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• Environmental Ethics and Land Management
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ENVR E-120

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Elements of Ethical Reasoning

Timothy C. Weiskel

Session 3 – Part 2
6 October 2005

Harvard University Extension School
Fall Semester 2005



Well, we each have our “niche” in life’s matrix (whether we know it or not)...

How do you define *your* “niche?”

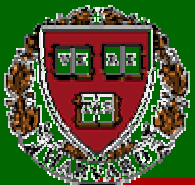
How can we define it more generally in ecosystemic terms?



“That niche used to be the cigarette-machine niche, then it was the water-cooler niche, and now it’s Mr. Pendleton’s niche”

(Booth)

Tim Weiskel - 2



One way to describe a “niche” is to define it as a “position” in a food chain (or more precisely) a resource web.

Life's not so complicated web

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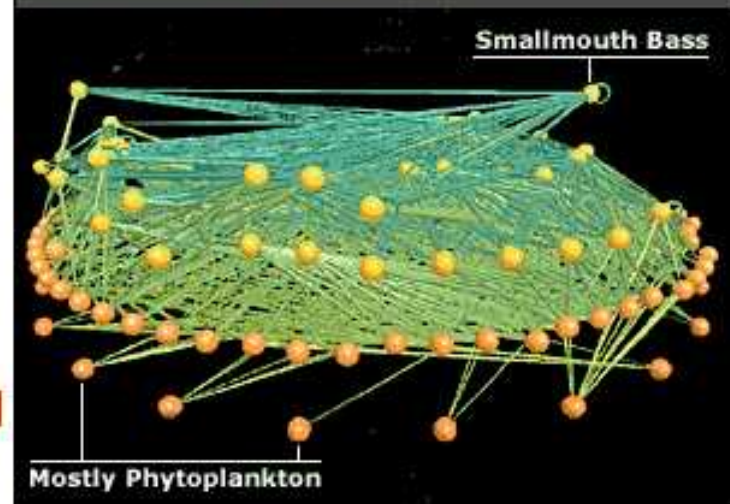
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FOOD: HOW THE WEB WORKS



Working at Little Rock Lake in Wisconsin, researchers tracked the connections in the food web - predators like the smallmouth bass at the top and tiny free-floating plants (phytoplankton) at the bottom

By Arran Frood

It is easy to claim that everything is connected to everything else, but a hard proposition to test scientifically.

Now research by ecologists studying food webs has shown this may after all be the case.

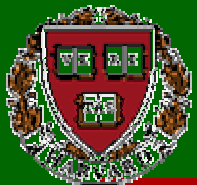
They found species are much more closely linked to each other than previously thought.

“**People should not be so confident that they can predict the consequences of species extinctions**”



One way to describe a “niche” is to define it as a “position” in a food chain (or more precisely) a resource web.

Or a “stage” in the flow of energy through biomatter.



You are in: Science/Nature

Monday, 30 September, 2002, 21:02 GMT 22:02 UK

Life's not so complicated web

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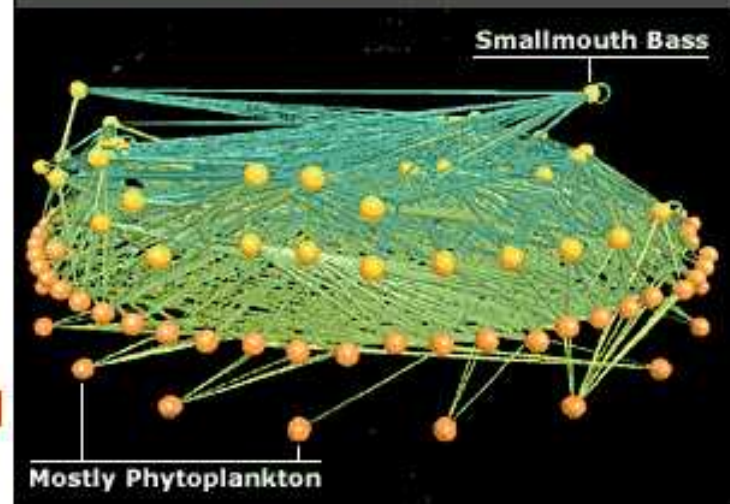
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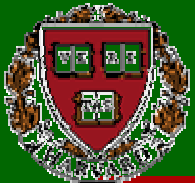
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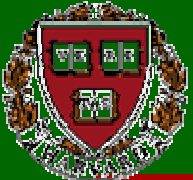
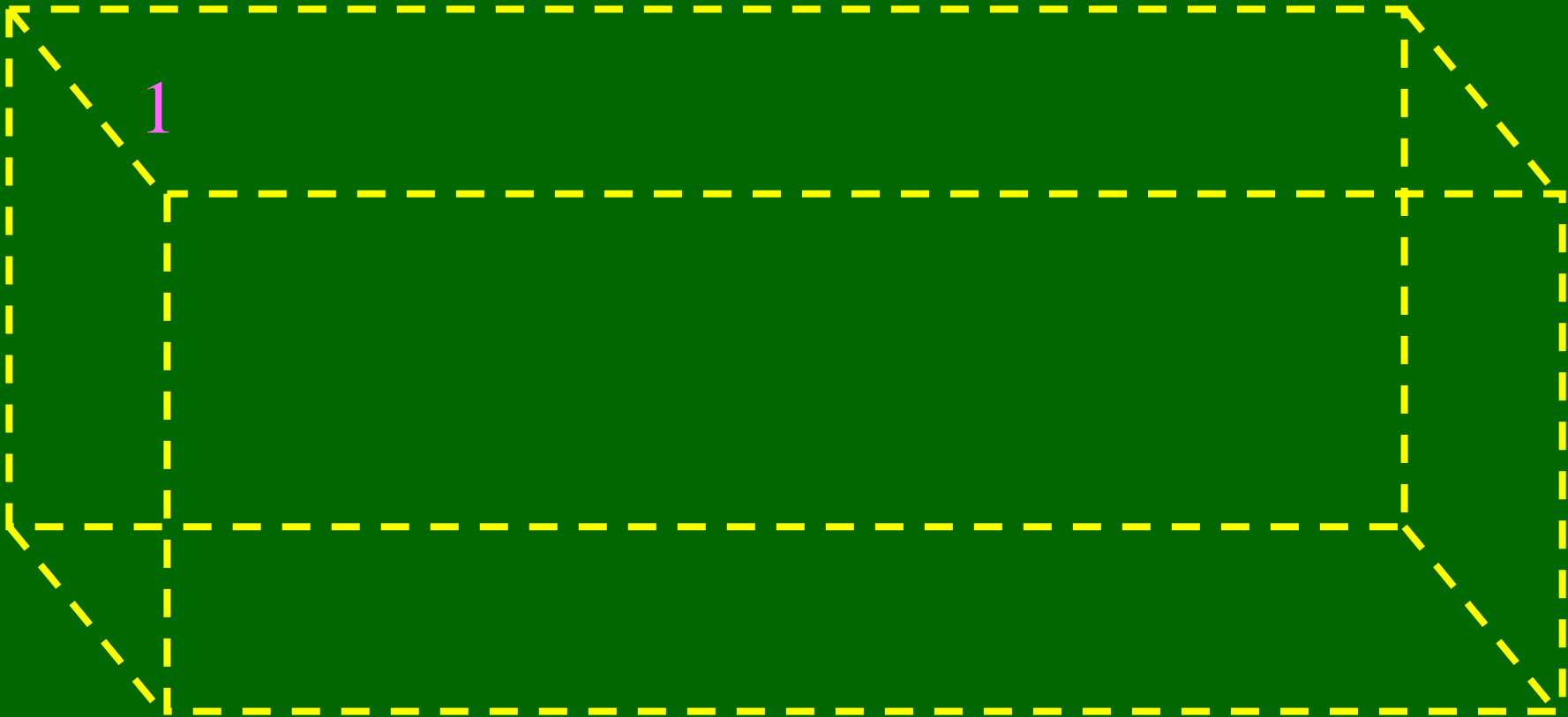
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- A more accurate way to define a niche is to say...

