5th International Seminar on Water Culture
Water and Human Ingenuity:
Enduring inspirations of Dayu

Detecting universal archetypes of "culture heroes" Dayu and Hercules

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What is a Culture Hero

Oral traditions in the rise of history preserved stories of figures—often portrayed with metaphysical or semi-divine qualities—who shaped early societies and cultures. These tales, blending mythological motifs and archetypal themes, may encode fragments of historical truth while reflect the collective unconscious.

Today, we will explore the universal archetypes embodied by Dayu (大禹) and Hercules (*Ἡρακλῆς*).

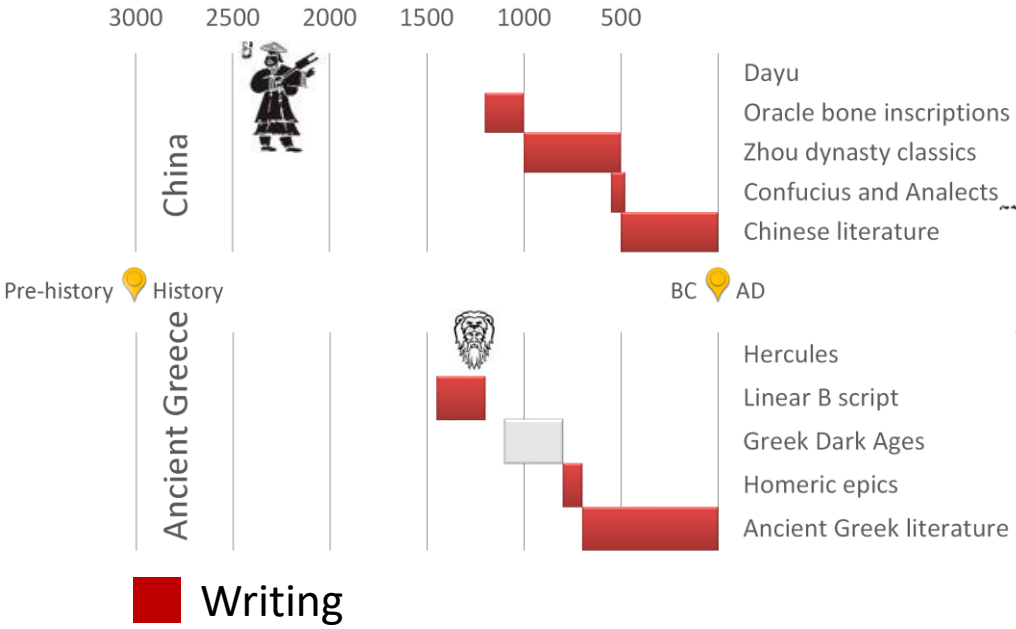
Despite the lack of historical contact between Chinese and Greek cultures, their myths reveal remarkable parallels—a testament to the shared psychological and cultural patterns that emerge across human societies.

- Who were Dayu and Hercules?
- What did they do?
- And what do their similarities reveal about the human imagination?

Dayou (Yu the Great): https://en.wikipedia.org/wiki/Yu_the_Great#/media/File:King_Yu_of_Xia.jpg

