

iDAI.chronOntology



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iDAI.welt

- common infrastructure at DAI (open for others)
- data, standards, analysis
- DAI guarantees the existence of these services
- services are integrated

- Arachne —> iDAI.objects
- iDAI.gazetteer
- iDAI.vocab

<http://www.dainst.org/forschung/forschung-digital/idai.welt>

iDAI.gazetteer

- geographical norm data, LOD, network of gazetteers
- connection to Arachne
- everything down to buildings
- driven by practical needs, not theory
- simple data model
- simple type system, e.g. administrative unit vs. settlement (people introduce a second field)
- ancient and modern places
- only one hierarchy (mainly modern), no notion of causal / non-causal

<http://gazetteer.dainst.org/place/2048564>

Meaning of a gazetteer entry

- „Do we talk about the same thing?“
- List of place names, but coordinates not a necessary feature
- Buildings: split between Arachne and iDAI.gazetteer
- administrative unit vs. settlement: France with overseas territories
- „living“ vs. „dead“: Yugoslavia, Slovenia
- Statements refer to time of the last change in the entry (Crimea as of 2014-03-06 belongs to ...“
- „Berlin as administrative unit“ and „Berlin as settlement“, generic: „Berlin as union of these phenomena“

- old discussions with Martin, theory was sleeping
- TODO: Cidoc CRM, CRMgeo

Links to the gazetteer

An ideal link to the gazetteer probably includes:

1. Gazetteer-ID
2. Time it refers to: e.g. Contemporary to e.g. the text it is found in, even if we do not know the exact time, or „at the time of creating this link“; but also „360 BC“
3. Type it refers to
4. Created when
5. Created by

(also an old discussion)

iDAI.vocab

- thesaurus: isA, has part
- simple translations
- a first attempt at definitions
- „exactMatch“

<http://archwort.dainst.org/thesaurus/de/vocab/index.php?tema=535>

iDAI.chronOntology

- Gazetteer for temporal terms: „middle Augustan“, „early 1. cent.AD“
- norm data, similar to iDAI.gazetteer
- usable with or without iDAI.gazetteer, maybe later a unified service
- more complex relationships: needs theory (gazetteer will retroactively be made more sound)
- goal: make semantically explicit what is there
- first focus: archaeology / classics

Status

- just started
- first prototype, we expect fully working version early 2016
- contact us: idai.chronontology@dainst.de

PeriodO

- will collaborate with PeriodO

	H	I	J	L	M	N	O
1	source_locator	label_original	label_en	label_alt	start_label	end_label	date_ty
2	http://www.fastionlin	Bashkëkohore	Contemporary		56	0	BP (2000
3	http://www.fastionlin	Moderne	Modern		150	56	BP (2000
4	http://www.fastionlin	Osmane	Ottoman		611	150	BP (2000
5	http://www.fastionlin	Mesjetë /Bizantine	Medieval	Byzantine	1000	611	BP (2000
6	http://www.fastionlin	Mesjetë e hershme	Early Medieval		1435	1000	BP (2000
7	http://www.fastionlin	Perandorake e vonë	Late Imperial		1700	1435	BP (2000
8	http://www.fastionlin	Perandorake e mesme	Mid Imperial		1900	1700	BP (2000
9	http://www.fastionlin	Perandorake e hershme	Early Imperial		1999	1900	BP (2000
10	http://www.fastionlin	Republikane	Republican		2168	2001	BP (2000
11	http://www.fastionlin	Helenistike	Hellenistic		2336	2168	BP (2000
12	http://www.fastionlin	Klasike/Qytetare ilire	Classic illyrian	Urban Illyrian	2480	2336	BP (2000
13	http://www.fastionlin	Arkaike/Para qytetare ilire	Archaic Illyrian	Protourban Illyria	2600	2480	BP (2000

service: mapping to time line

- „early 1. cent. AD“: 1 AD to ca. 40 AD, fuzziness (theory by others, we will only implement it)
- „Augustan“: 30 BC to 14 AD (under some definition)
- but ID belongs to period, not its dating
- dating depends on definition (augusteisch: starting with coronation, time of real power, style)
- mapping can change any time when our knowledge improves
- always scholarly opinions, more than one dating possible

service: calendar conversions

- Is there a need for it?
- wrapper for existing services? (e.g. Egyptian calendar in Heidelberg)