A Niche is an “N-dimensional hypervolume”



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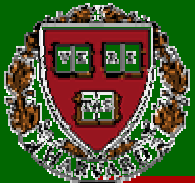
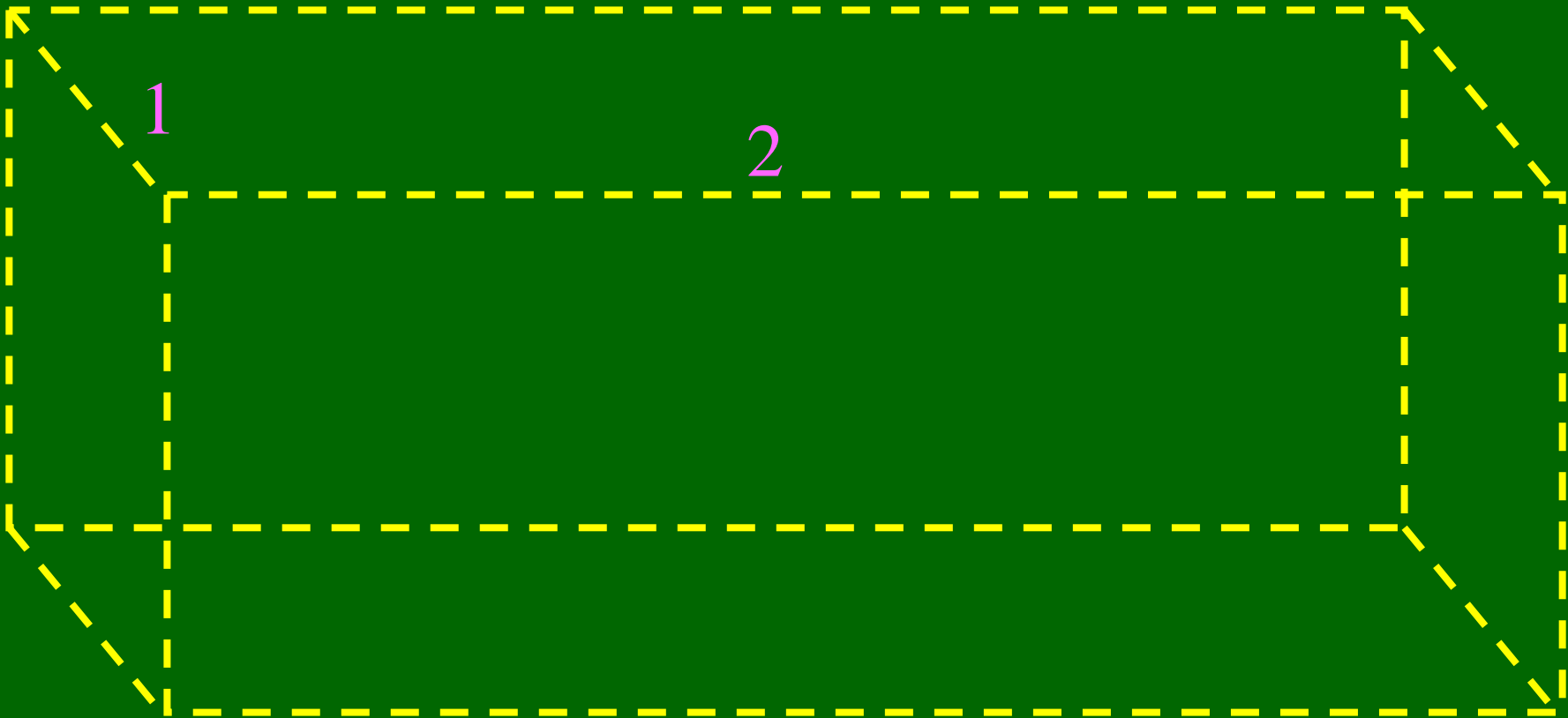
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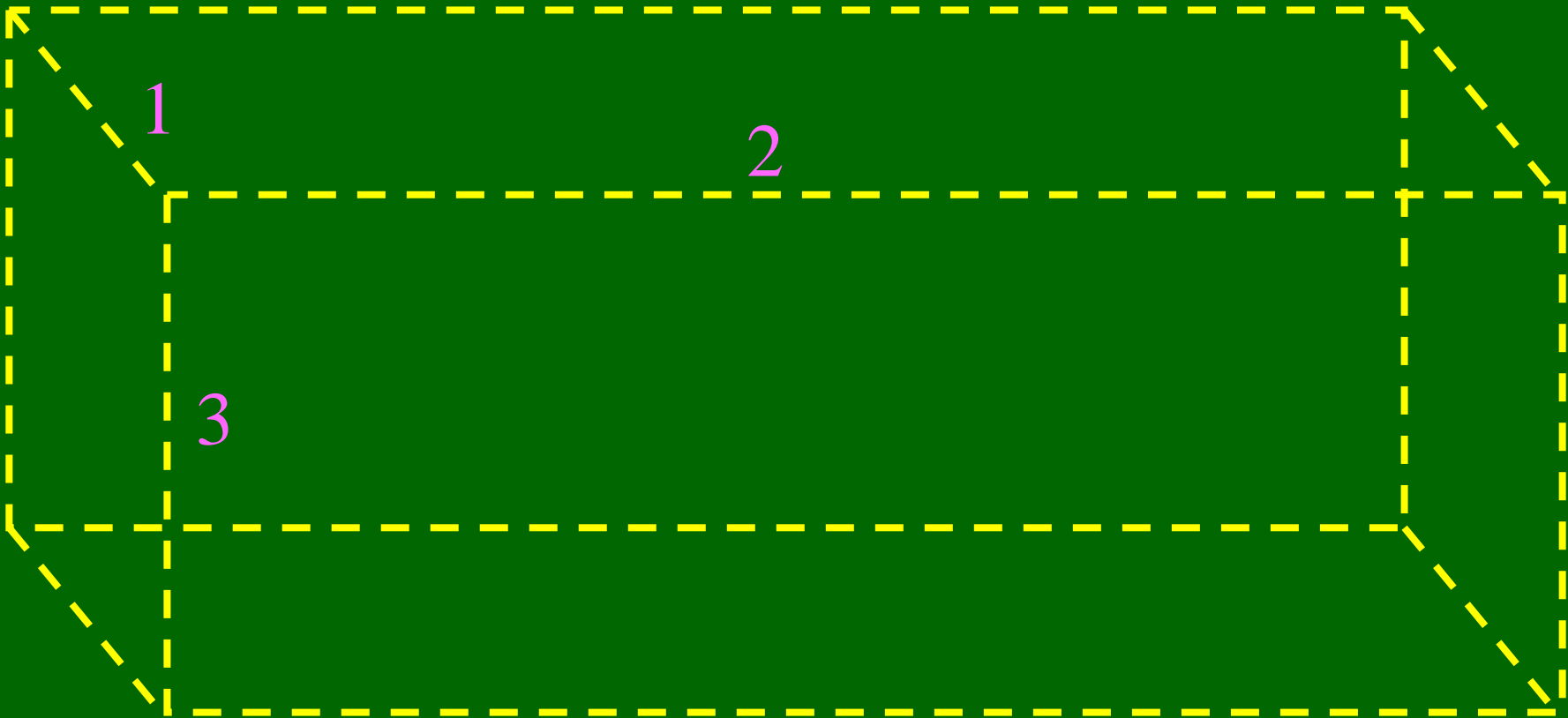
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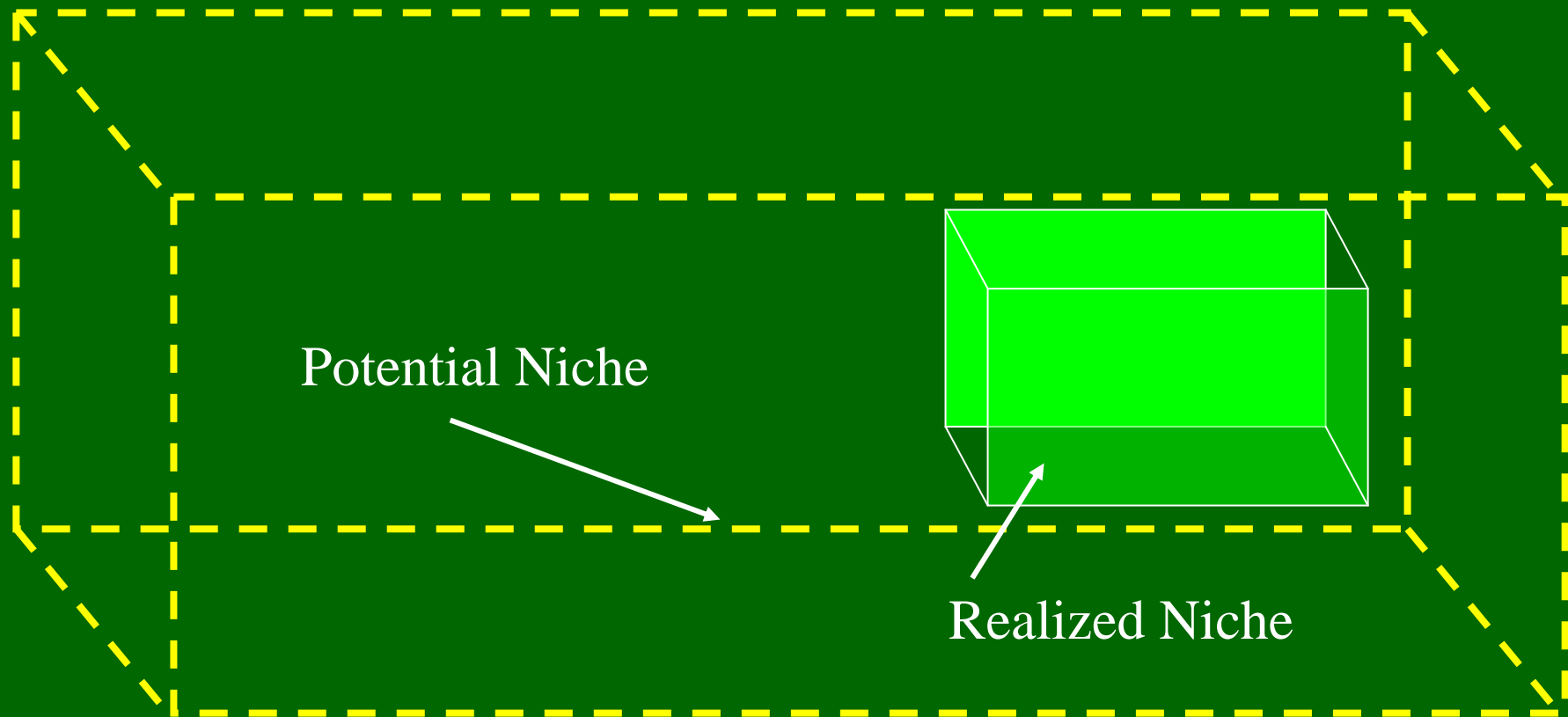
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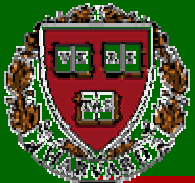
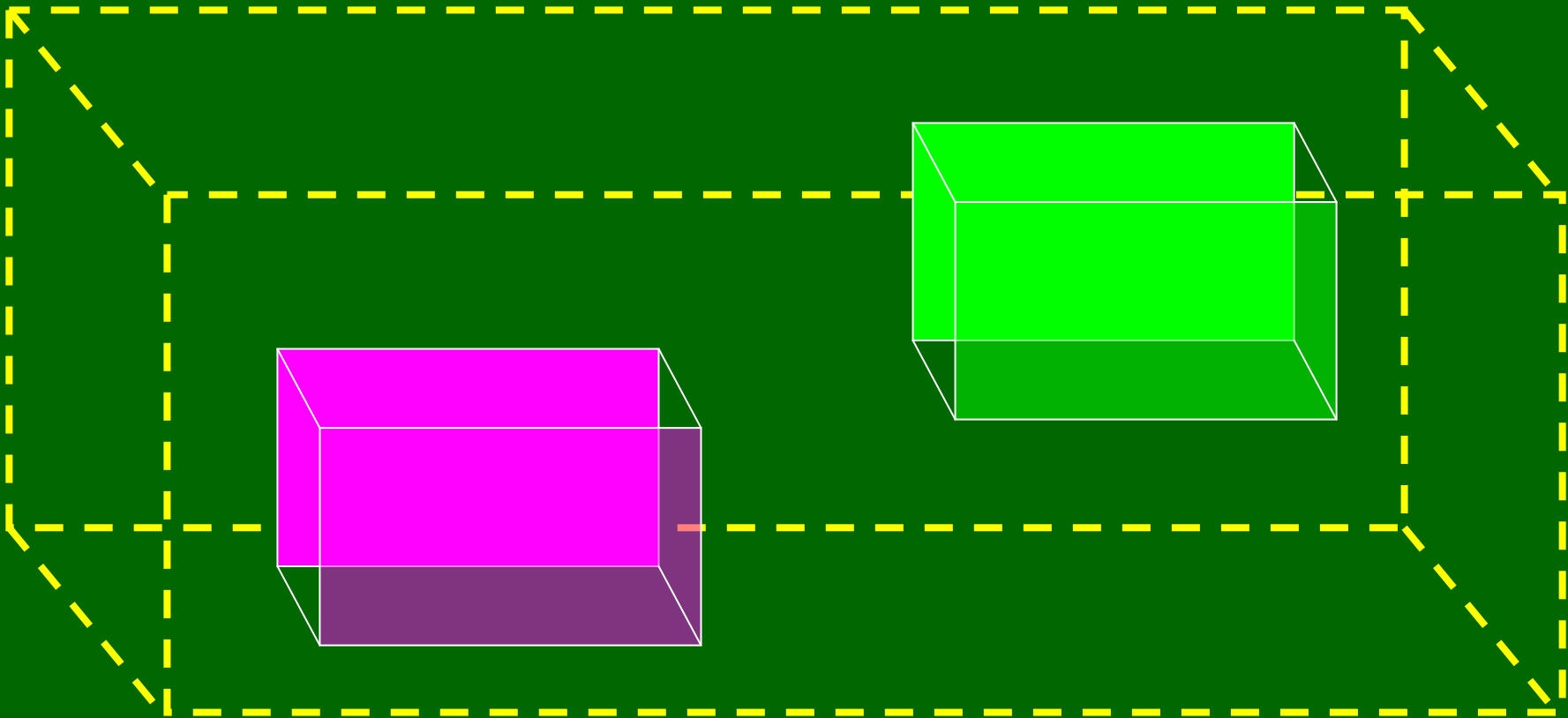