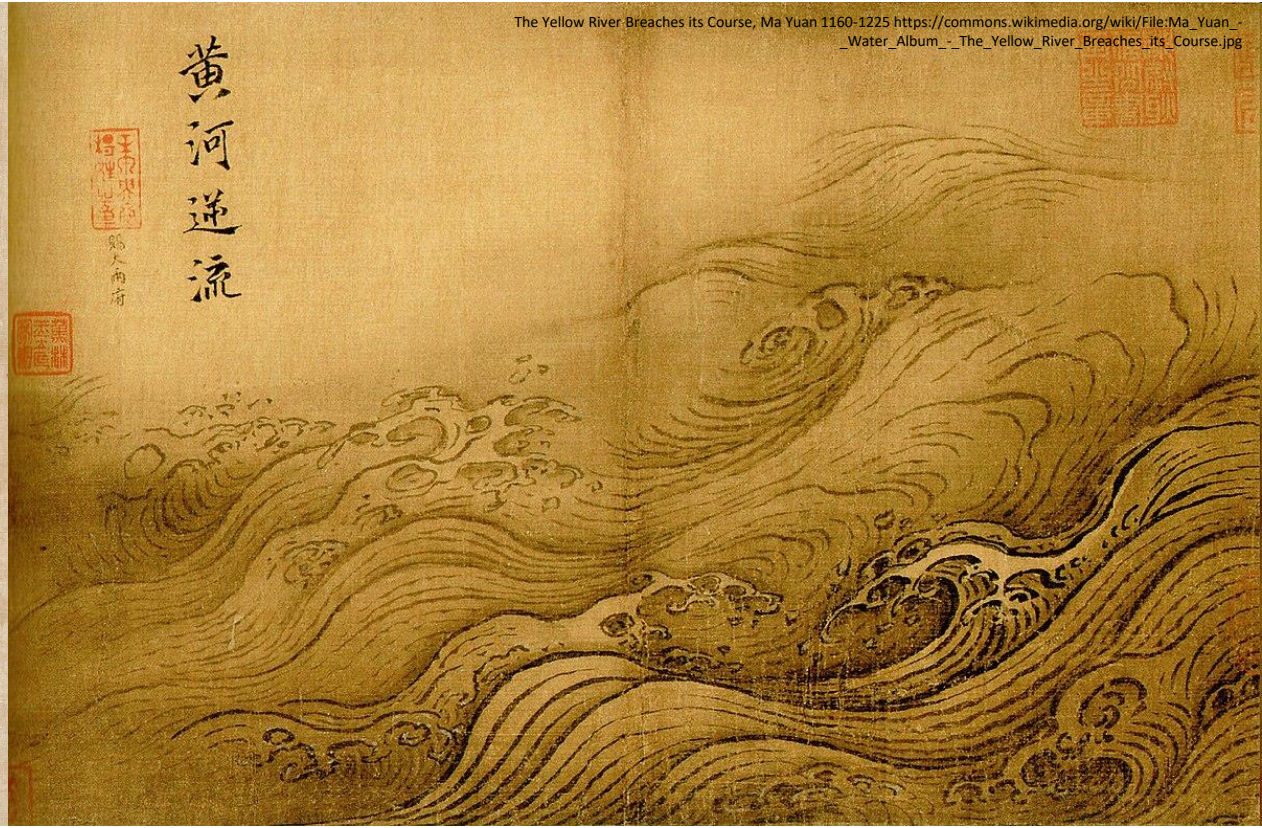
Herakles and Telephos Louvre: https://en.wikipedia.org/wiki/Hercules#/media/File:Herakles_and_Telephos_Louvre_MR219.jpg

When and where we find our Culture Heroes



Dayu – The Flood Tamer

Yu the Great as depicted in the album Portraits of Famous Men c. 1900, housed in the Philadelphia Museum of Art
https://en.wikipedia.org/wiki/Yu_the_Great#/media/File:Portraits_of_Famous_Men_-_Da_Yu.jpg



The Yellow River Breaches its Course, Ma Yuan 1160-1225 https://commons.wikimedia.org/wiki/File:Ma_Yuan_-_Water_Album_-_The_Yellow_River_Breaches_its_Course.jpg

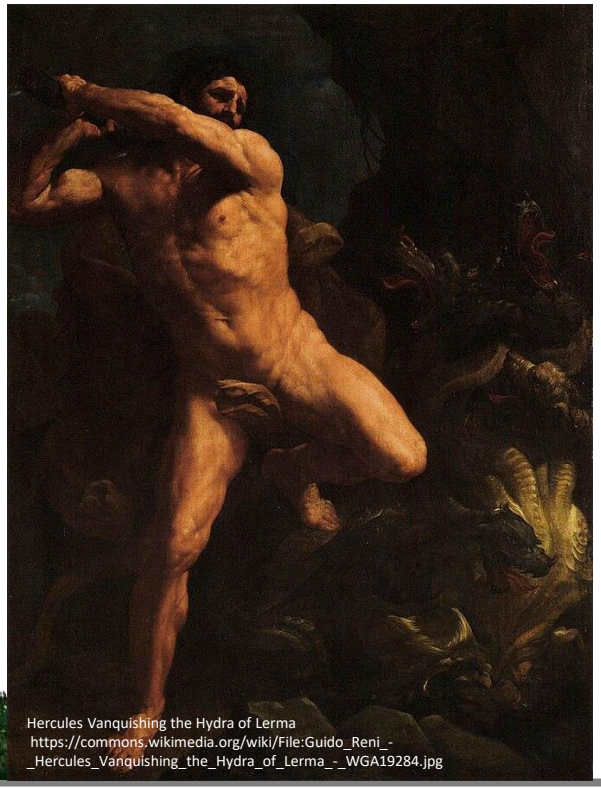
Hercules – The Laborer hero

Parallel #1 – Taming Chaos with Water

Hydraulic heroism

Dayu: Ingenious approach to the technical solution

https://kknews.cc/news/lryjey2.html



Hercules Vanquishing the Hydra of Lerma
https://commons.wikimedia.org/wiki/File:Guido_Reni_-_Hercules_Vanquishing_the_Hydra_of_Lerma_-_WGA19284.jpg

