br>serekh-other-large | 2600/21<br>wine-type 3   | 2600/20a<br>wine-type 2        | 1430/22<br>wine-type 1        | 2900/8<br>serekh-other-large | 3040/15<br>wine-type 0        |
|  |                               |                               |                          |                                |                               |                              | 1590/72<br>wine-type 1        |
|  |                               |                               |                          |                                |                               |                              | 2000/26<br>wine-type 2        |

|                             |                              |                           |                               |                              |                               |                                |                            |
|-----------------------------|------------------------------|---------------------------|-------------------------------|------------------------------|-------------------------------|--------------------------------|----------------------------|
|                             |                              |                           |                               |                              |                               |                                |                            |
|                             | 2000/60<br>wine-type 1       | 2275/119<br>wine-type 1   |                               |                              |                               |                                |                            |
| hr?                         |                              |                           |                               |                              |                               |                                |                            |
|                             | 401/2<br>"nw"-type           | 128/2<br>ovoid-flat-large | 800/10<br>ovoid-rounded-small | 1254/1<br>"nw"-type          | 415/1<br>ovoid-flat-large     | 1590/64<br>serekh-other-large  | 1513/4<br>serekh-other     |
| harpoons and other hooks    |                              |                           |                               |                              |                               |                                |                            |
|                             | 674/3<br>serekh-type         | 1513/2<br>serekh-type     | 2105/1<br>serekh-type         | 740/7<br>serekh-type         | 2385/8<br>wine-type 3         | 2820/25<br>ovoid rounded-small | 1111/1<br>ovoid flat large |
|                             |                              |                           |                               |                              |                               |                                | 6744<br>serekh-type        |
| hr                          |                              |                           |                               |                              |                               |                                |                            |
|                             | 1640/14<br>serekh-type       | 590/6<br>serekh-type      | 1705/10<br>barrel             | 1590/82<br>wine-type 1       | 2900/32<br>wine-type 2        | 2590/6<br>wine-type 4          |                            |
| with hrw (?)                |                              |                           |                               |                              |                               |                                |                            |
|                             | 1363/36<br>wine-type 1       | 1590/76<br>wine-type 1    | 2897/56<br>wine-type 1        | 3040/36<br>wine-type 3       |                               |                                |                            |