All species have a *potential* niche and *realized* niche

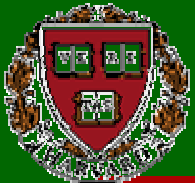
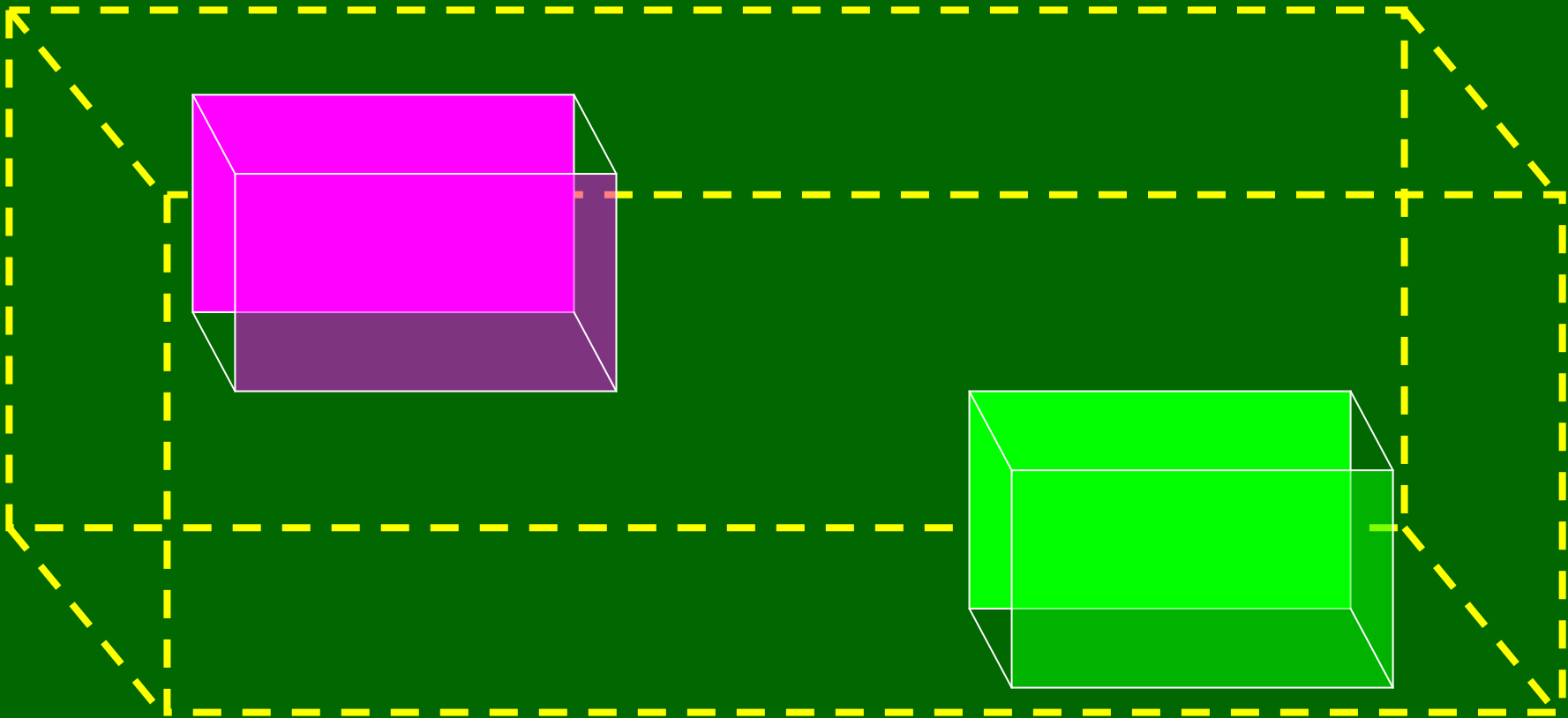