Hercules: Symbolical depiction of the intervention

Parallel #2 – Endurance & Self-Sacrifice

The hero suffers so the people may thrive

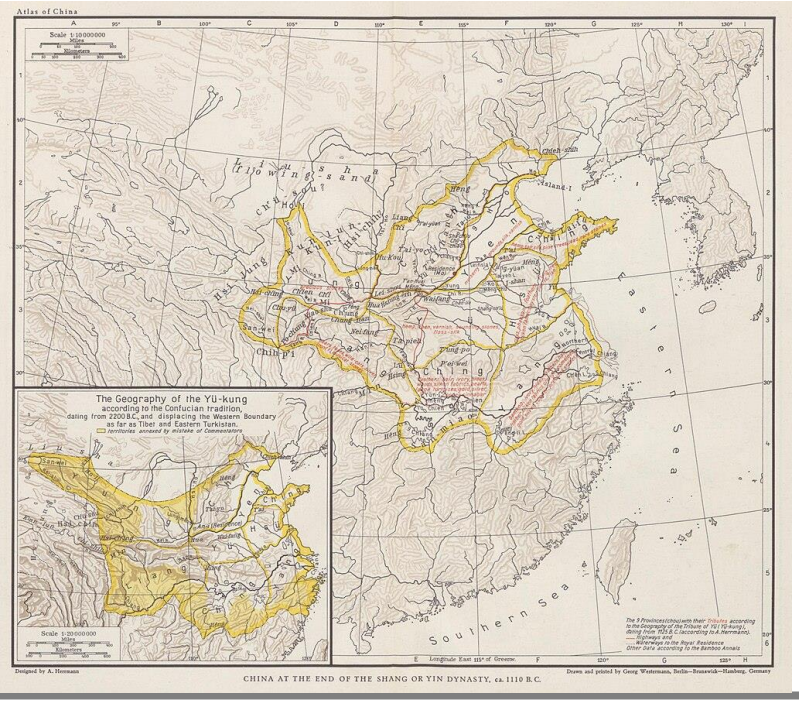
https://kknews.cc/history/lvqz8v9.html

Annibale Carracci Ercole regge il globo Carmerino Farnese
https://el.wikipedia.org/wiki/%CE%91%CF%81%CF%87%CE%B5%CE%AF%CE%BF:Annibale_Carracci_Ercole_regge_il_globo_Carmerino_Farnese.jpg

Parallel #3 – Founder of Order

Dayu:

- Hereditary rule (dynasties)
- Divides China into 9 provinces (jiuzhou)



Hercules:

- Heracles cleared the land, preparing for the rise of the Greek city-states.
- Royal kingdoms were inspired by his archetype (Sparta, Mycenae and Thebes)

The scale of influence (space)

Dayu:

His legend formed the political culture of China (big scale)

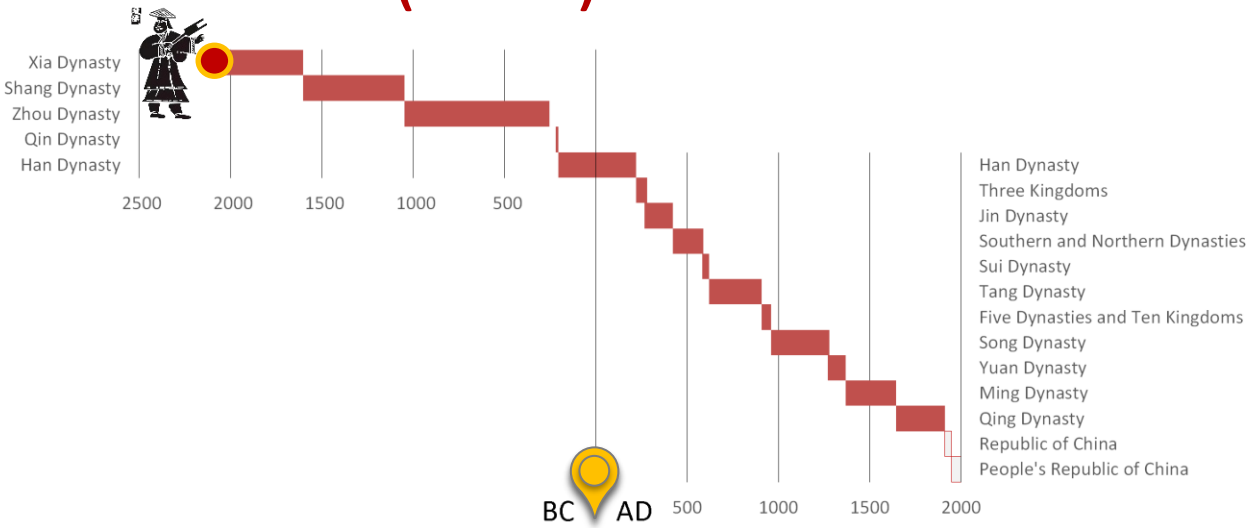
Hercules:

His legend inspired the political culture of Greek cities-states (small scale)

The scale of influence (time)

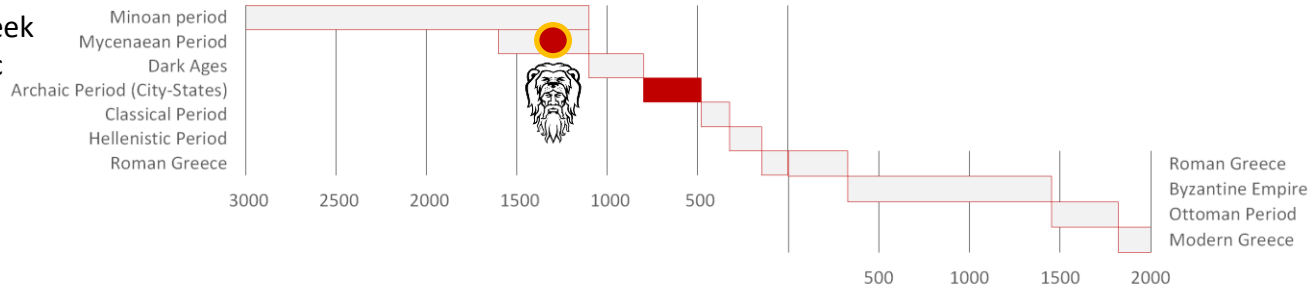
Dayu:

His legacy is considered as the beginning of a continues political culture of 4000 years