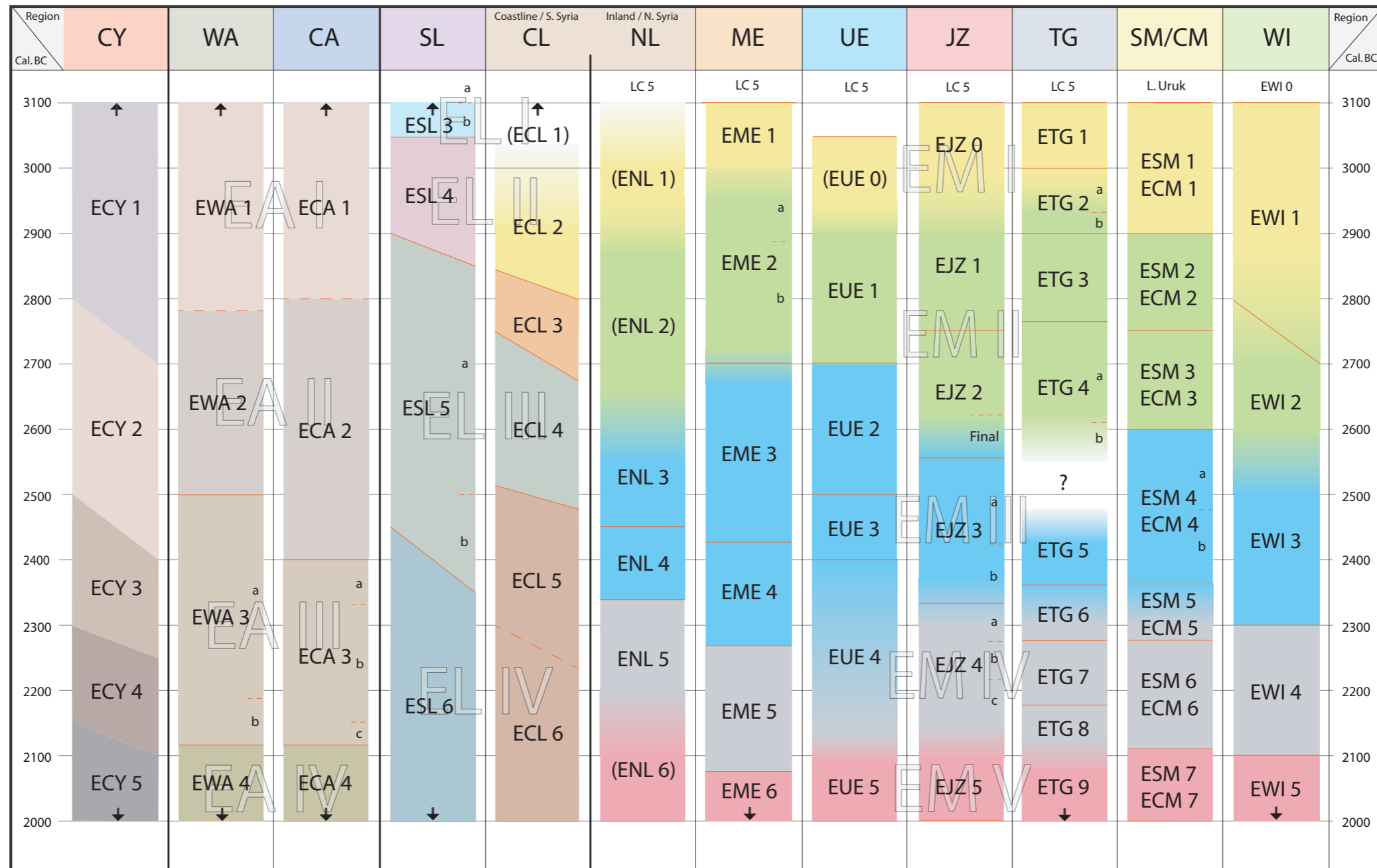


MY NEW SIMPLIFIED CALENDAR SYSTEM ASSUMES THE DATE NEVER CHANGES, THEN CORRECTS ANY DRIFT VIA LEAP DAYS.

Is temporal term a Period?

- Period in CRM: „social“ definition
- corresponding Spacetime Volume may be disjunct, but temporal projection continuous
- temporal terms likely all periods (Poland?)
- Places also have definitions, only less prominent; and space-time volumes
- So: model all gazetteer entries as periods? At least the interesting ones?
- settlement, admin. unit, archaeological place or area
- continent, land form, island, hydrography?
- buildings / institutions?

Types of period transitions



EA (Early Anatolian) – EL (Early Levantine) – EM (Early Mesopotamian)* Cultural Horizon Table, v. 5.4.4

The regional phases or sub-phases reflect changes in the material culture (predominantly ceramics), and/or the level of urbanisation, and refer to the comparative stratigraphy of chronological benchmarks, at a regional and inter-regional level. Use of the same colour denotes the existence of strong cultural links or parallel phenomena between neighbouring regions.

