

Main Points

- 1) Recap from 27 November
- 2) The biggest shift in human history: the hunter-gatherer to agriculturalist transition
 - factors predisposing species to domestication
 - example: a precursor to domestication involving a primate and a canid
 - example: a biogeographic hypothesis as an alternative to a racist hypothesis
- 3) The mixed blessing of agriculture to the third chimpanzee

For extra credit, fill out your online evaluation of this course

Pre-Reading: Weds 6 Dec = Brown et al 2014

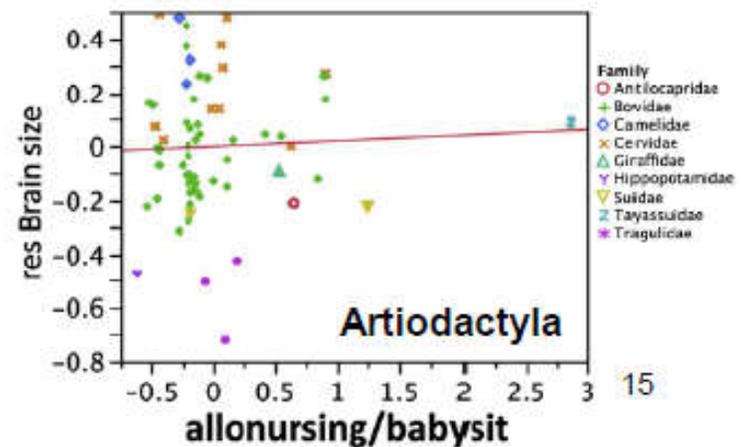
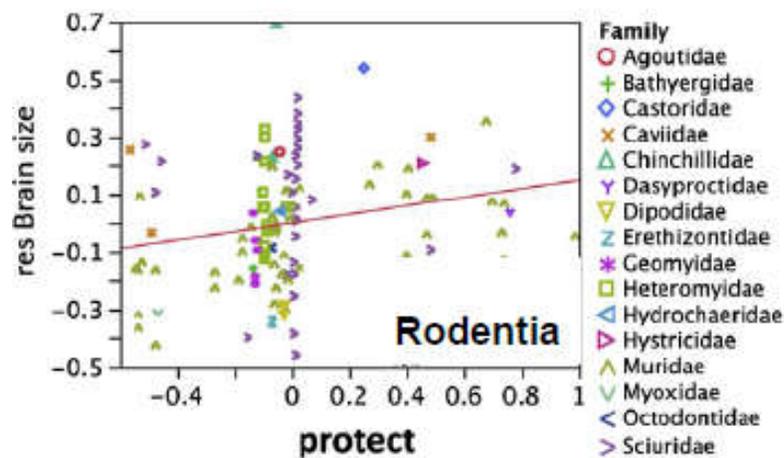
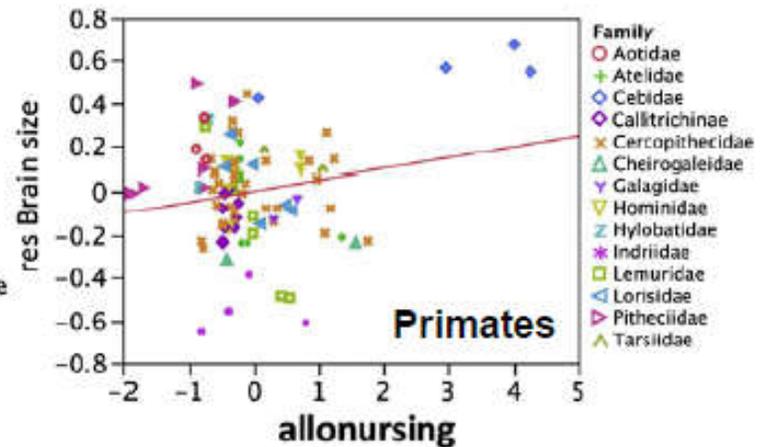
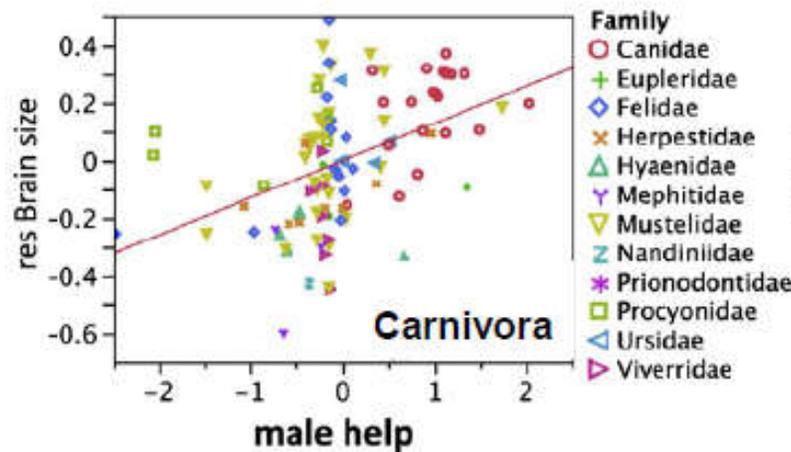
Monday 4 Dec = optional test 3.

Wednesday 6 Dec = class starts at 130pm.