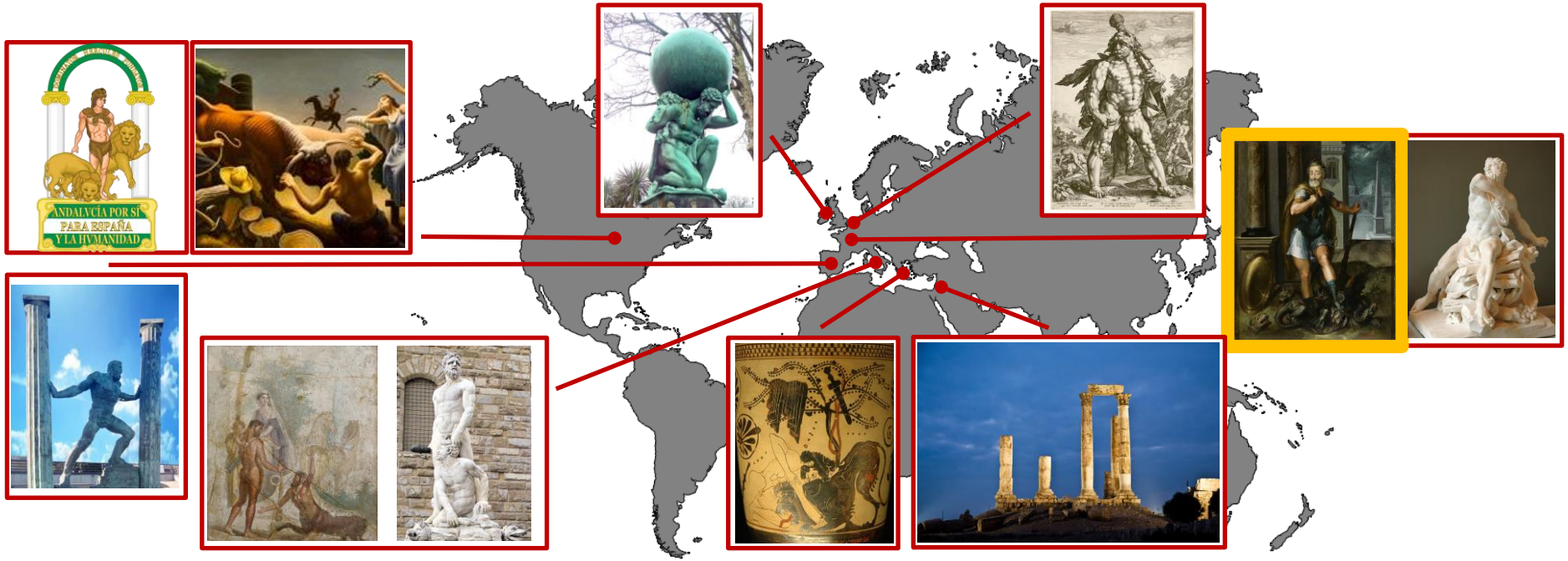


Hercules:

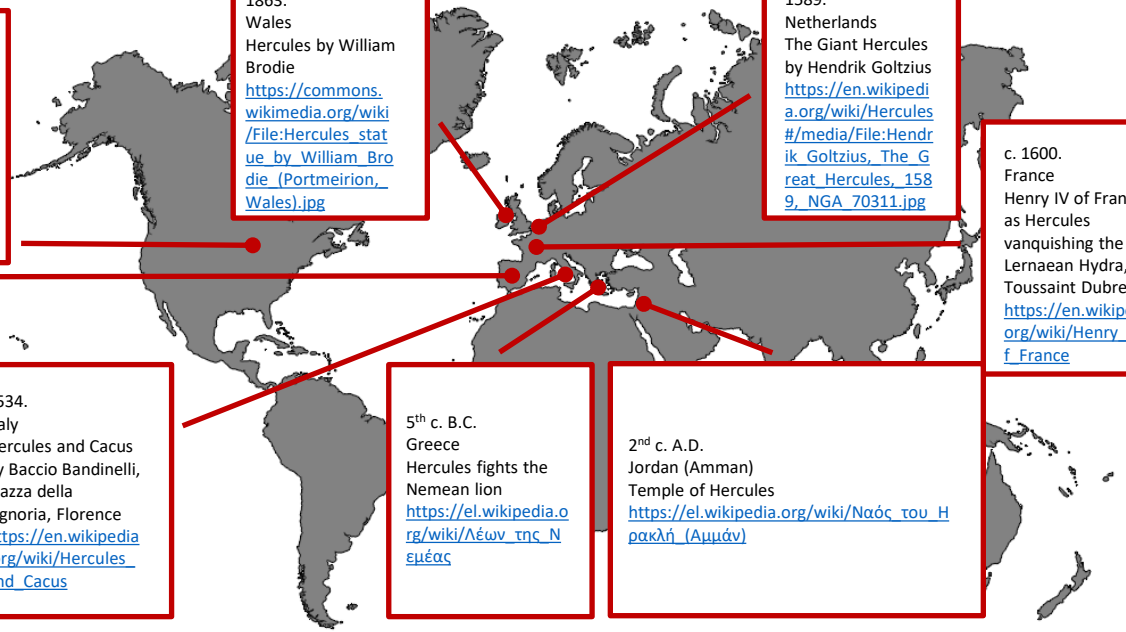
His legend formed the political culture of Greek cities-states in Archaic Period (~300 years)



Greek cultural exports



Greek cultural exports



1918.
Spain
Emblem of Andalusia
https://en.wikipedia.org/wiki/Emblem_of_Andalusia

1947.
U.S.A.
Achelous and Hercules by Thomas Hart Benton
https://commons.wikimedia.org/wiki/File:Thomas_Hart_Benton_-_Achelous_and_Hercules_-_Smithsonian.jpg

1863.
Wales
Hercules by William Brodie
https://commons.wikimedia.org/wiki/File:Hercules_statue_by_William_Brodie_(Portmeirion,_Wales).jpg

1589.
Netherlands
The Giant Hercules by Hendrik Goltzius
https://en.wikipedia.org/wiki/Hercules#/media/File:Hendrik_Goltzius,_The_Great_Hercules,_1589,_NGA_70311.jpg

c. 1600.
France
Henry IV of France, as Hercules vanquishing the Lernaean Hydra, by Toussaint Dubreuil
https://en.wikipedia.org/wiki/Henry_IV_of_France

c. 1704.
France
Hercules on the Pyre by Guillaume Coustou The Elder
https://en.wikipedia.org/wiki/File:Herakles_pyre_Coustou_Louvre_MR1809.jpg

20th c.
Spain
Pillars of Hercules at Ceuta
https://paganplaces.com/places/pillars-of-hercules-at-ceuta/