| angles, triangles, segments |                              |                           |                               |                              |                               |                                |                            |
|                             | 883/2<br>ovoid rounded small | 1168/1<br>bowl flat       | 1455/10<br>serekh-type        | 883/6<br>ovoid rounded small | 2000/59<br>wine-type 1        | 2000/53<br>wine-type 2         | 2235/10<br>wine-type 2     |
|                             |                              |                           |                               |                              |                               |                                | 1594/11<br>serekh-type     |
|                             |                              |                           |                               |                              |                               |                                | 2254/4<br>serekh-type      |
|                             |                              |                           |                               |                              |                               |                                |                            |
|                             | 2600/22<br>wine-type 1       | 1363/35<br>wine-type 1    | 1450/19<br>wine-type 0        | 758/8<br>serekh-type         | 2000/4<br>wine-type 2         | 2700/2<br>wine-type 2          |                            |
| tall narrow signs           |                              |                           |                               |                              |                               |                                |                            |
|                             | 1210/1<br>serekh-type        | 1210/21<br>serekh-type    | 1277/8<br>barrel              | 1594/1<br>cylindrical        | 2900/9<br>wine-type 1         |                                |                            |
| animal-like                 |                              |                           |                               |                              |                               |                                |                            |
|                             | 1590/73<br>wine-type 0       | 1147/6<br>wine-type 1     | 1590/83<br>wine-type 1        | 2900/17<br>wine-type 2       | 2295/32<br>serekh-other-large |                                | 127/7<br>serekh-type       |

|                                    |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|------------------------------------|------------------------|--------------------------------|-------------------------------|-----------------------------|-----------------------------|------------------------|-------------------------------|----------------------------|--------------------------------|--|--|--|--|
| plantlike                          |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 2590/10<br>wine-type 3 | 900/5<br>bowl-flat             | 1145/2<br>wine-type 2         | 1590/75<br>wine-type 3      | 1590/65<br>wine-type 1      | 1040/14<br>wine-type 2 | 2780/12<br>wine-type 4        | 1259/1<br>serekh-other     | 1030/13<br>wine-type 1         |  |  |  |  |
|                                    |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 434/14<br>serekh-other | 1030/12<br>wine-type 2         | 2590/3<br>wine-type 4         | 3040/28<br>wine-type 1      | 2900/30<br>wine-type 4      | 570/5<br>serekh-type   | 2770/6<br>ovoid rounded small | 1590/23<br>bowl-deep       | 1143/3<br>bowl-deep            |  |  |  |  |
|                                    |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 2163/20<br>wine-type 1 | 2200/5<br>serekh-type          |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