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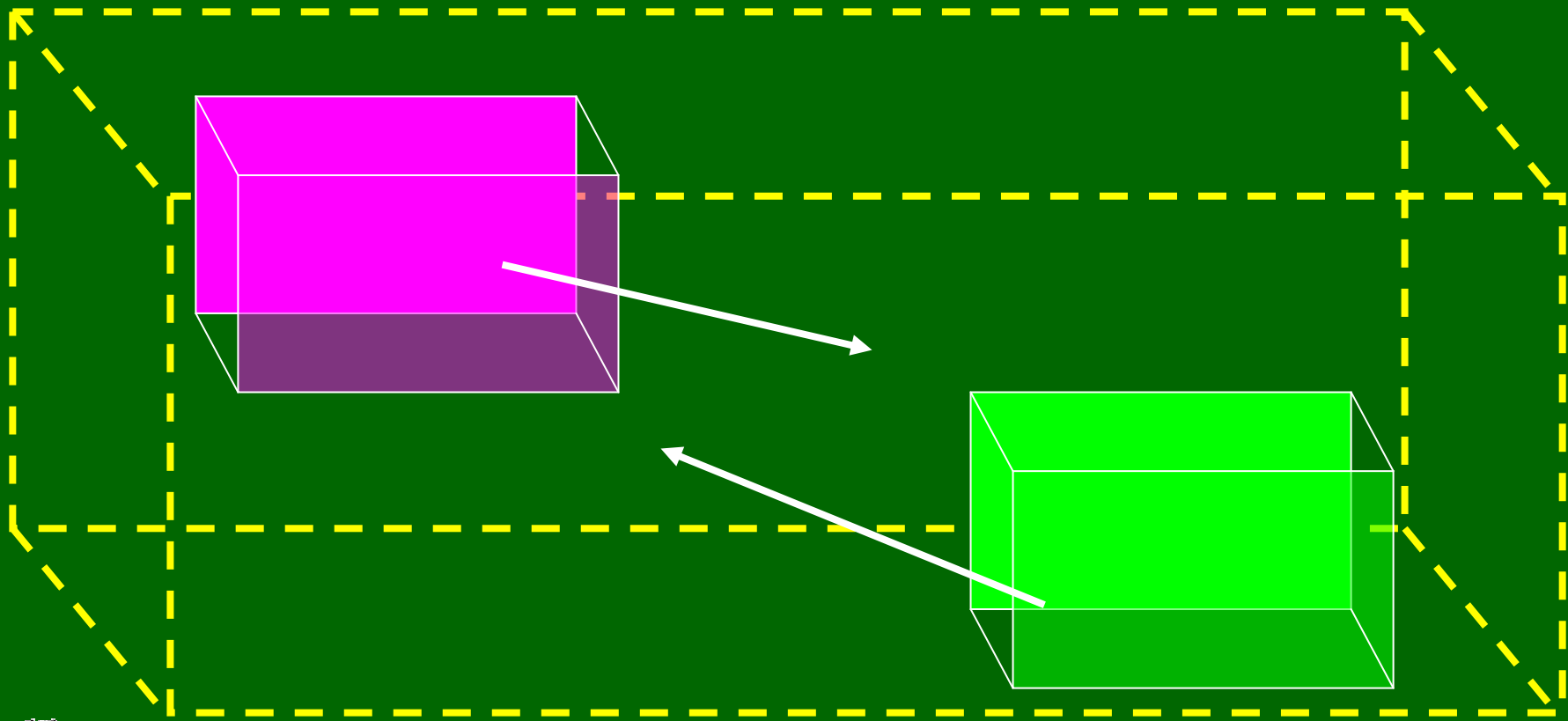
Other species can find their realized niche in our
“potential niche” but not share our “realized niche”

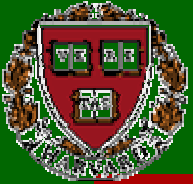
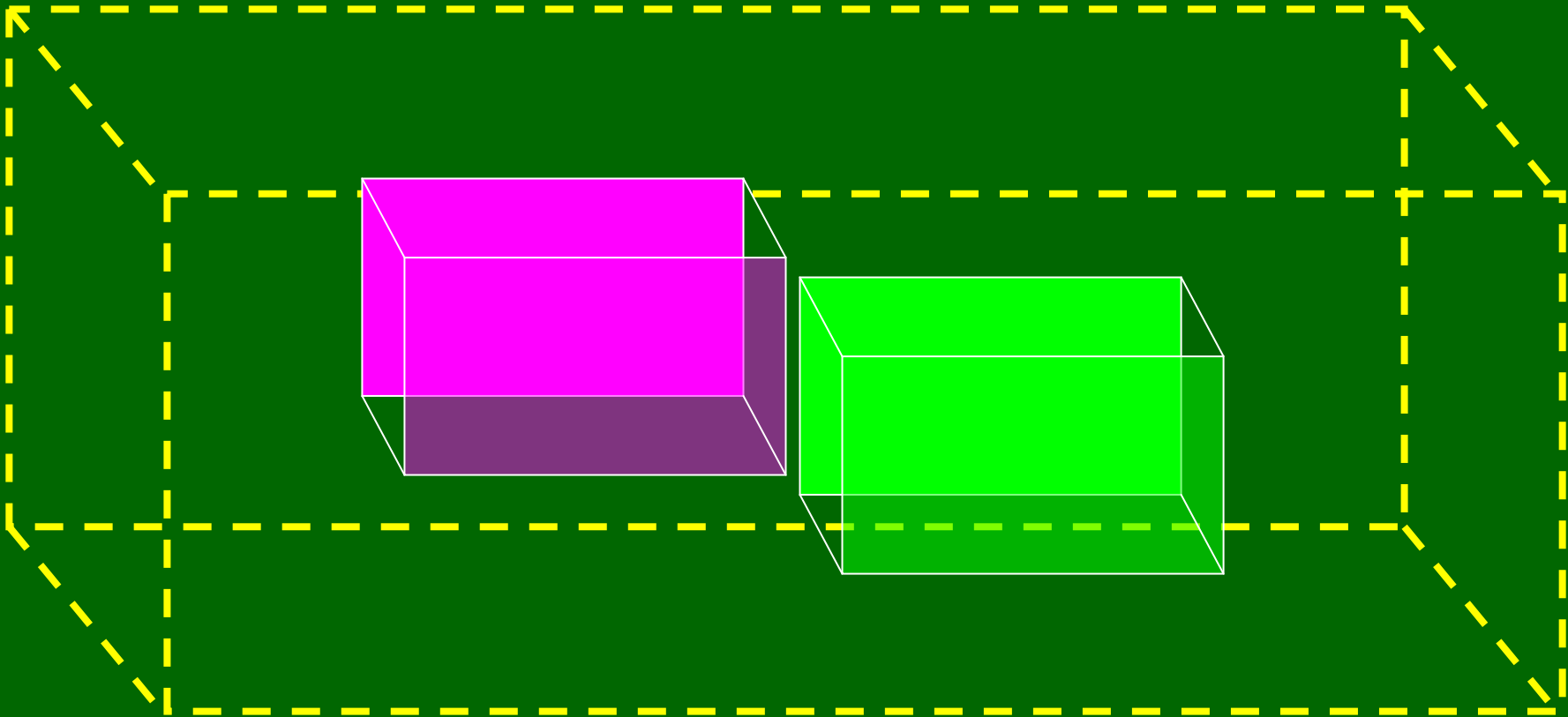


A species realized niche can change over time



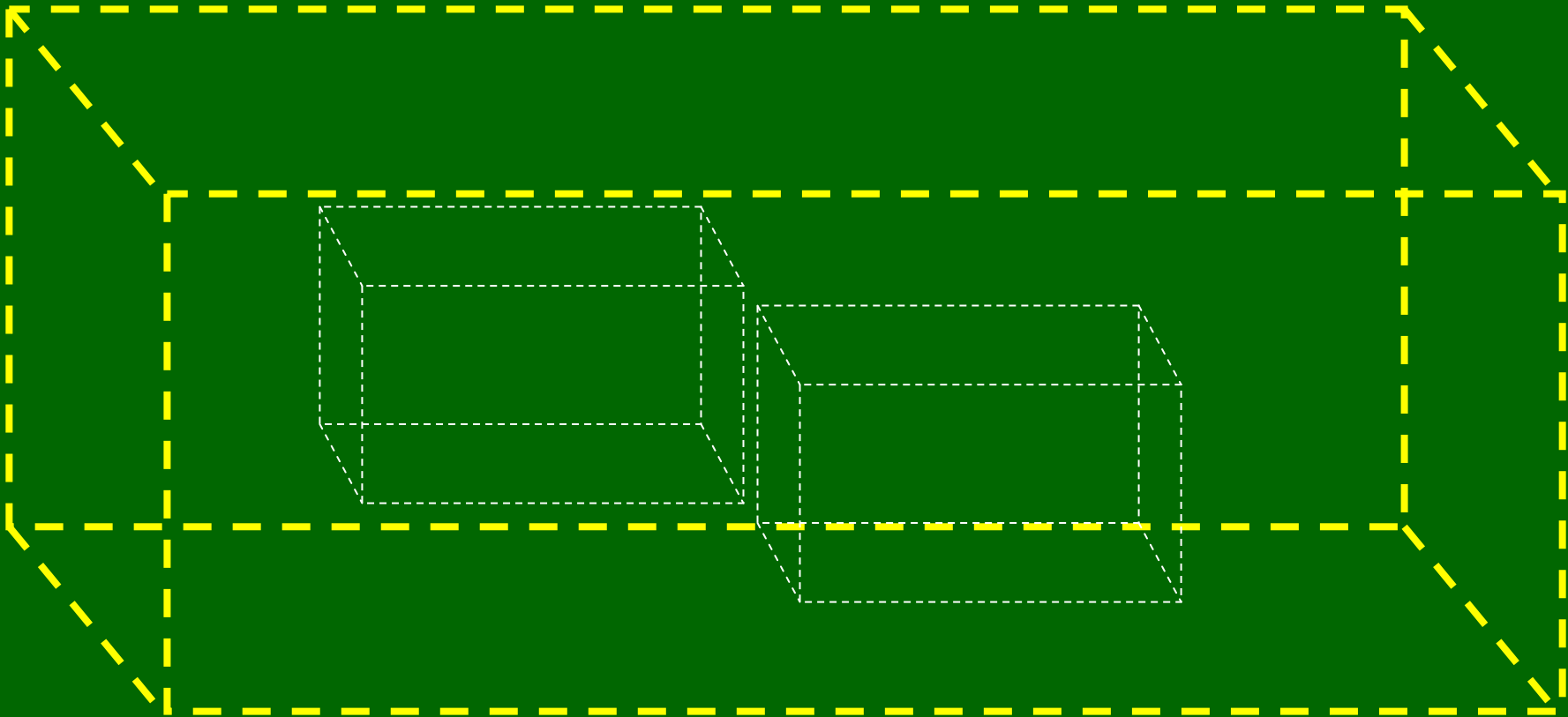
What happens when realized niches converge?