35-40 A.D.
Italy, Pompeii
Hercules carrying his son
https://upload.wikimedia.org/wikipedia/commons/thumb/5/5a/Hercules_Nessus_MAN_Napoli_Inv9001.jpg/500px-Hercules_Nessus_MAN_Napoli_Inv9001.jpg

1534.
Italy
Hercules and Cacus by Baccio Bandinelli, Piazza della Signoria, Florence
https://en.wikipedia.org/wiki/Hercules_and_Cacus

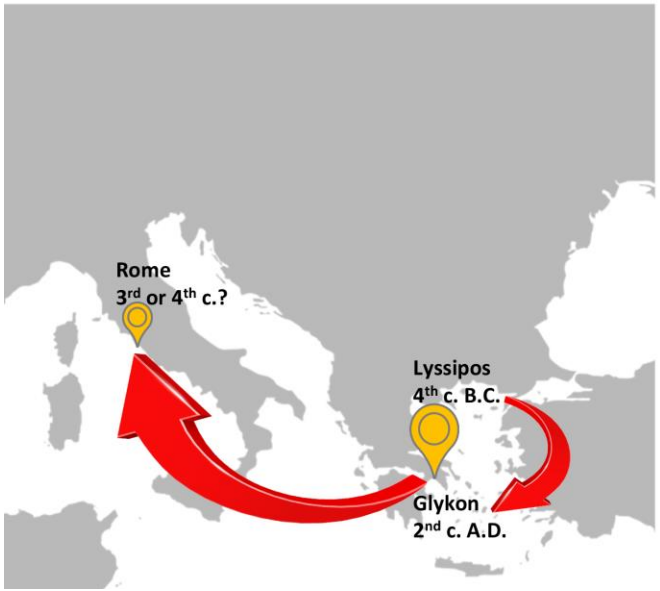
5th c. B.C.
Greece
Hercules fights the Nemean lion
https://el.wikipedia.org/wiki/Λέων_της_Νεμέας

2nd c. A.D.
Jordan (Amman)
Temple of Hercules
https://el.wikipedia.org/wiki/Ναός_του_Ηρακλή_(Αμμάν)

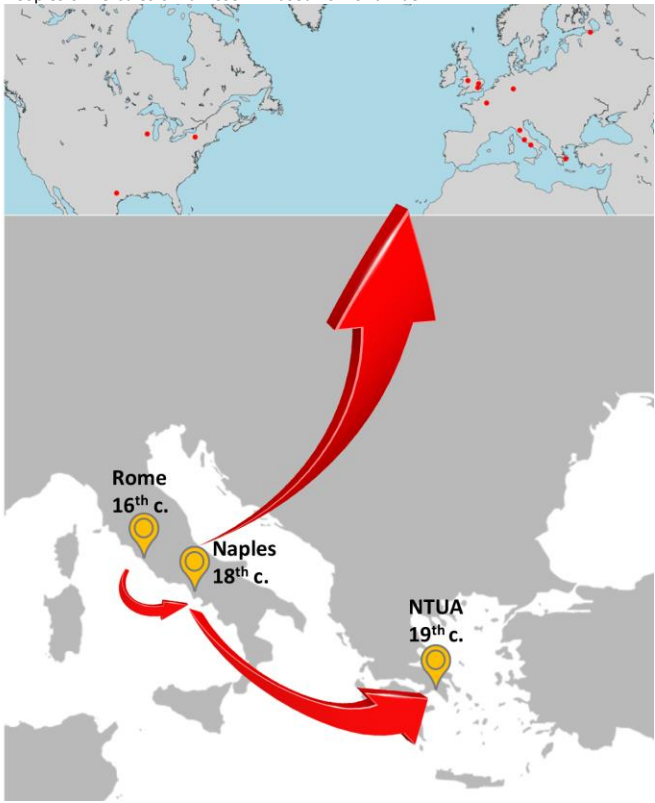
Greek cultural export and return (example) #1

Hercules Farnese. Archeological museum of Naples

https://commons.wikimedia.org/wiki/File:Herakles_Farnese_MAN_Napoli_Inv6001_n01.jpg