Terms: domestication

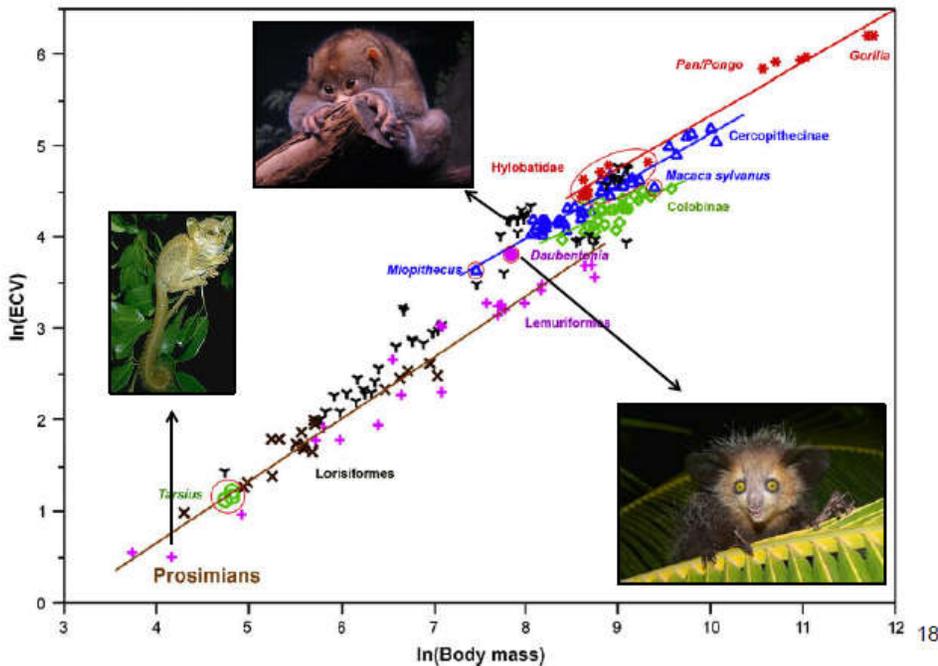
Lecture 19 recap: relative brain size is associated positively to allomaternal care across mammals.

Brain size, allomaternal care, and longevity

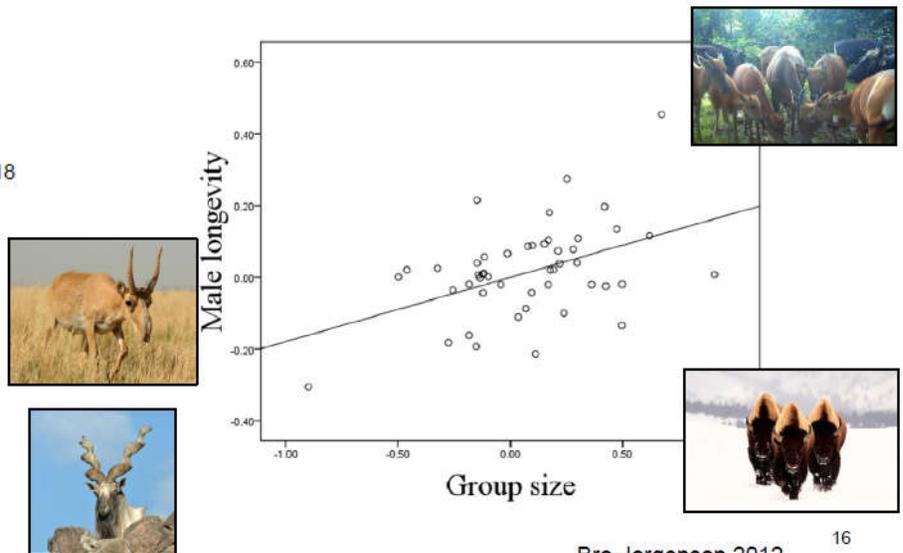


Lecture 19 recap: relative brain size is associated with herding behavior in ungulates and social complexity in primates. Both herding behavior and social complexity are associated with long lifespans.

Brain size, social flexibility, and longevity



Brain size, anti-predator defense, and longevity



Lecture 19 recap: leaders in mammal societies influence movement, food acquisition, within-group conflict mediation, and between group interactions (especially war).



Why do we get old and die of “natural causes”?

- extrinsic mortality is increasingly likely the longer an individual lives, so few individuals will live long enough to enjoy the advantage of reduced intrinsic mortality at old ages.
- the ability of natural selection to “weed out” genes that increase intrinsic mortality (or decrease fertility) declines with age.
- this results in strong selective pressure to decrease intrinsic mortality (or increase fertility) early in life, but not late in life.



The (pre)history of mammal domestication

domestication = captive breeding of species by humans, which thereby modifies species genetically from wild ancestors for the purposes of economic use by humans.

Dukha girls and caribou/reindeer, Mongolia



Caucasian man, horses, and cattle, Wyoming



The (pre)history of mammal domestication

A 13,000 year history with so many questions!

-- why did this operate on so few (mammalian) species, in so few places? 14 out of 148 ungulates >90lbs domesticated; 100 out of 20,000 wild plants domesticated.

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The (pre)history of mammal domestication

A 13,000 year history with so many questions!

- why did this operate on so few (mammalian) species, in so few places? 14 out of 148 ungulates >90lbs domesticated;
- why did people adopt it?
- how did it spread?