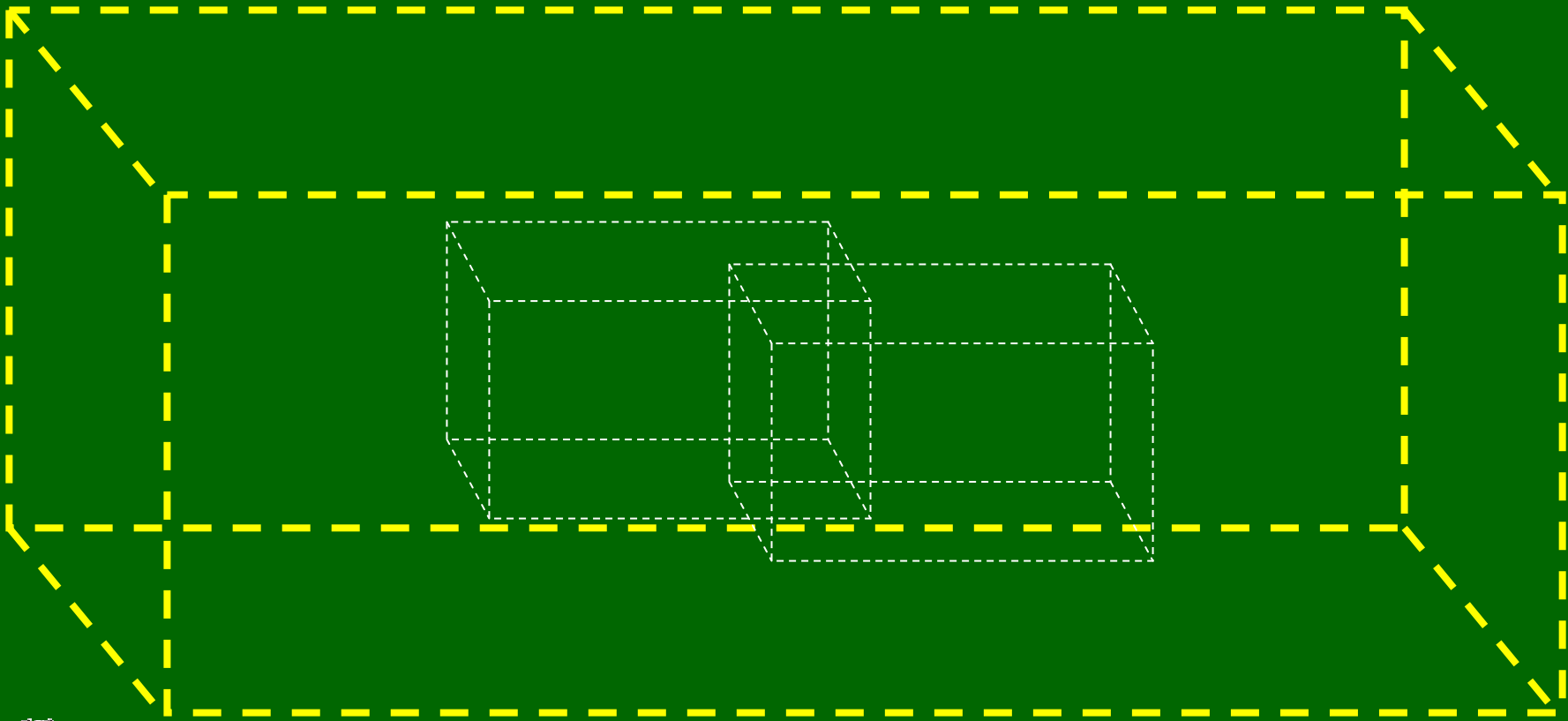
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Remember, niches abstractions (reflecting real behavior)



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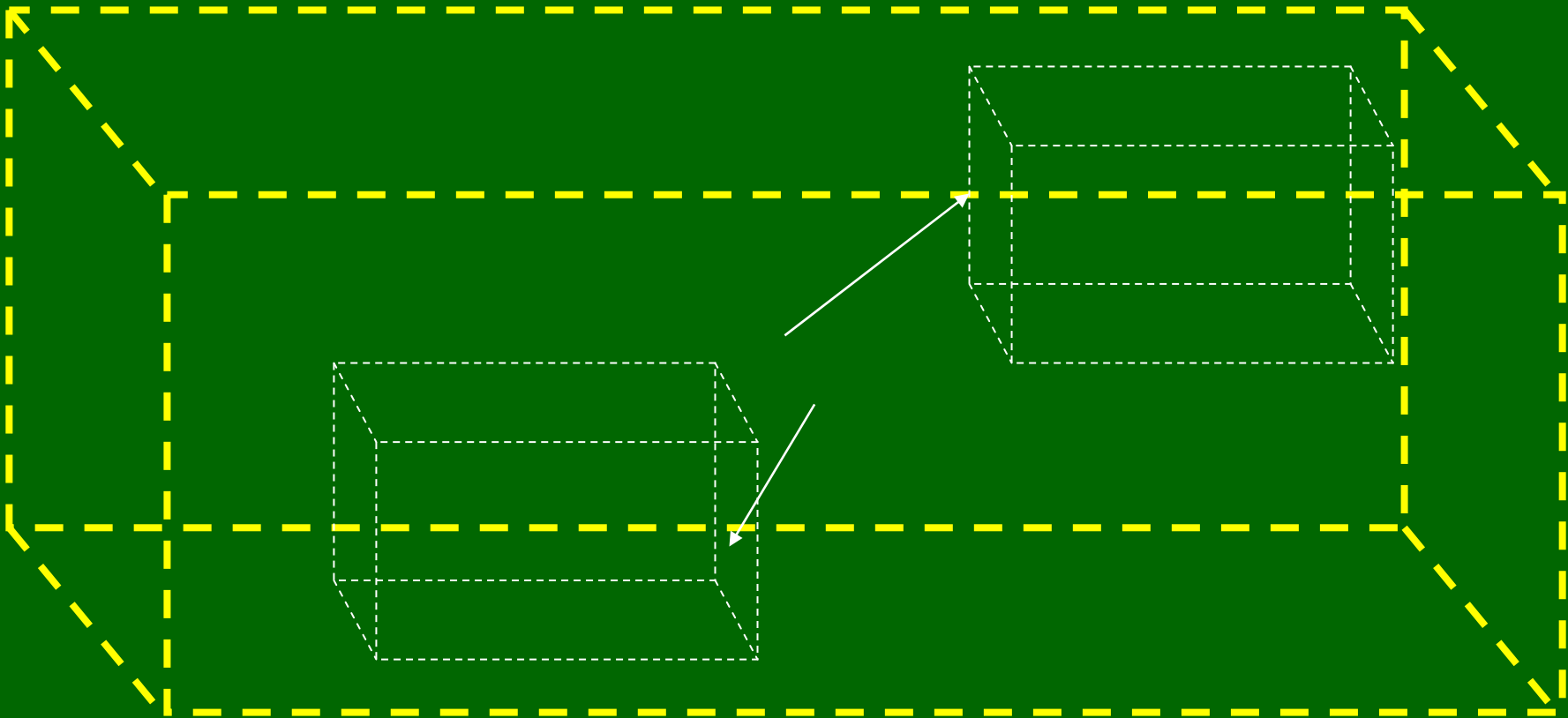
Niches can be “shared,” leading to commensualism or symbiosis.