| simple impressions/cuts on the lip |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 400/7<br>serekh-other  | 1127/1b<br>ovoid rounded large | 1150/1<br>ovoid rounded small | 1640/21<br>serekh-type      |                             |                        |                               |                            |                                |  |  |  |  |
| rb/star                            |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 1030/9<br>barrel       | 1590/66<br>wine-type 0         | 2275/107<br>wine-type 1       | 2900/29<br>wine-type 1      | 2163/18<br>wine-type 4      | 2200/18<br>other       | 1859/5<br>other               | 1664/2<br>ovoid flat large |                                |  |  |  |  |
| nr                                 |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 1210/2<br>serekh-type  | 1210/5<br>serekh-type          | 1210/9<br>serekh-type         | 1800/4<br>serekh-type       | 1210/13<br>serekh-type      | 1326/5<br>serekh-type  | 1640/10<br>serekh-type        | 1640/22<br>serekh-type     | 1664/3<br>serekh-type          |  |  |  |  |
|                                    |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 2030/3<br>serekh-type  | 2400/12<br>barrel              | 2899/42<br>ovoid-flat-rough   | 2899/50<br>ovoid-flat-rough | 2400/5<br>bowl-flat         | 2295/15<br>serekh-type | 570/4<br>serekh-type          | 1362/1<br>bowl-deep        | 1590/25<br>ovoid rounded-small |  |  |  |  |
|                                    |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 2275/10<br>wine-type 1 |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
| nr-hoes                            |                        |                                |                               |                             |                             |                        |                               |                            |                                |  |  |  |  |