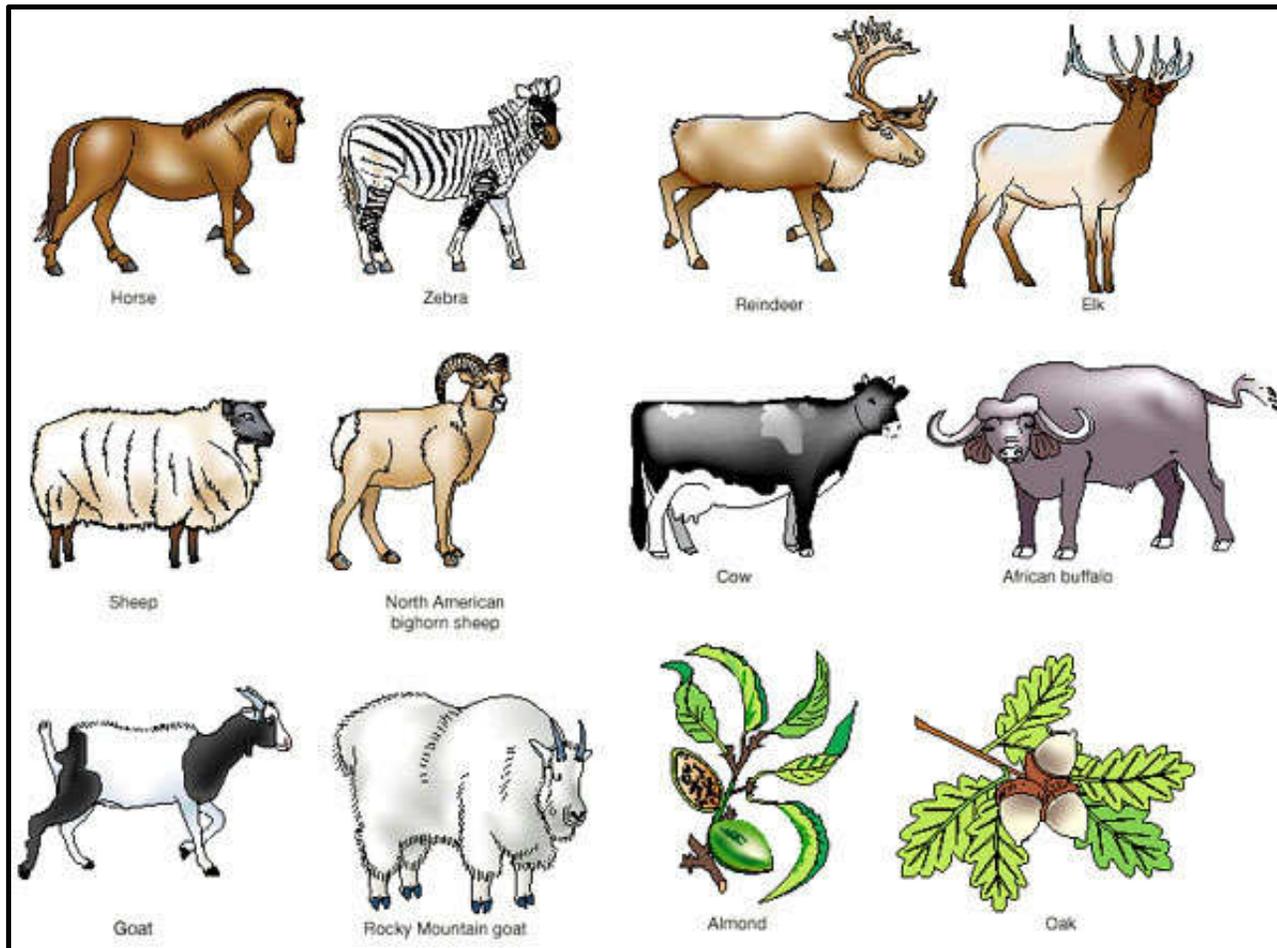
Dukha girls and caribou/reindeer, Mongolia



Caucasian man, horses, and cattle, Wyoming



Characteristics of domesticated mammals



Pairs of related (sort of) mammals.

Domesticated species are on the left.

Wild counterparts are on the right.

Characteristics of domesticated mammals

- 1) Domesticated mammals cannot be picky eaters.



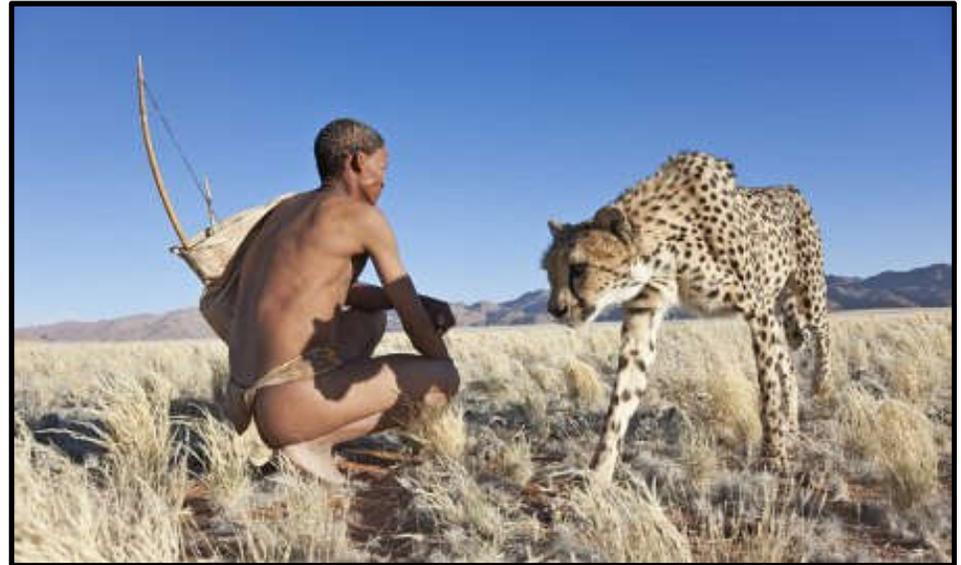
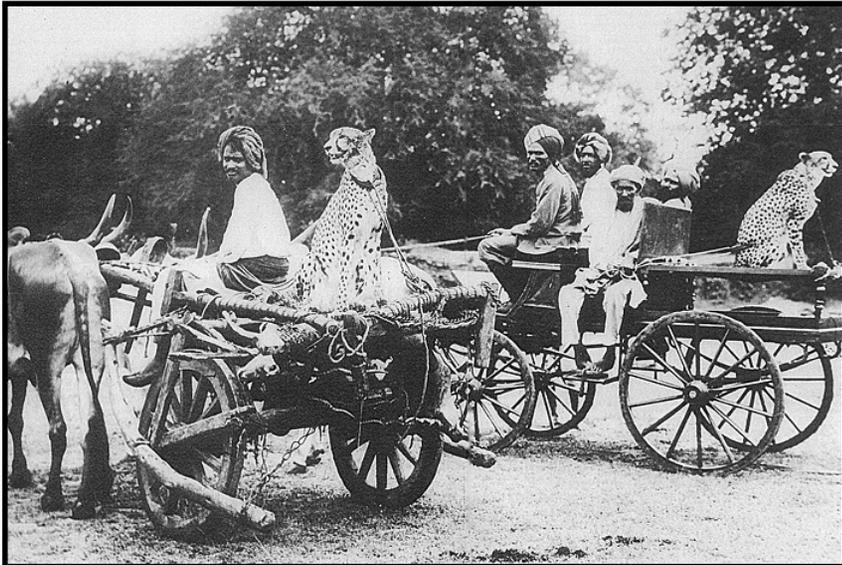
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- 3) Domesticated mammals often are not territorial, nor do they have elaborate courtship rituals.