Symbiosis, mutualism

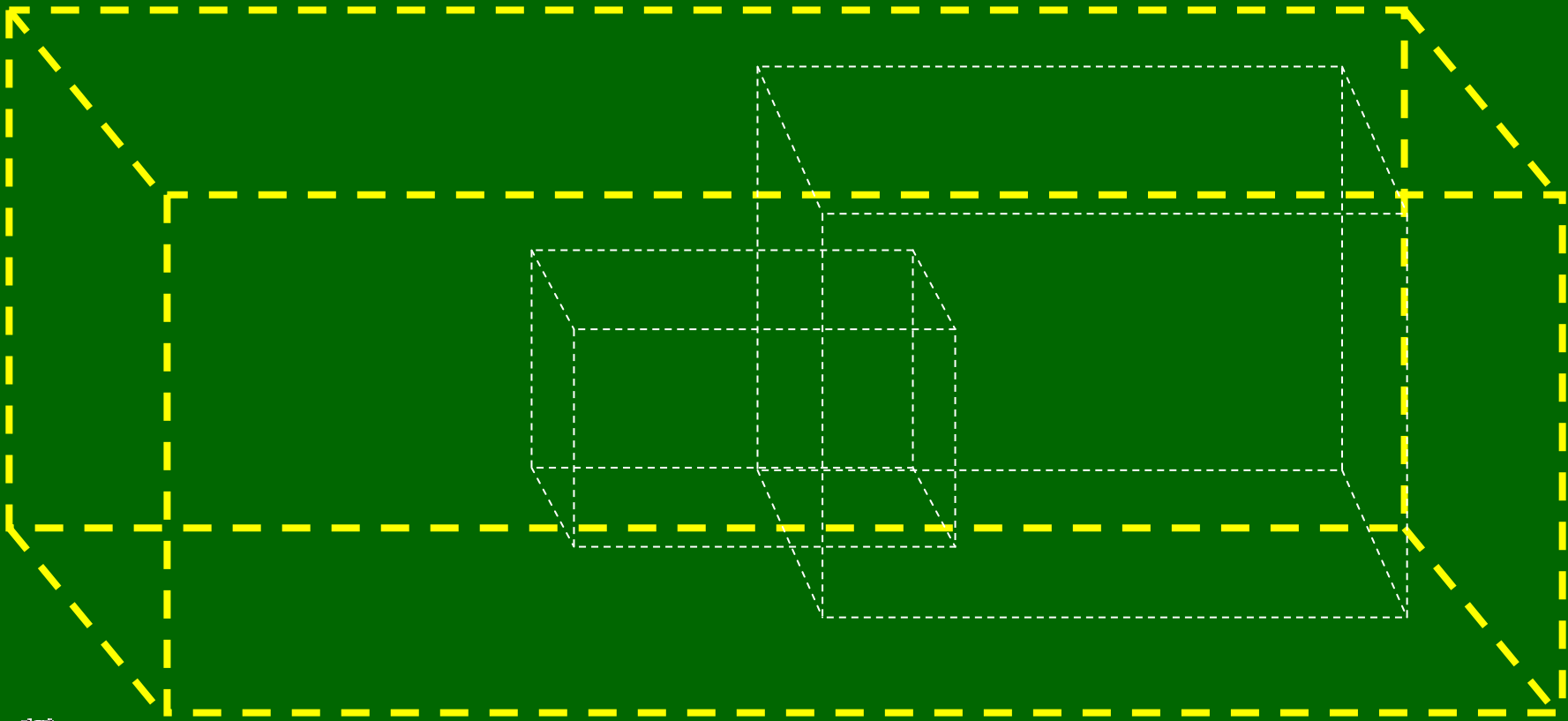
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But species can also “move” to a different portion of their potential niche.



Antibiosis, avoidance, antipathy

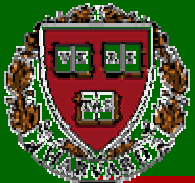
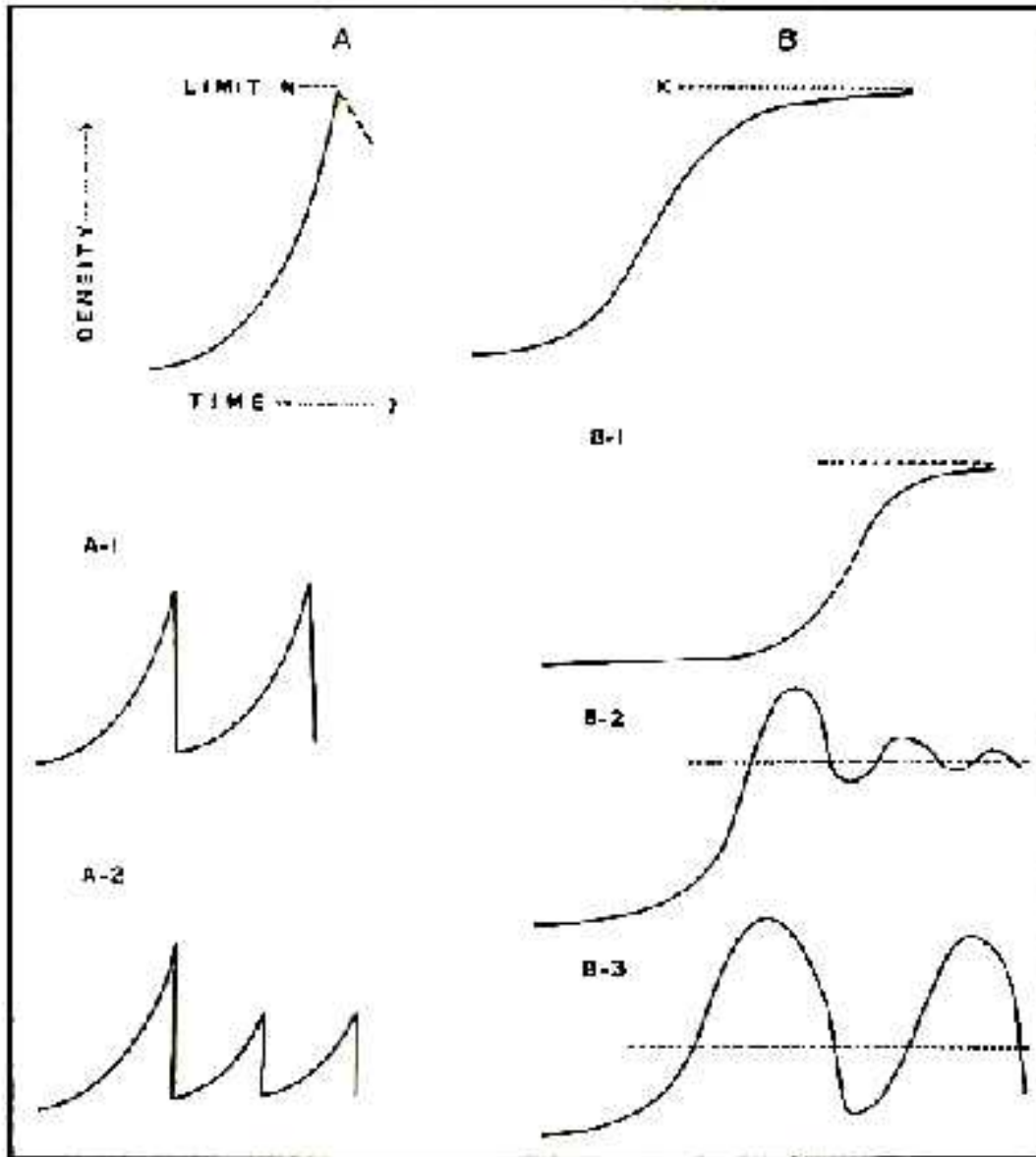
In addition, the “shape” of the realized niche can change because of the new relationship with another species.



parasitism \implies predation \implies annihilation

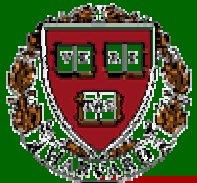
Tim Weiskel - 17





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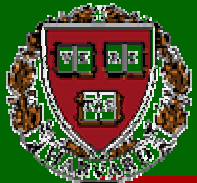
Anthropologists examine the regular patterns of life processes and the “improbable” traces they leave behind.



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Anthropologists examine the regular patterns of life processes and the “improbable” traces they leave behind.

If something appears improbable, we seek an explanation.



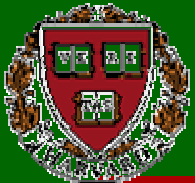
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Anthropologists
examine the
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Some explanations do not involve
humans...