The absolute dates are based on the harmonised radiocarbon data.

E : Early, CY : Cyprus, WA : Western Anatolia, CA : Central Anatolia, SL : Southern Levant, CL : Central Levant, NL : Northern Levant, ME : Middle Euphrates, UE : Upper Euphrates,

JZ : Jezirah, TG : Tigridian Region, SM : Southern Mesopotamia, CM : Central Mesopotamia, WI : Western Iran.

* EMI (Early Mesopotamian/Iranian) for WI.

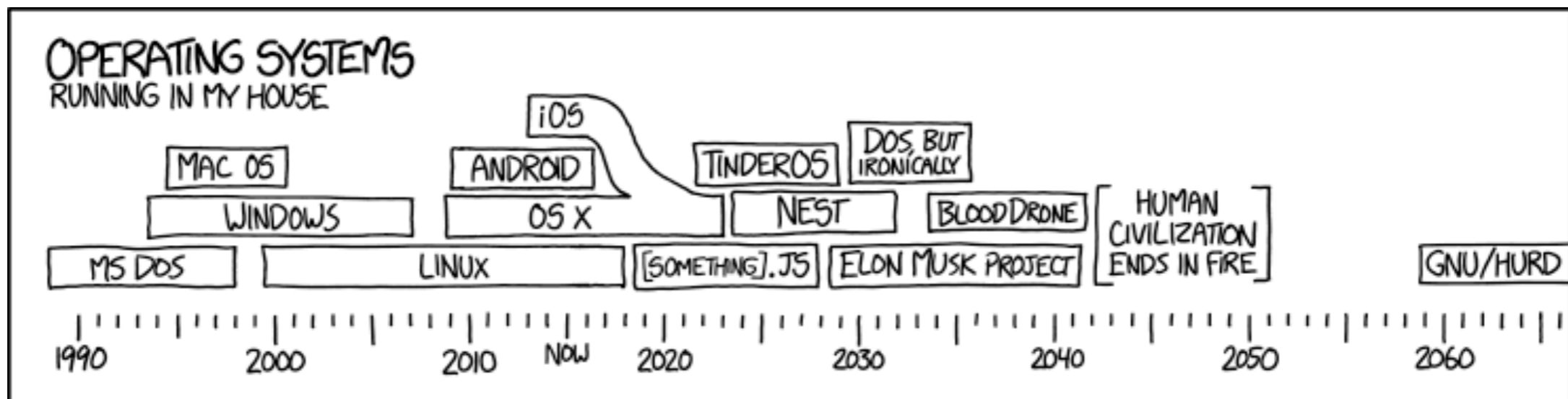
Types of period transitions

- temporal relations
- precision of the transition process (fade in/out?)
- precision knowledge about the process

ECY 1/2: different starting times for building palaces

EWA 1/2: there must be a specific time, but it is not exactly known
etc.

- relative dating is not a problem for the data model



data model so far

- id
- labels, preferred label
- relationships between periods (causal or not)
- statements about their temporal and spatial projections
- tags
- description
- provenance of data (e.g. Getty AAT), sameAs
- datings
- created, modified

not yet:

- definition (other than free text)
- provenance of opinions for e.g. competing datings
- statements about their spacetime volumes

data model: a few questions

- Is there an „objective part“ in dating? (apart from CI4 etc.)
- formalise definitions?
- list of definition types? (use case for the humanities thesaurus?)
- definition: begin / end?
- definitions versus descriptions / characteristic properties („defining criteria / characteristics“, often more than one „definition“: A and B? A or B? At least one?)
- umbrella terms („Sammelbegriffe“) versus periods with parts
- inheriting (dating) information: who inherits from who? „early dynastic period“ in Egypt
- (And is this a job for the display system?)
- ca. versus bounding boxes (sometimes only very rough bounding boxes possible)

Pragmatic needs

- „I just want a link for Bronze age, I don't care about the source!“ (union, implicitly inherits all datings)
- It has to be a working service by the end of the project!
- industrial strength: needs to ingest all temporal terms at the DAI

example: Arachne

- never explicit definitions: on purpose!
- classification: prehistory vs. Egypt (no attempt at systematic classification)
- flat list with hints of hierarchy —> automated hierarchy —> manual correction

<https://docs.google.com/spreadsheets/d/1OzodQxEsOL6NlxP2yTo3AOXK-m3JrFNz8jVC-UAzfao>

todo:

- independent of temporal term: dating and place (no hierarchy-awareness of the places yet in Arachne, but we can go via the Gazetteer)

examples from Getty AAT

- hierarchy: e.g. Styles and Periods > by region > Early western world > mediterranean > Aegean (ie. cultures, styles, periods?) > Aegean periods > Bronze Age periods
- standard: „cultures, styles and epochs of ...“
- European Bronze Age „coexists with“ Bronze Age (three-age system)
- model what they seem to mean or what they write? (see Thesaurus maintenance workshop)

examples from Getty AAT

Aegean Bronze Age period (300106927)

- virtually not a definition, no date, no source, no connection with earlier or later periods

Assyrian Colony period (300019659)

- “The period is characterized by contacts with Mesopotamia particularly through trade with Assyrian merchants who founded colonies such as the town of Kultepe in Anatolia.”
- implicit definition in the title??