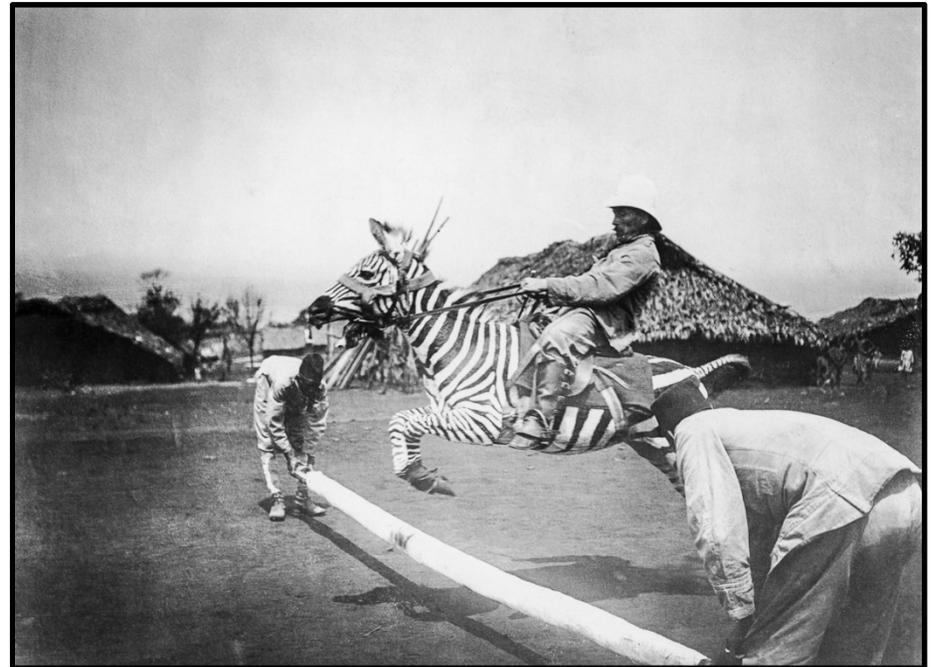
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Characteristics of domesticated mammals

- 1) Domesticated mammals cannot be picky eaters.
- 2) Ideally, domesticated mammals should reach maturity quickly.
- 3) Domesticated mammals often are not territorial, nor do they have elaborate courtship rituals.
- 4) Domesticated mammals usually are more docile than their wild counterparts.
- 5) Domesticated mammals are not typically “flighty”.



Characteristics of domesticated mammals

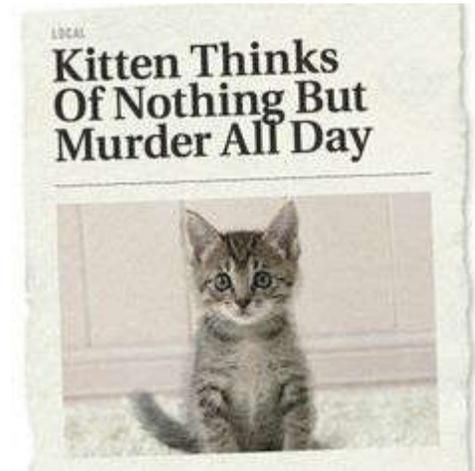
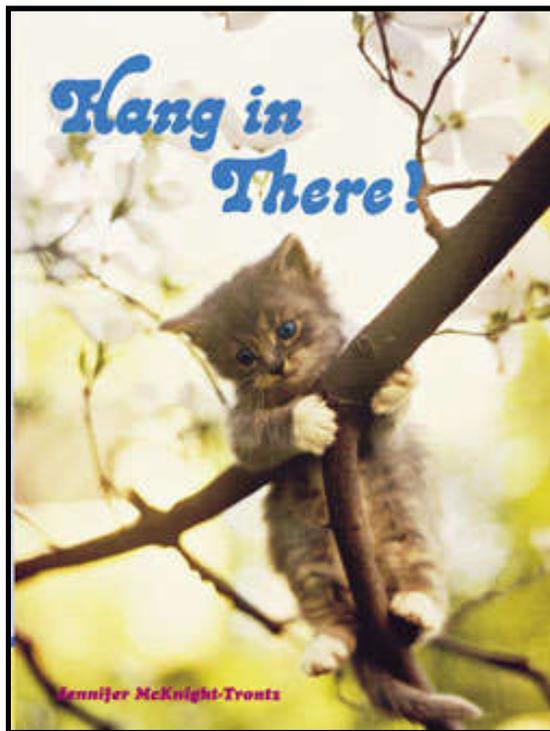
6) Domesticated mammals usually have a dominance hierarchy with leadership, and come to recognize humans as their “owners”.