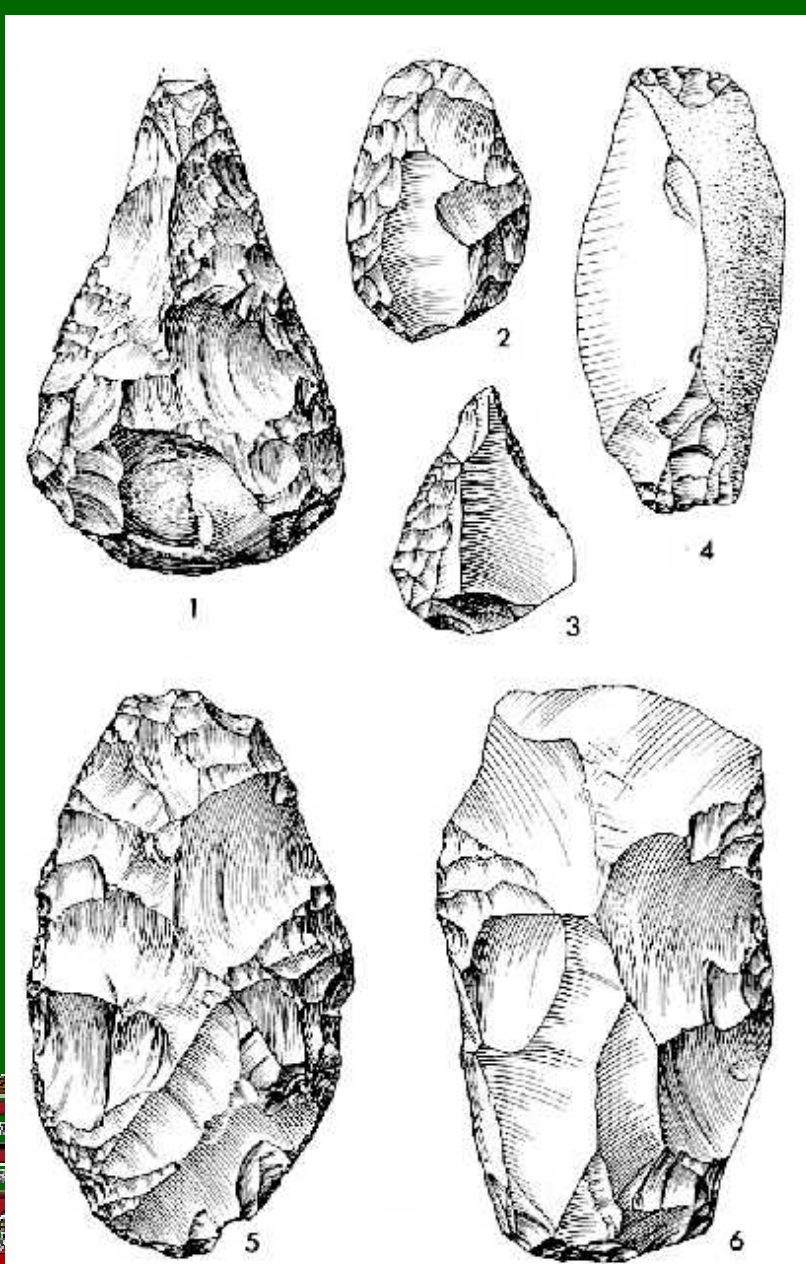




But on examination, other kinds of improbable
“rocks” seem to involve humans.



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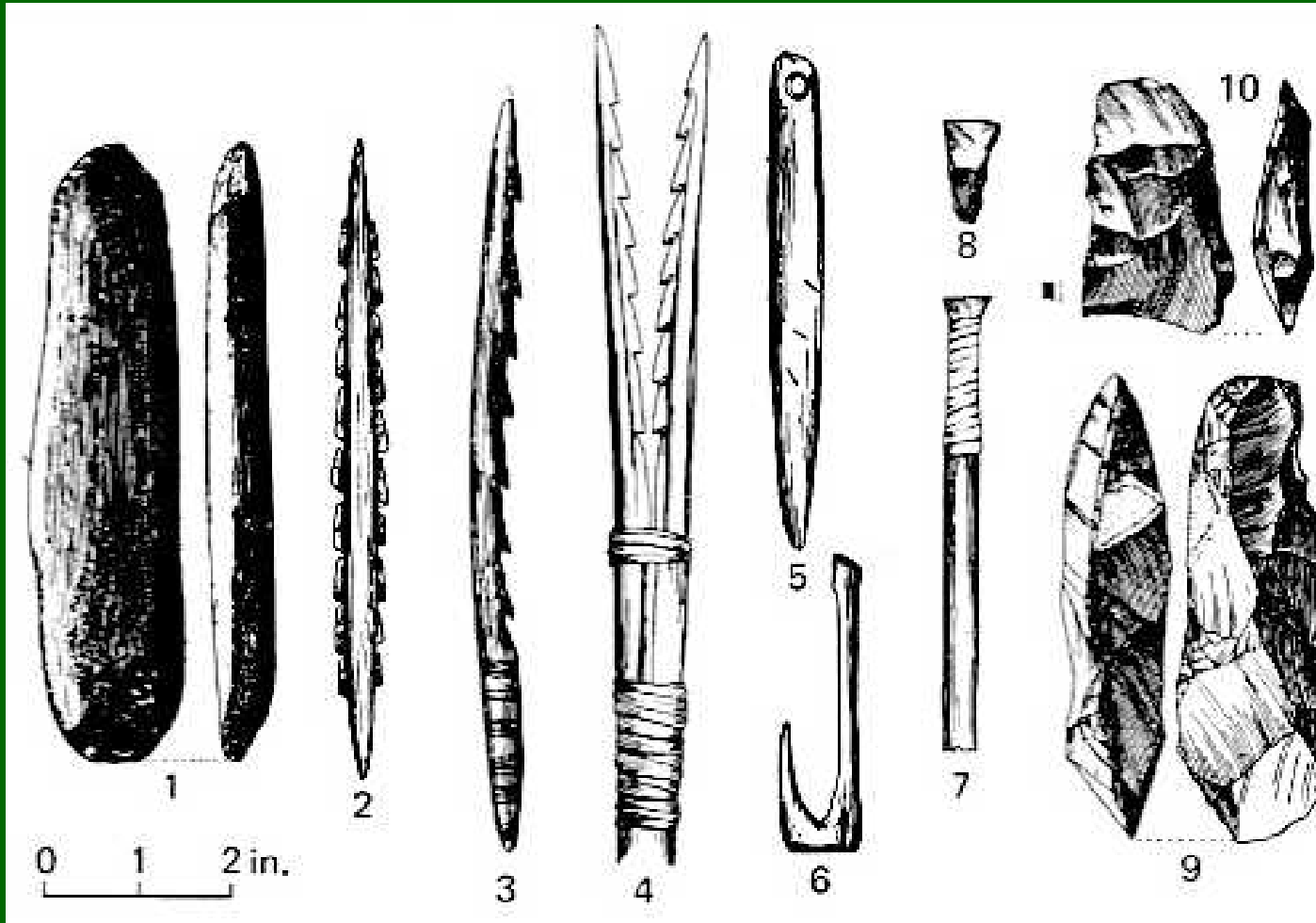


But other improbable patterns can only be explained by human agency.

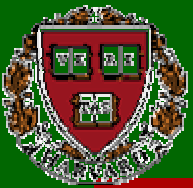
If we look carefully at what seems to be piles of rocks in many parts of the world we will find non-random, patterned rocks, whose existence is improbable and therefore prompts us to seek an explanation.