|                                    | 123/1<br>bowl-flat     | 1210/7<br>serekh-type          | 1210/15<br>serekh-type        | 1513/1<br>cylindrical       | 2230/2a<br>ovoid flat small |                        |                               |                            |                                |  |  |  |  |

# Predynastic Ceramics: serekhs (*srḥ*)

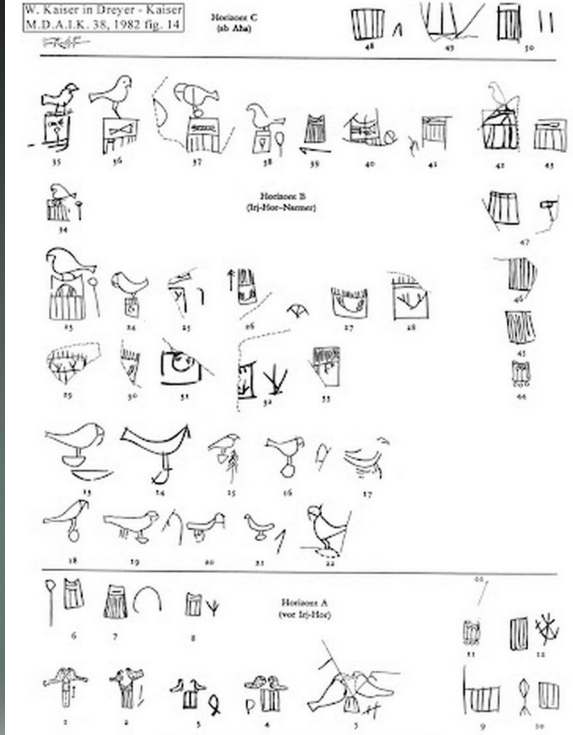
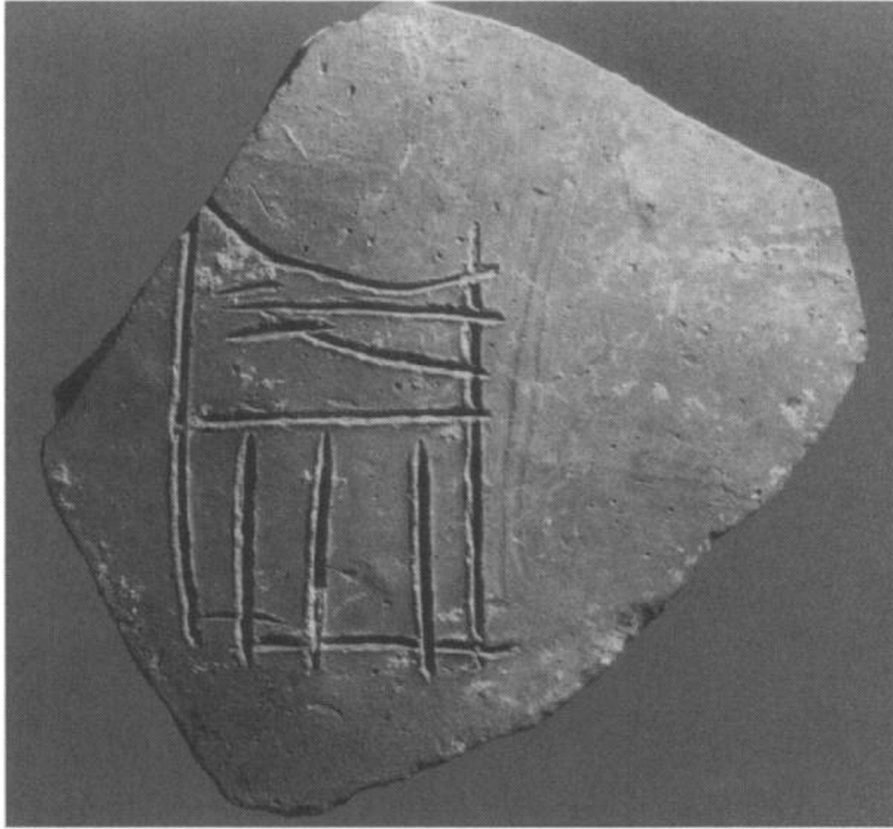
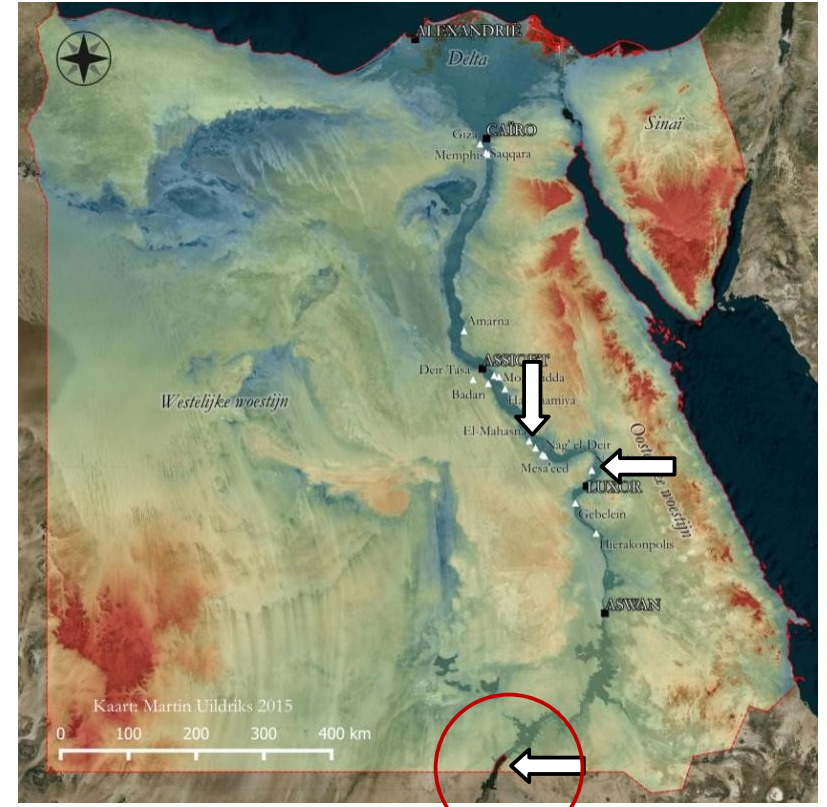
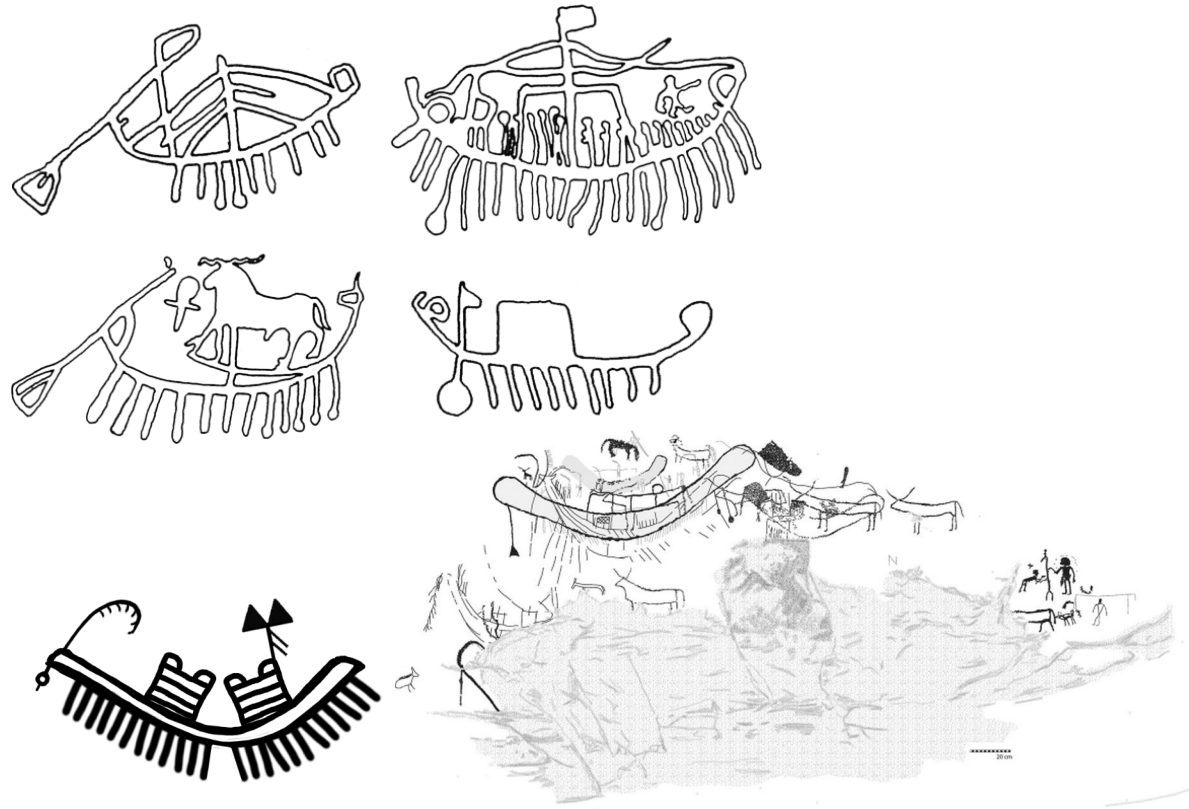


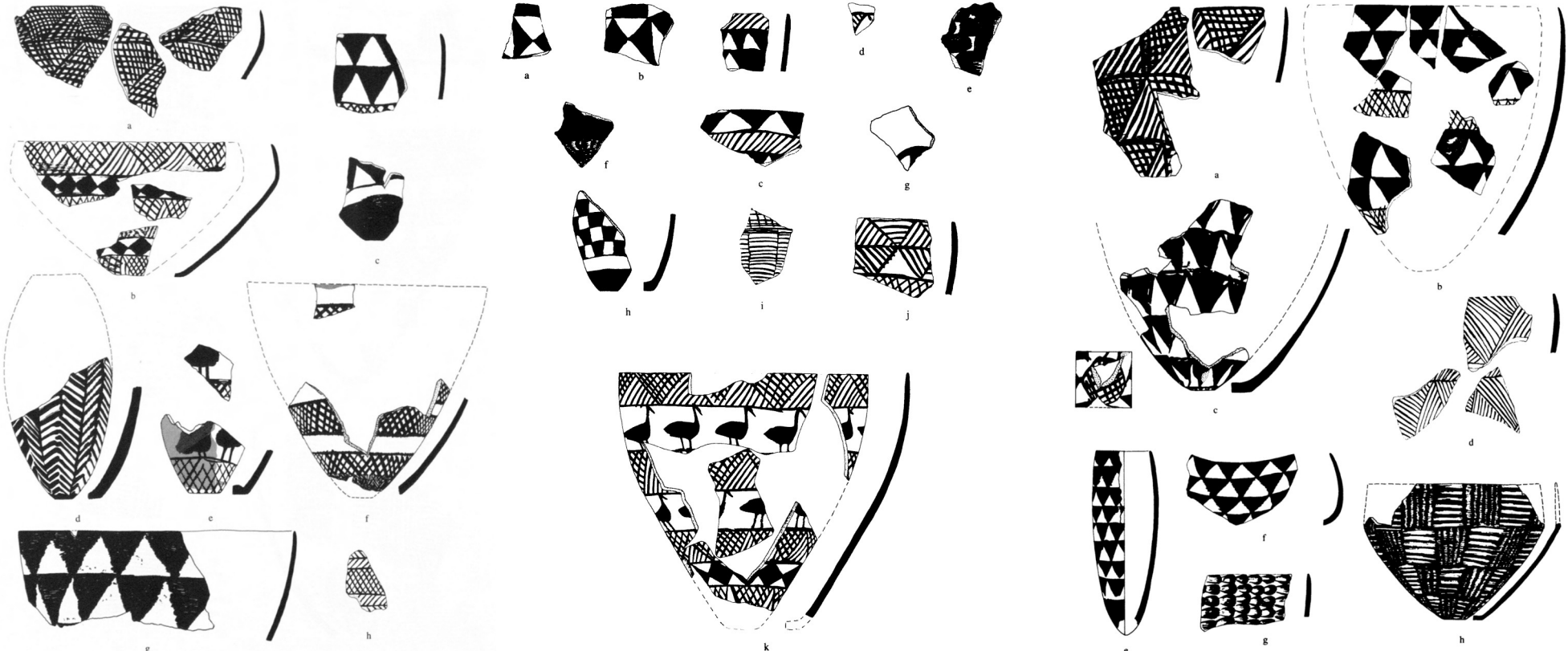
Abb. 14. Königsnamen und Serekhsformen auf großen Krügen bis Aha  
(1-9, 11: Bebi; 4, 7-8, 11, 44: Tura; 5: Sini; 6, 9, 33, 35: Turkan; 9-10: Ahaak ab-Moleq; 13-22, 25-26, 40,  
46-47, 49-50: Umm el-Qa'ab; 23-24: Hilwan; 26, 38: Minshat Abu Omar; 36: Awas; 37, 43: Zawyet el-Arysi;  
41: Tell Irtasi (Giza); 42: 'En Sauez; 43: Hierakonpolis; 44: Abu Rowach)



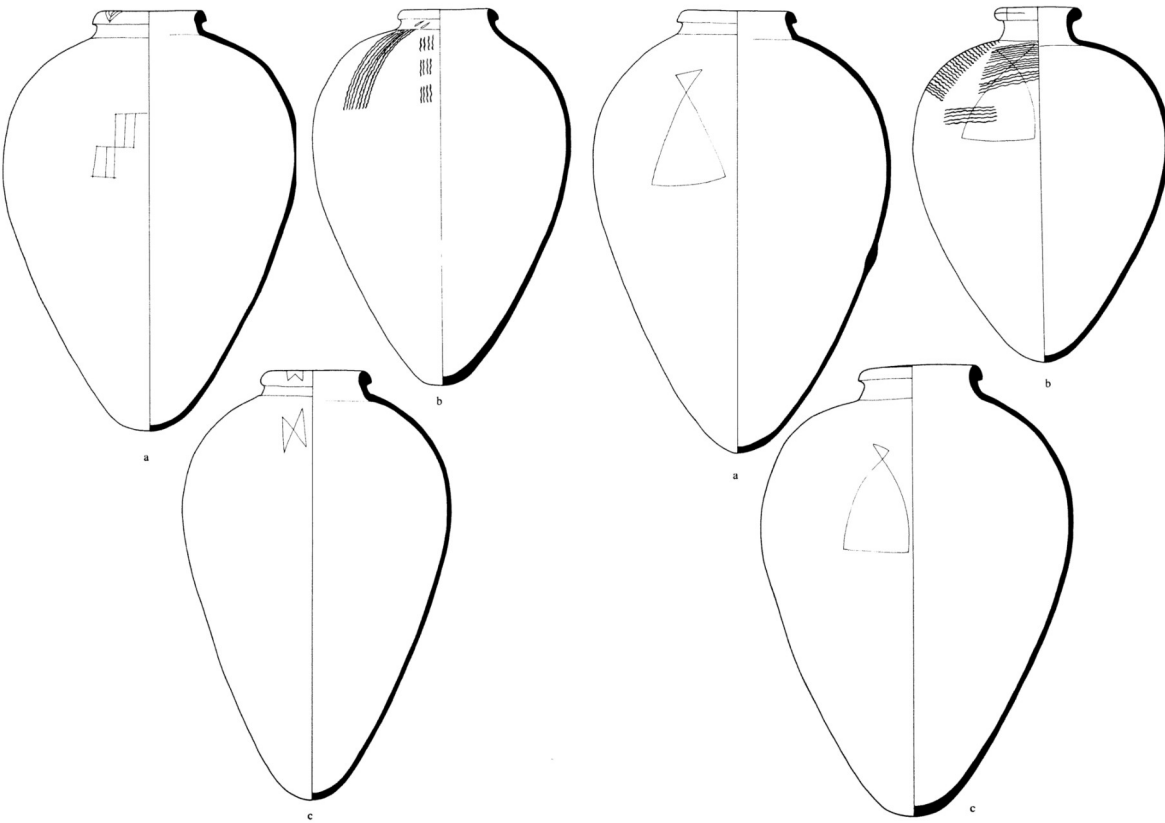
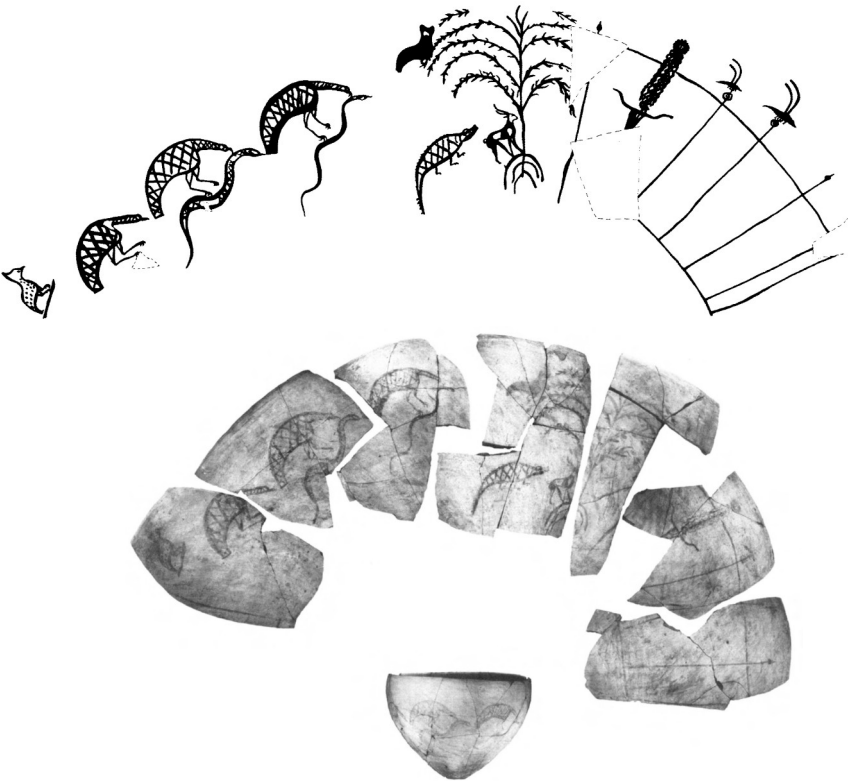
# Predynastic Sayala: Rock Art



# Predynastic Sayala: Ceramics from Qustul



# Predynastic Sayala: Ceramics from Qustul





# Script Development in Predynastic Upper Egypt

- **Naqada I and II**
  - Many communities, many producers and consumers
  - Fertile landscape for development of linguistic encoding
  - Attribution/tagging and modifications of signs in place to construct new semantic/linguistic value
- **Naqada II:**
  - Narration as guide deconstruction semantics and record specific messages
  - Signs were calibrated, functioned independent of context, and had specific meaning
  - Logograms and semantic classifiers indistinct, reading order fixed
  - Linguistic encoding was local, resulting in a great diversity of similar-looking systems
- **Naqada III:**
  - Audience of these systems merged with their employment under a growing ruling elite
  - Acrophony (*dw*, *b3*, *st*, *3b*) in one elite system started to dissolve multi-dialectic ambiguity