Characteristics of domesticated mammals

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An exception?



the ONION[®] Inspirational Poster Kitten Falls To Death After 17 Years

Inspirational Poster Kitten Falls To Death After 17 Years

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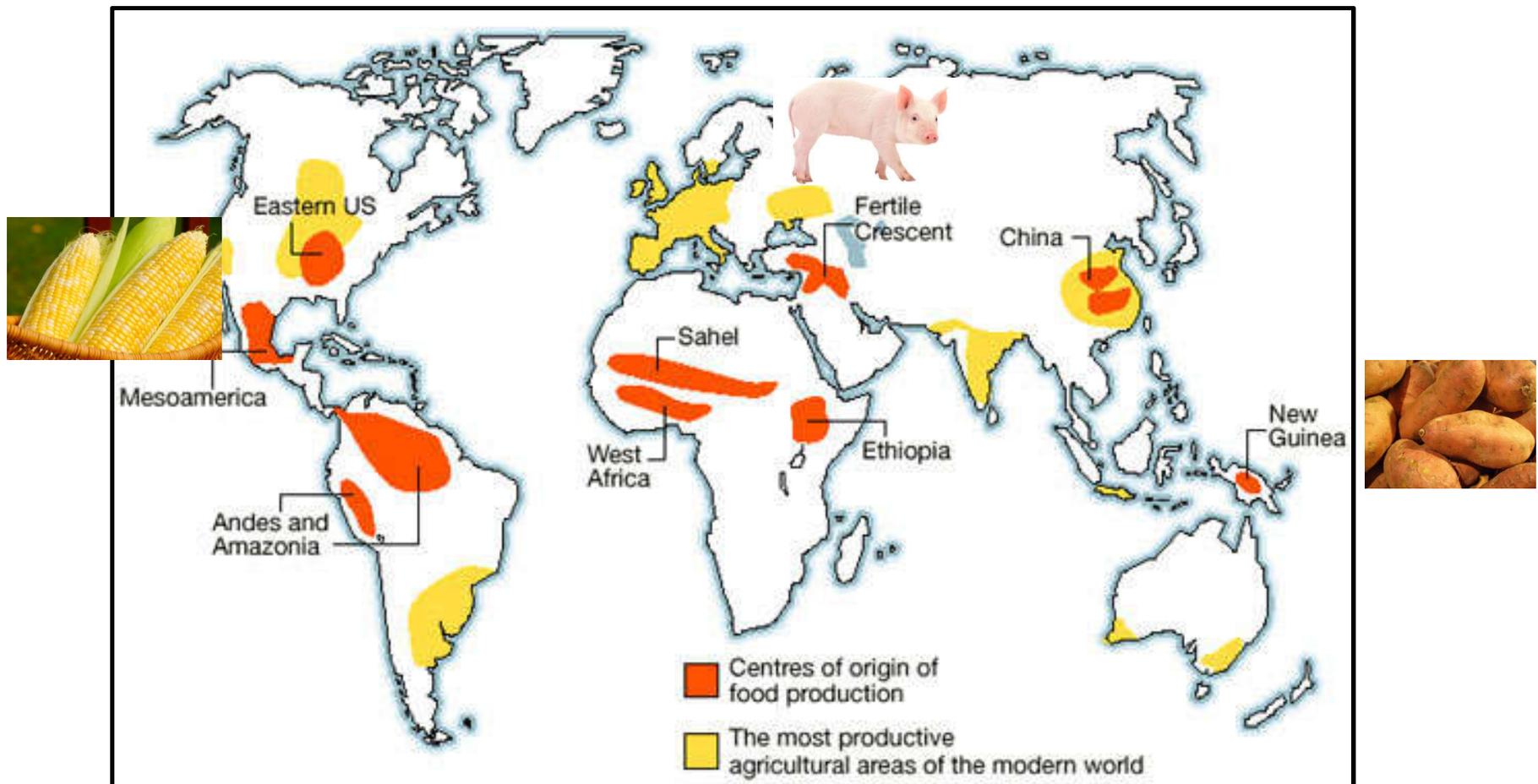
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The Onion