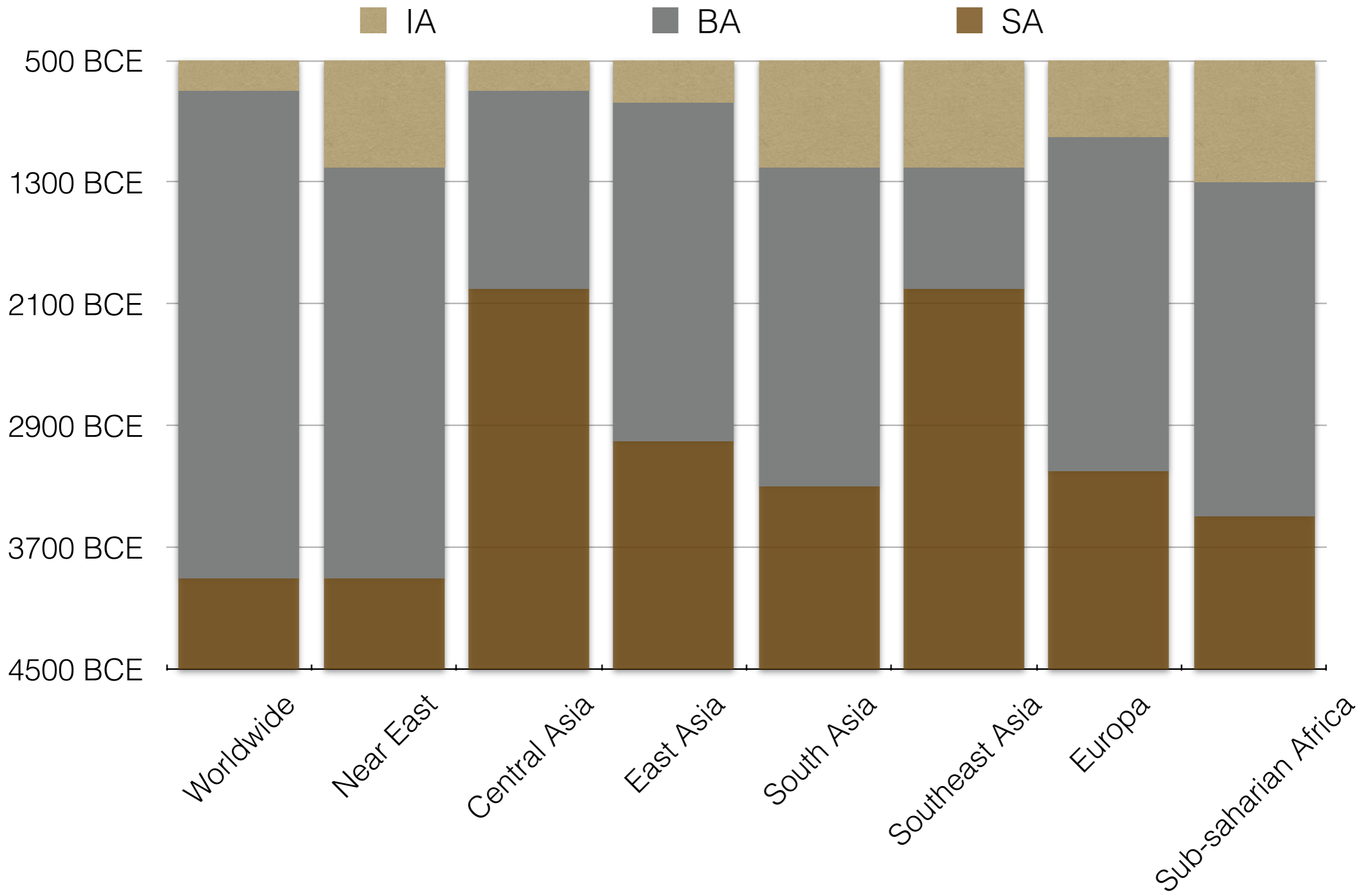
Amarna period (300020375)