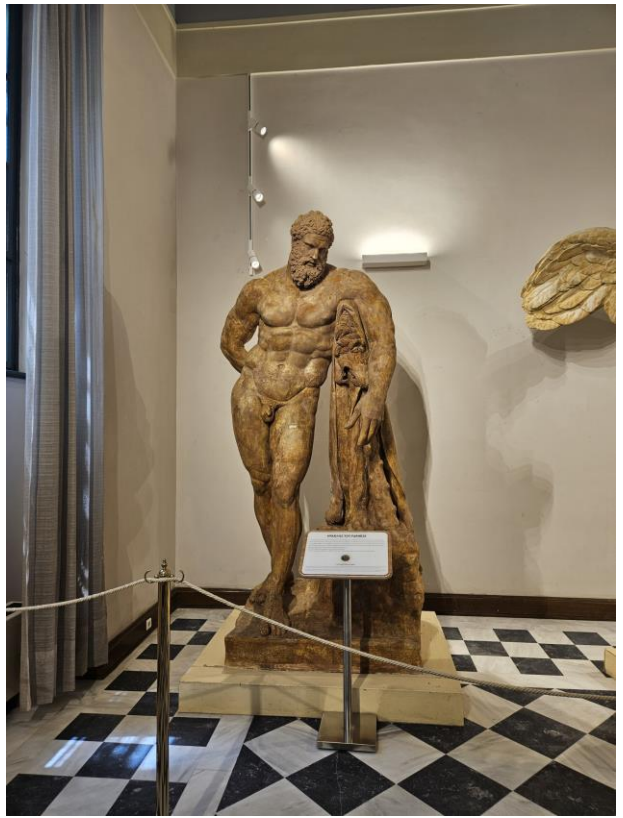


Copies of Hercules of Farnese in museums worldwide

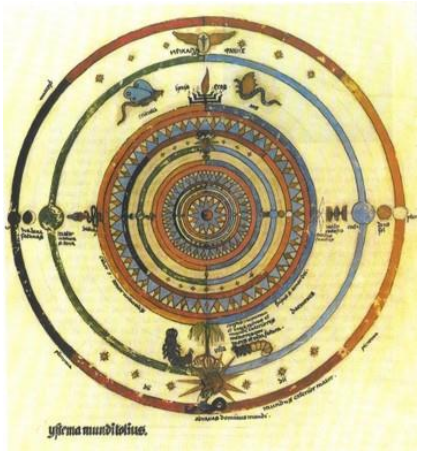


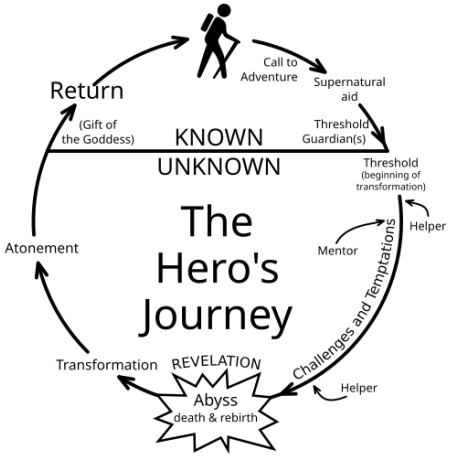
Greek cultural export and return (example) #2

Koronaios Aim., G.-F. Sargentis: "Hercules of Farnese." Laboratory of Building Materials NTUA, Athens, 2005. https://zenodo.org/records/3770542#.XqcwucgzaMo
G.-F. Sargentis, Hercules of Farneze, Supplementary material, National Technical University of Athens, Athens, 2025. https://www.itia.ntua.gr/en/docinfo/2526/



Why These Parallels?





Carl Jung: Culture heroes are archetypes from the collective unconscious — universal symbols hardwired in the human psyche.

The Flood = fear of annihilation
The Laborer = ego asserting control over chaos

Joseph Campbell: The Monomyth and "Hero's Journey" is the call to adventure.

- Dayu: flood control, social prosperity
- Hercules: madness, expiation

Trials (13 years / 12 labors)
Boon to society (order/dynasty)

Conclusions

Dayu https://kknews.cc/history/lvqz8v9.html

Dayu and Hercules are not copies — they are convergences.
They reveal a universal template for the culture hero:

- Tames nature (especially water)
- Sacrifices self for community
- Founds order — political, moral, cosmic

Even if we accept that Dayu and Heracles were not real figures, their legends reflected the collective unconscious of their civilizations — something perhaps more important than their historical existence.

Both heroes, in their own ways — Dayu through ingenious practice and Heracles through allegory — shaped the foundations of what we might call the “hydraulic civilization,” a prerequisite for societal prosperity.