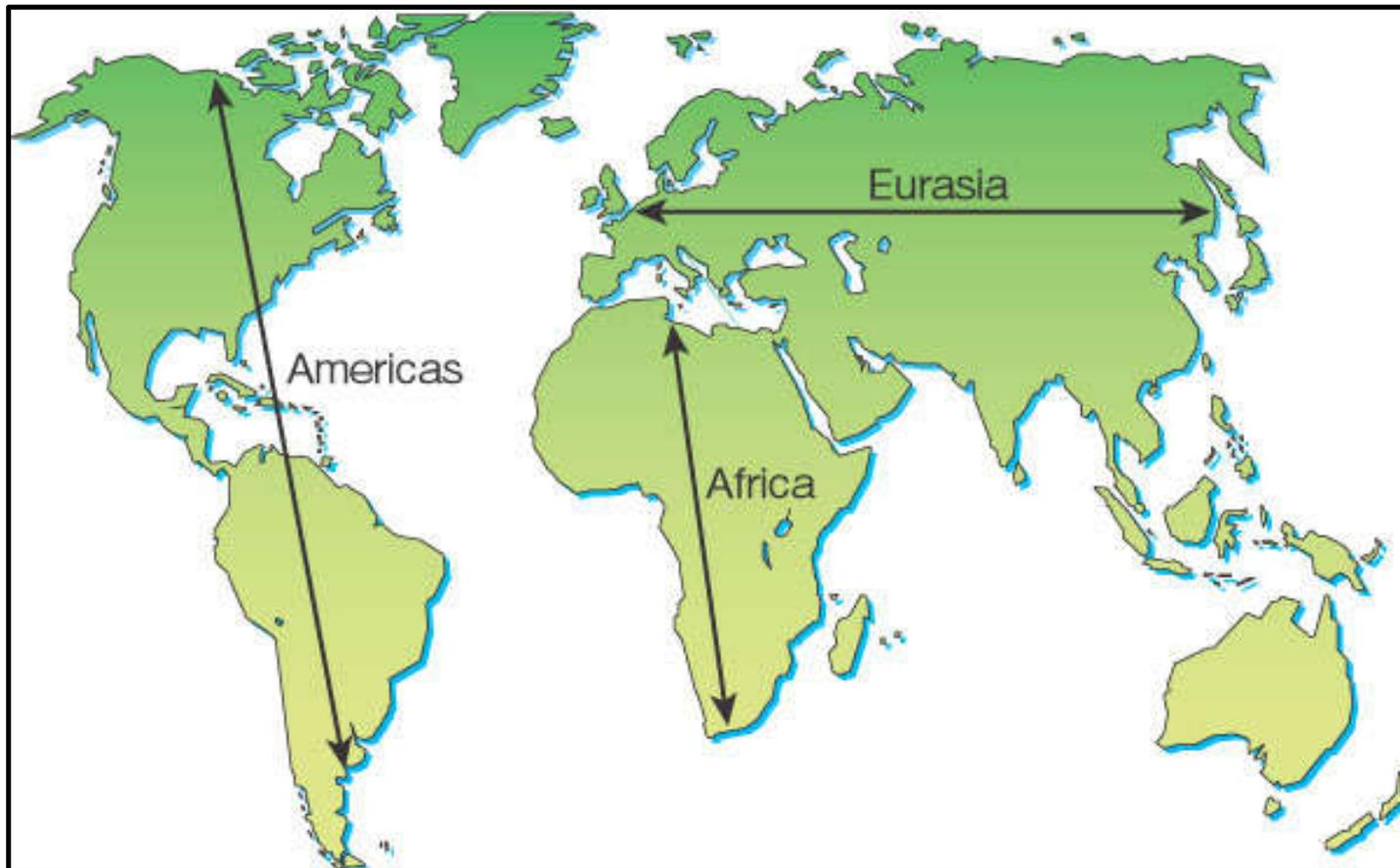
The biogeography of agriculture

Productive areas are rarely where animals and plants were first domesticated.



The biogeography of agriculture

Locations at the same latitude share the same daylengths and seasonalities, and often have similar climates, and require less evolutionary change/adaptation of domesticated mammals and plants.