- definition (Amarna became the capital) very implicitly in the description
- date without sources (but “Sources and Contributors”)

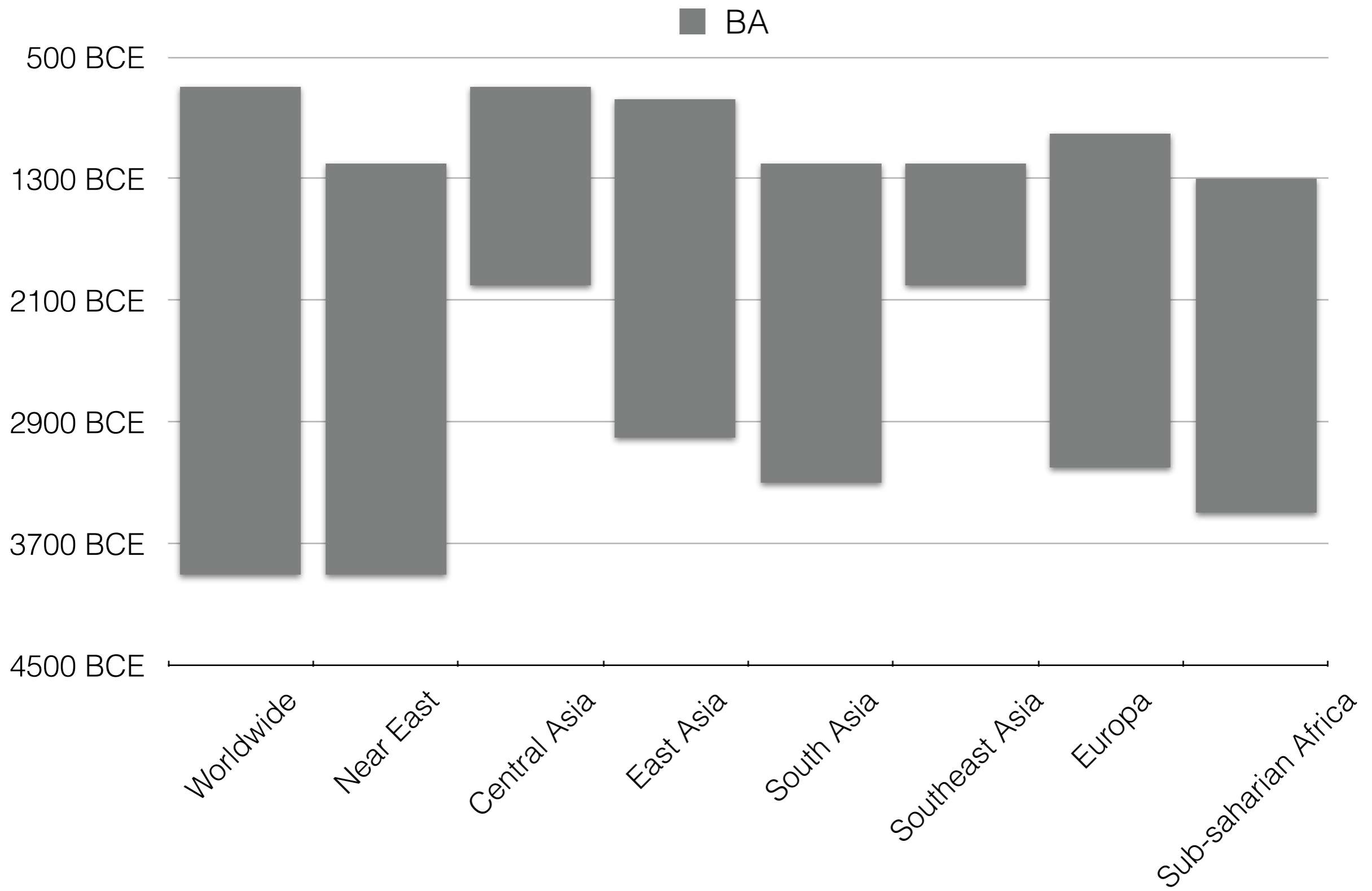
example: Stone / Bronze age in the Levante