The British Museum: Hercules and Achelous
https://www.britishmuseum.org/collection/object/H_WB-262

Epilogue

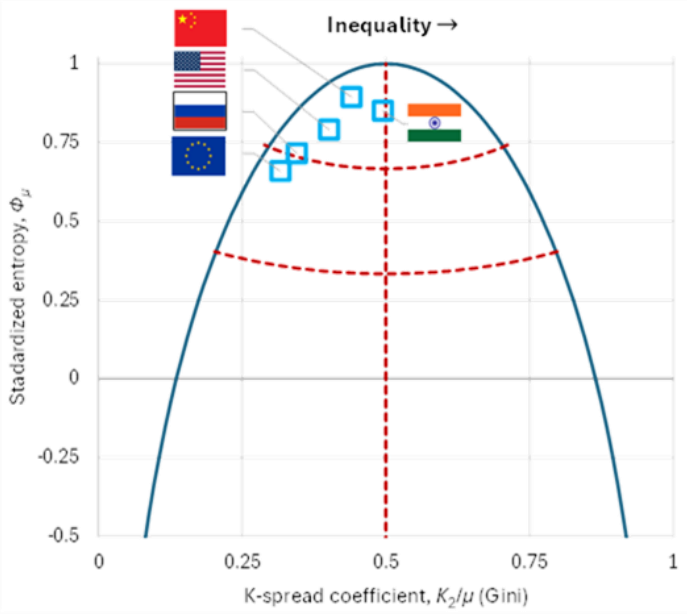
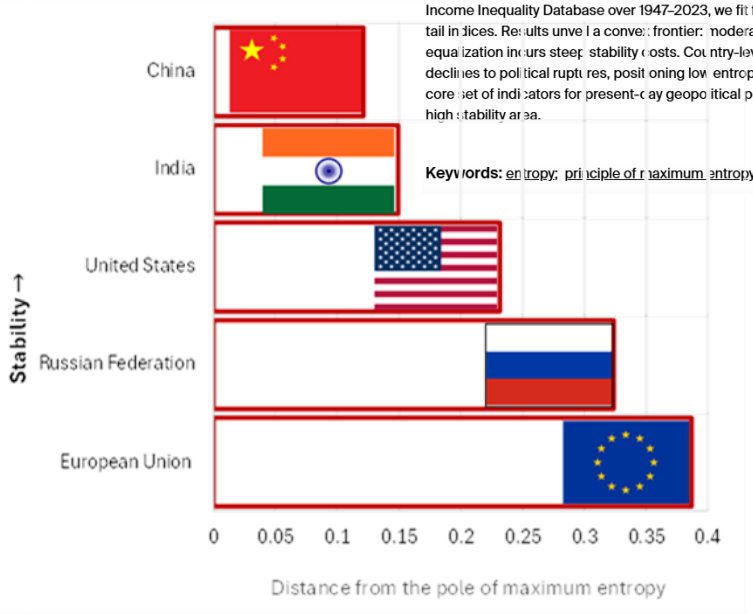
Koutsoyiannis, D.; Sargentis, G.-F. Tradeoff Between Entropy and Gini Index in Income Distribution. Preprints 2025, 2025110030. https://doi.org/10.20944/preprints202511.0030.v1

Preprints.org

Tradeoff Between Entropy and Gini Index in Income Distribution

Demetris Koutsoyiannis *, G.-Fivos Sargentis

Abstract

We investigate the fundamental tradeoff between entropy and Gini index within income distributions, employing a stochastic framework to expose deficiencies in conventional inequality metrics. Anchored in the principle of maximum entropy (ME), we position entropy as a key marker of societal robustness, while the Gini index, identical to the (second-order) K-spread coefficient, captures spread but neglects dynamics in distribution tails. We recommend supplanting Lorenz profiles with simpler graphs such as the odds and probability density functions, and a core set of numerical indicators (K-spread K_2/μ, standardized entropy $\Phi\mu$, and upper and lower tail indices, ξ, ζ) for deeper diagnostics. This approach fuses ME into disparity evaluation, highlighting a path to harmonize fairness with structural endurance. Drawing from percentile records in the World Income Inequality Database over 1947–2023, we fit flexible models (Pareto–Burr–Feller, Dagum) and extract K-moments and tail indices. Results unveil a convex frontier: moderate Gini reductions have little effect on entropy, but aggressive equalization incurs steep stability costs. Country-level analyses (Argentina, Brazil, South Africa, Bulgaria) link entropy declines to political ruptures, positioning low entropy as a precursor to instability. On the other hand, analyses based on the core set of indicators for present-day geopolitical powers (China, India, USA and Russia) show that they are positioned in a high stability area.

Keywords: entropy; principle of maximum entropy; K-moments; stochastics; wealth; income profiles; Gini index; stability