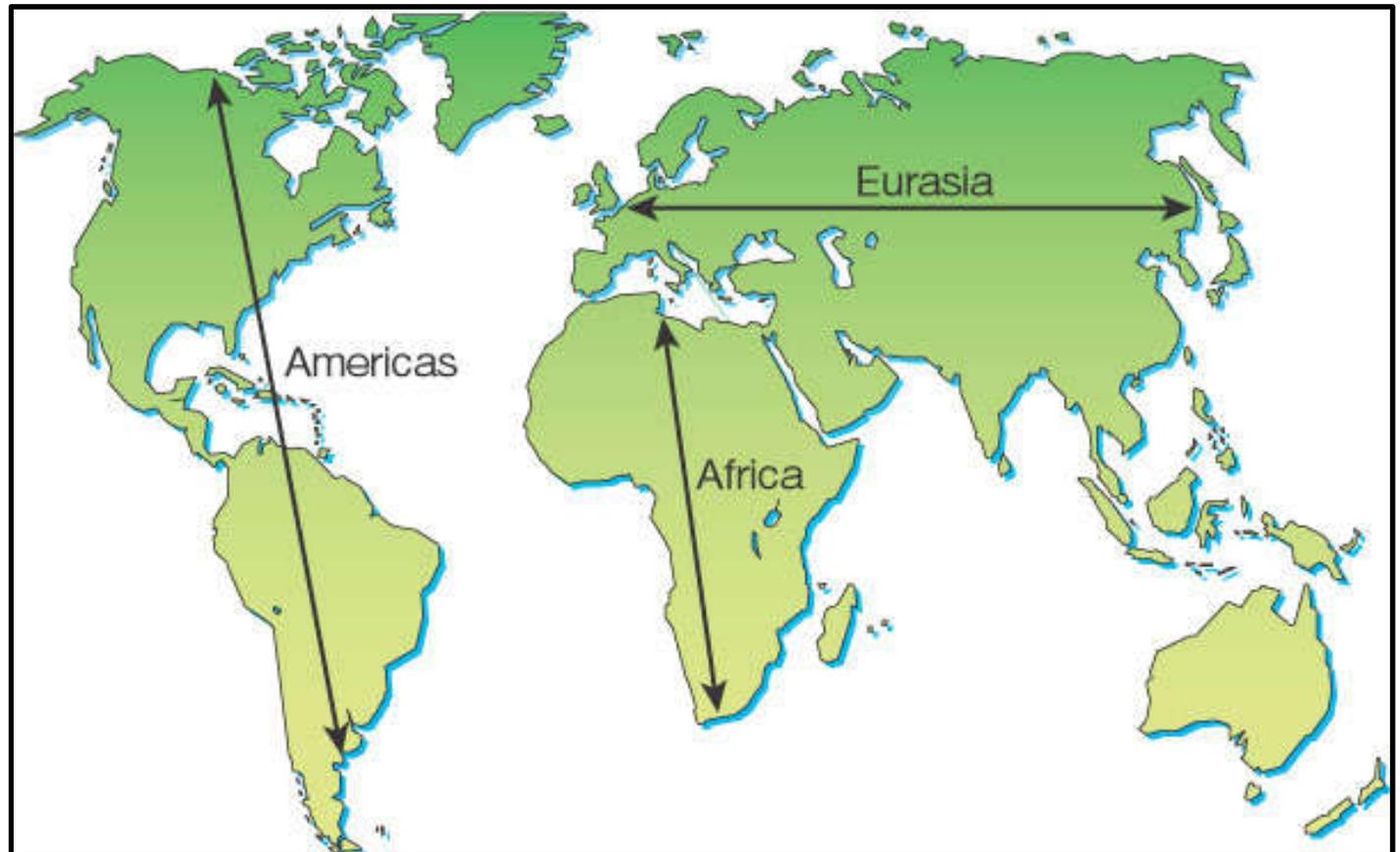


The biogeography of agriculture

The east-west orientation of Eurasia (relative to the north-south orientation of Africa and the Americas) may explain current lags in economies, medicine, and technologies of developing countries.

--3300-3000 BC:
Spread of horses
and wheeled carts
from eastern Russia
to western Europe.

-- 5400-4400 BC:
Spread of chickens
from China to western
Europe.

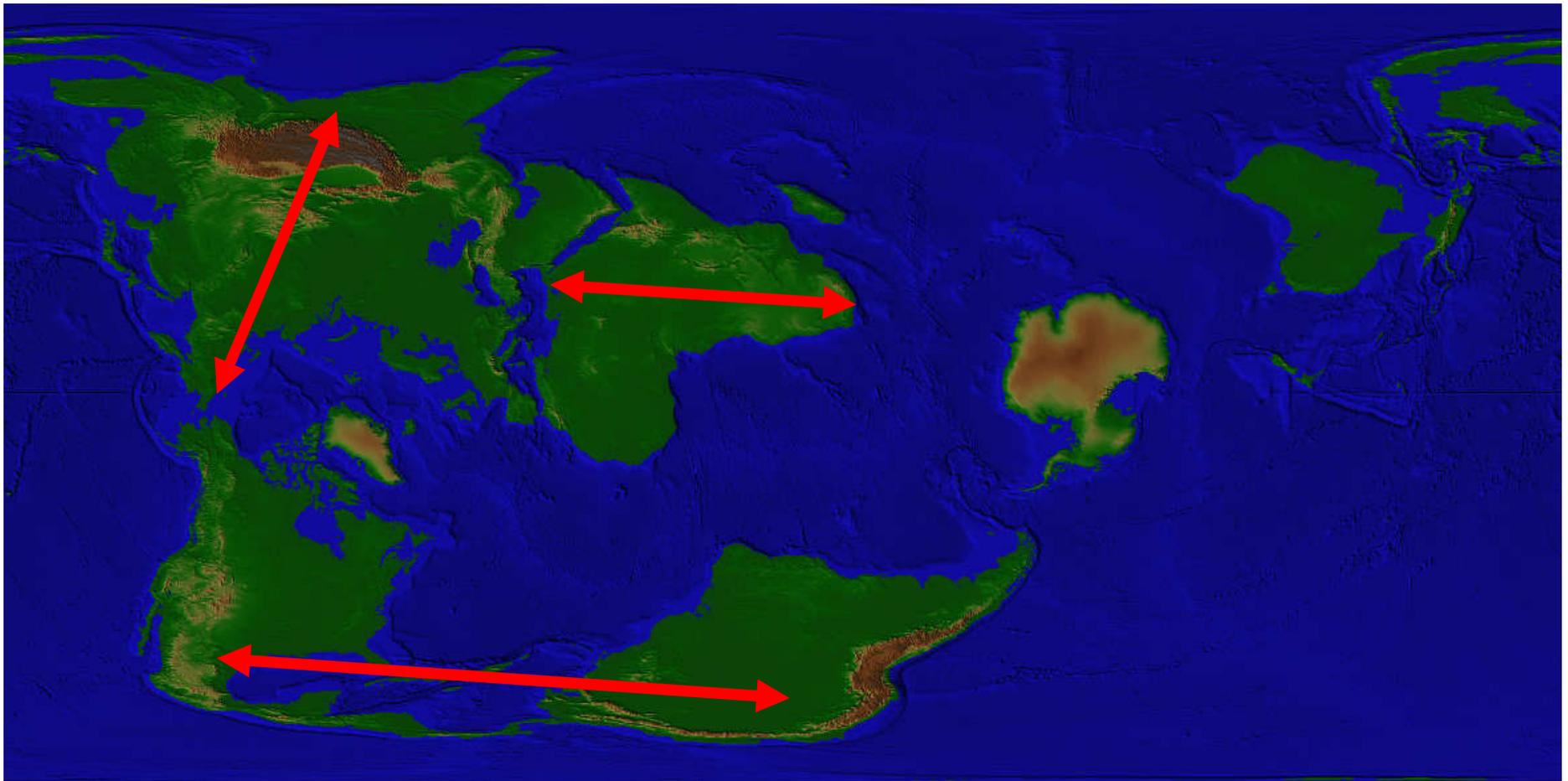


The biogeography of agriculture

Domestication permitted the development of tools of conquest—primarily firearms and steel—that enabled early agriculturalists to outcompete, assimilate, or kill traditional hunter-gatherers.