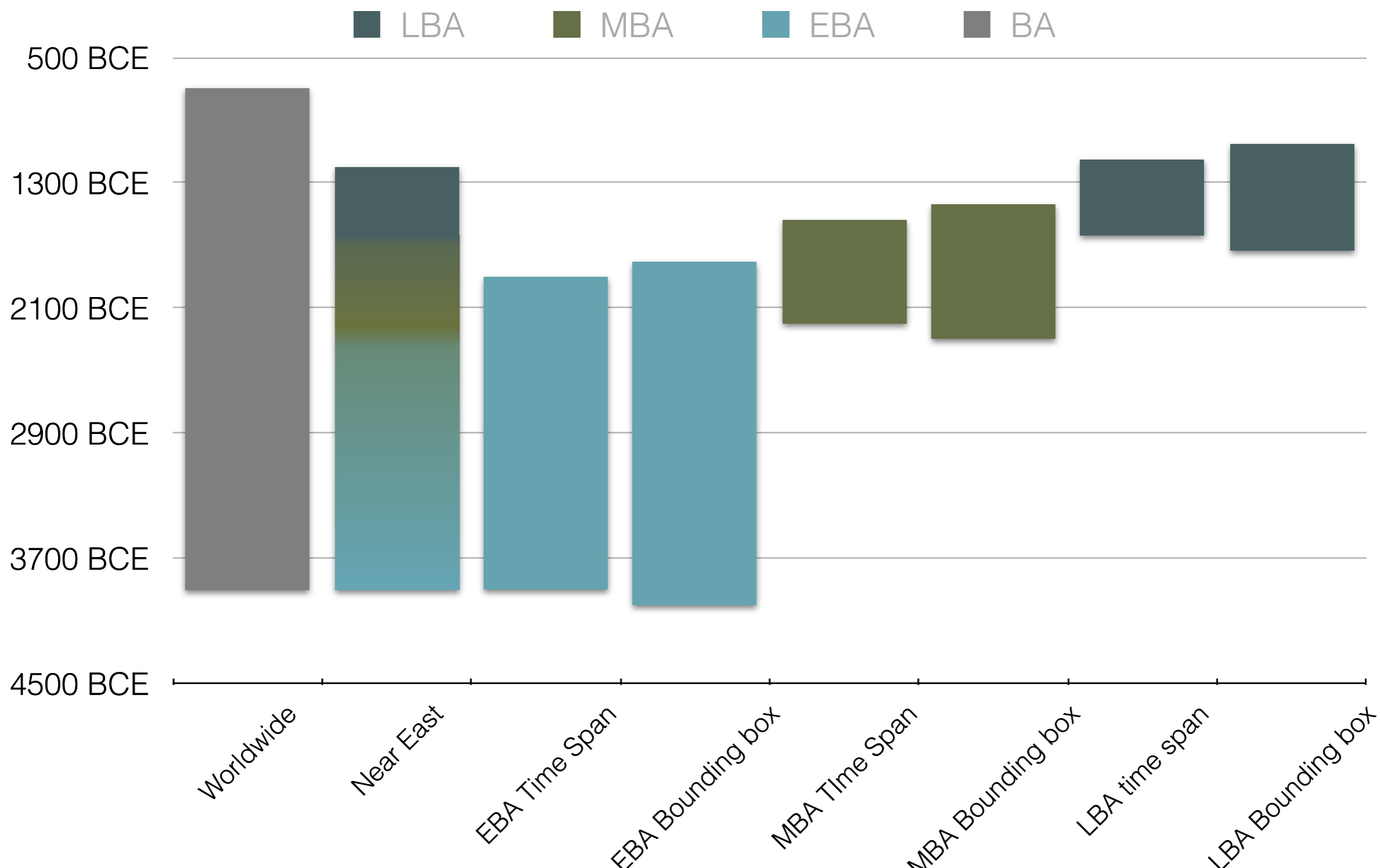
- Definition: dominance of bronze production
- So: we can find bronze items that do not be dated to the bronze age
- Local definition for the beginning of the Bronze age?? At least for early / middle / late
- Early Bronze Age (def. in Levante: urban revolution) doesn't start at the beginning of Bronze age: mostly after begin of Bronze Age, but not guaranteed for all places (is this a local definition for the whole local Bronze Age??)
- often definitions via other events (begins with urban revolution), criterion for making them separate entries: only when we talk about them?
- transition phases with inherited definitions, scholars may or may not add this to the defined parts (—> same name, but different definitions)
- Solutréen: specific stone tools were found here (and at other places), overlaps with Epipaleolithic and Neolithic (Def: animal husbandry), must be part of stone age

The **Bronze Age** is a time period characterized by the *use of bronze*.



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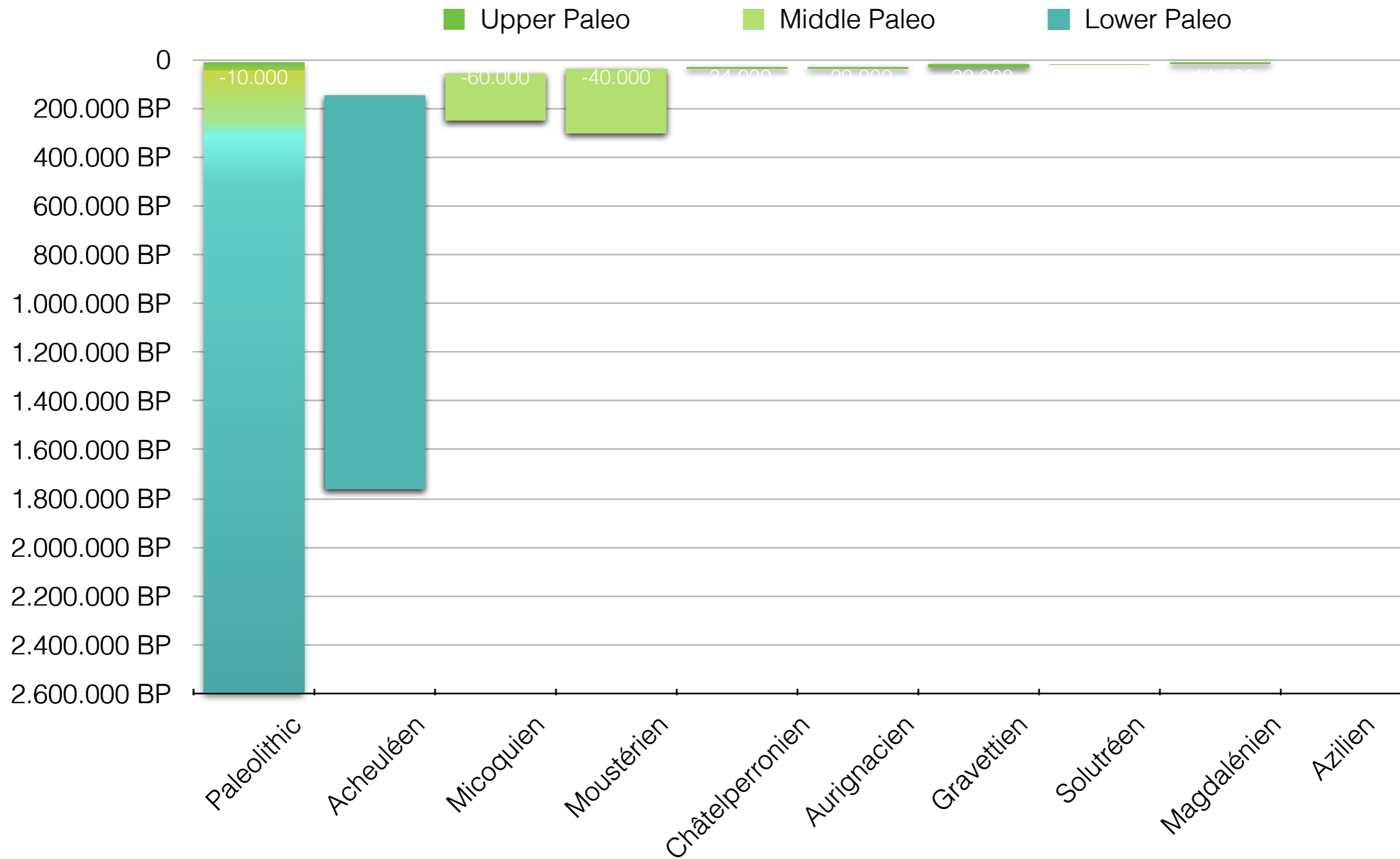




Time span	
Early Bronze Age	c. 3900/3700 - 2200/1900
Middle Bronze Age	c. 2200/1900 - 1640/1540
Late Bronze Age	c. 1640/1540 - 1200/1150

Bounding box	
Early Bronze Age	4000 - 1800
Middle Bronze Age	2300 - 1440
Late Bronze Age	1740 - 1050