The biogeography of agriculture

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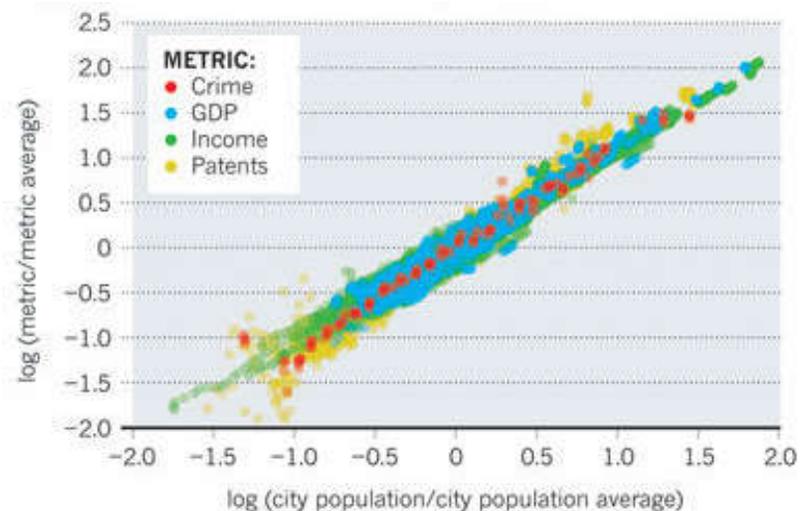


Benefits of agriculture?

- **Domestication (and agriculture in general) resulted in:**
 - art
 - language
 - more reliable food supplies
 - more diverse diets
 - division of labor (?)

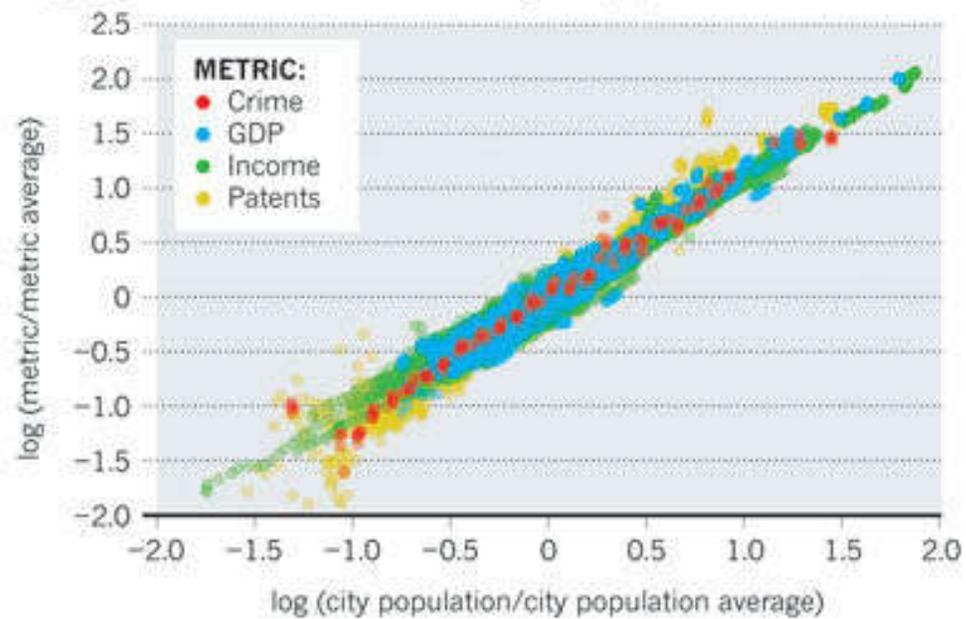
Costs of agriculture?

- **Domestication (and agriculture in general) resulted in:**
 - living with strangers
 - on average, more work per individual
 - on average, lower social status
 - reduced status of women in most societies
 - reduced status of the elderly in most societies
 - poorer health and nutrition
 - larger (though not necessarily more frequent) wars
 - more government to prohibit cheating and to resolve conflicts within and among societies of strangers



PREDICTABLE CITIES

Data from 360 US metropolitan areas show that metrics such as wages and crime scale in the same way with population size.



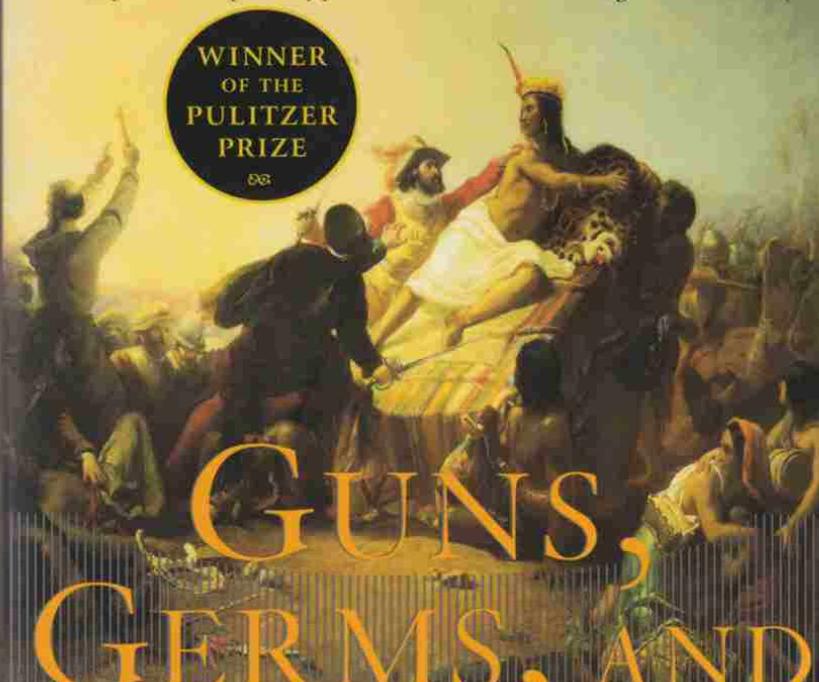
The history of domestication points to a solution for those favoring less government...



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What Can We Learn from Traditional Societies?