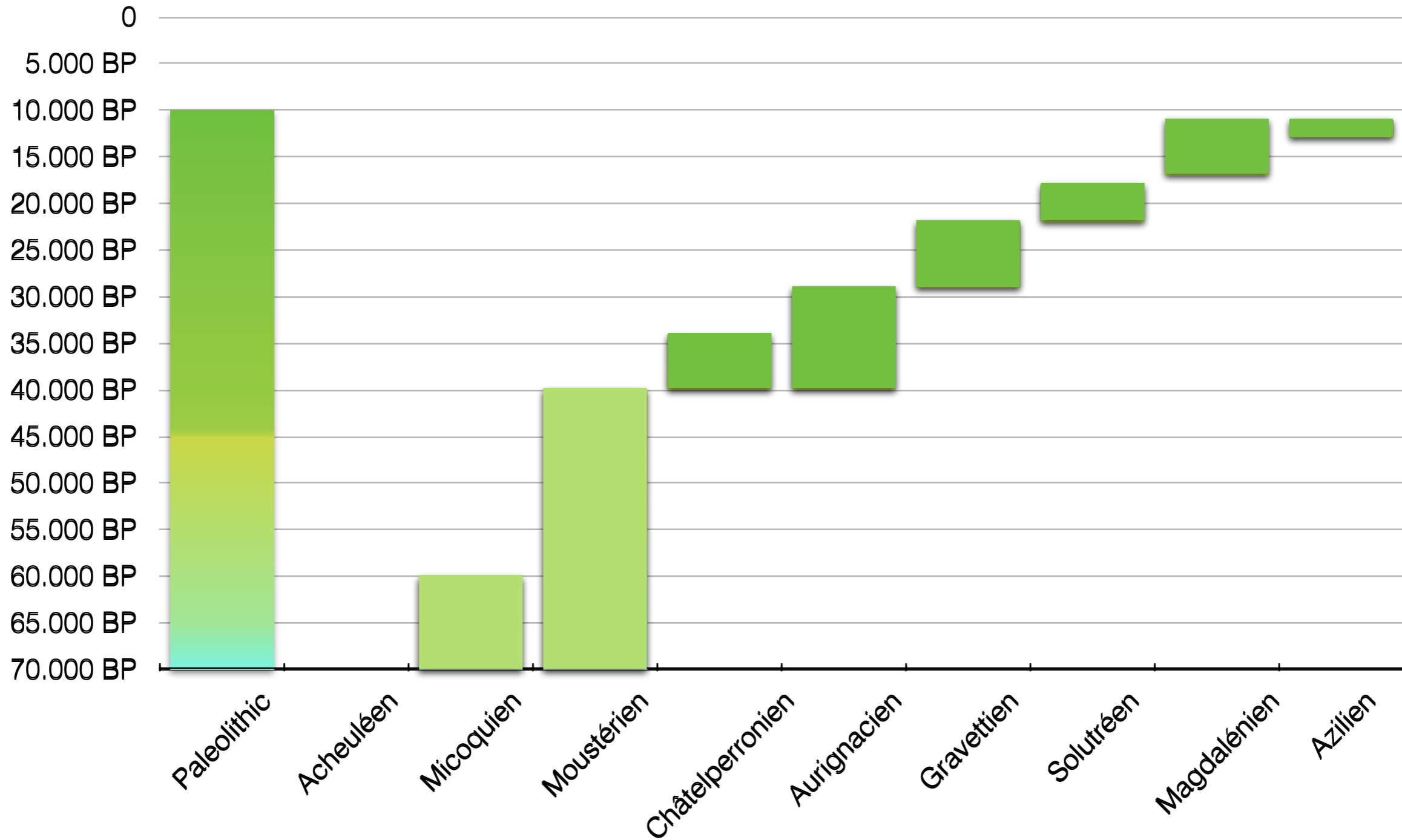
The **Paleolithic** is a prehistoric period of human history distinguished by the development of the most primitive ***stone tools*** discovered, and covers roughly 95%^[1] of human technological prehistory.



Lower Paleolithic	c. 3.3/2.6 Ma–450/300 ka BP
Middle Paleolithic	c. 450/300 ka-45/40 ka BP
Upper Paleolithic	c. 45/40 ka-10/8 ka BP
*Ma = Million years, ka = Thousand years	

The **Middle Paleolithic** is the second subdivision of the Paleolithic.
 The time when ***lithic assemblages*** were characterized by the predominance of tools made on flakes from standardized flake production.
 Moreover, the extinction of Neanderthal man is believed to coincide with the end of the Middle Paleolithic.

■ Upper Paleo ■ Middle Paleo ■ Lower Paleo



Châtelperronien	ca 40,000 to 34,000 BP
Aurignacien	ca 40,000 to 29,000 BP
Gravettien	ca 29,000 to 22,000 BP
Solutréen	ca 22,000 to 18,000 BP
Magdalénien	ca 17,000 to 11,000 BP
Azilien	ca 13,000 to 11,000 BP

examples with different begin/end criteria

PPNB (pre-pottery Neolithic)

- begin: Style of stone tool Steinwerkzeug / domestication of animals (competing definitions)
- end: new technology ceramics

Neolithic

- Begin: socio-economic: transition from hunter/gather cultures
- End: new technology metallurgy

Minoan time

- Begin: ceramics style: Agios Onouphrios and Lenda, etc.
- End: politisch event: Mycenaean conquest / control

Classical Antiquity

- Begin: Homeric epics / Greek colonisation (competing definitions)
- End: death of East Roman emperor Justinian I.