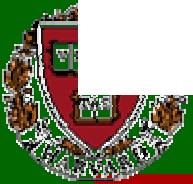
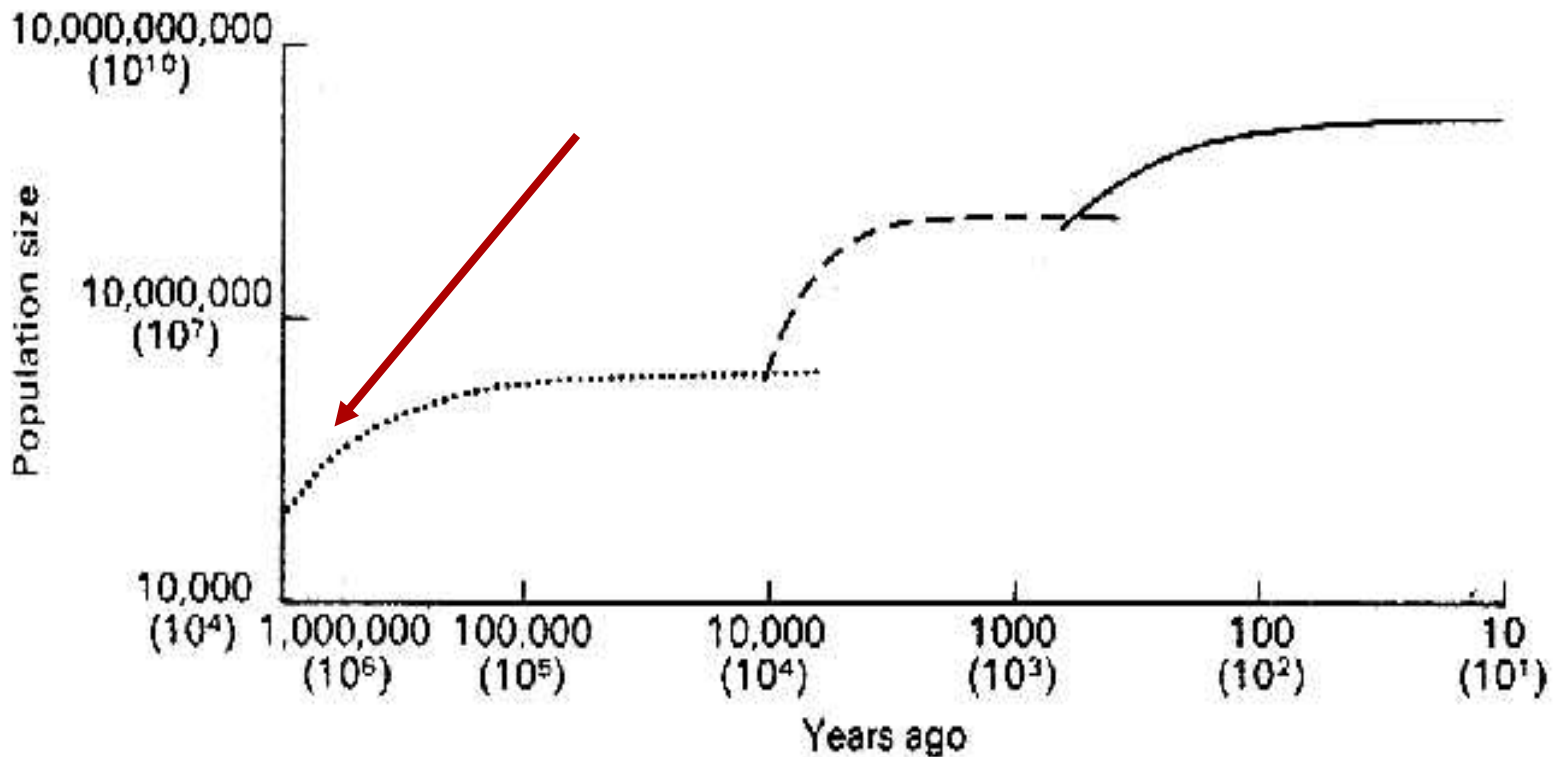
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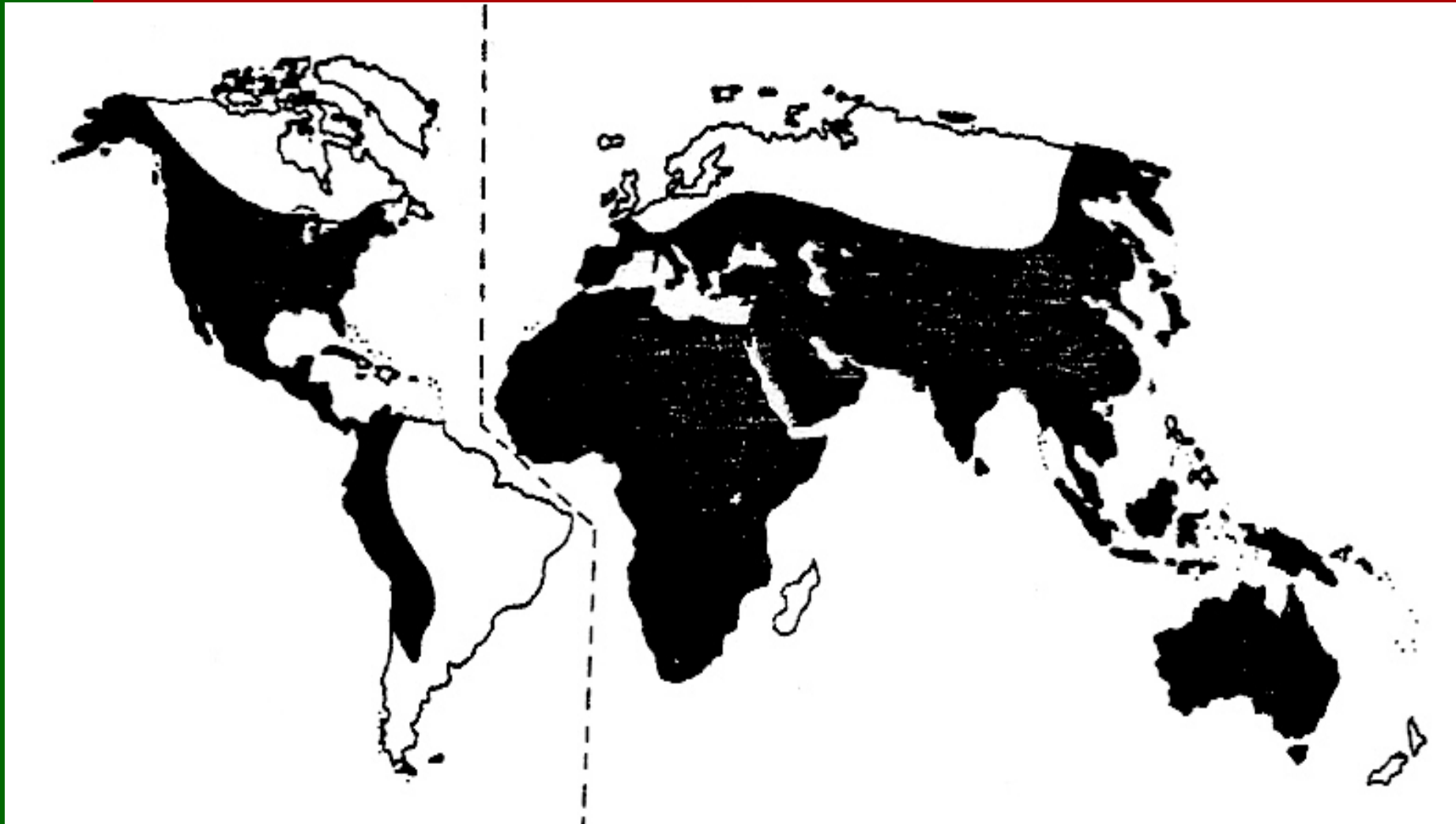
Over time, there are marked changes in the types of “tool kits” that humans use, and these point to different forms of behavior and social organization.



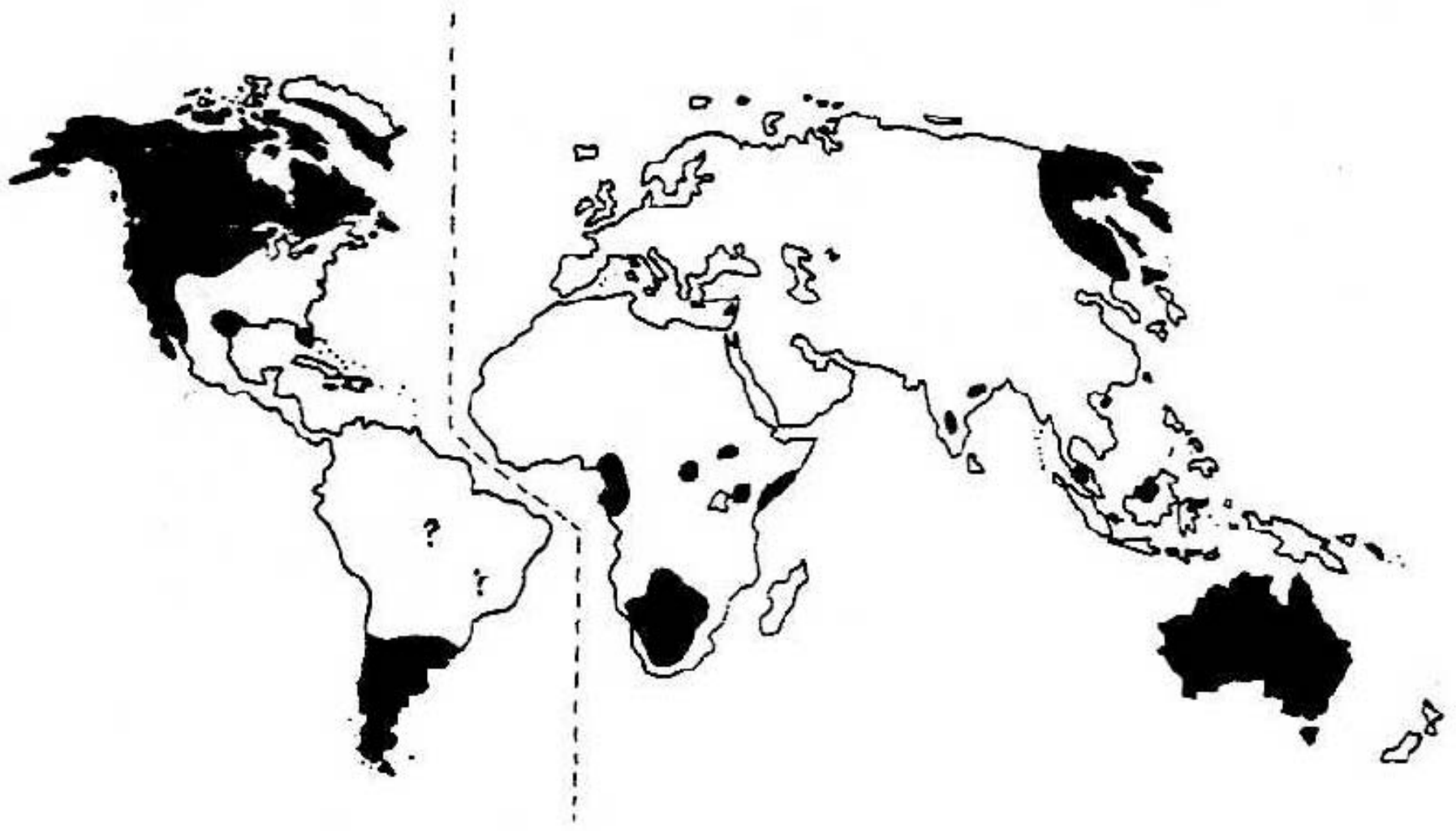
Some new “tool kits” are more efficient in assisting populations to capture new energy sources ~ population growth.



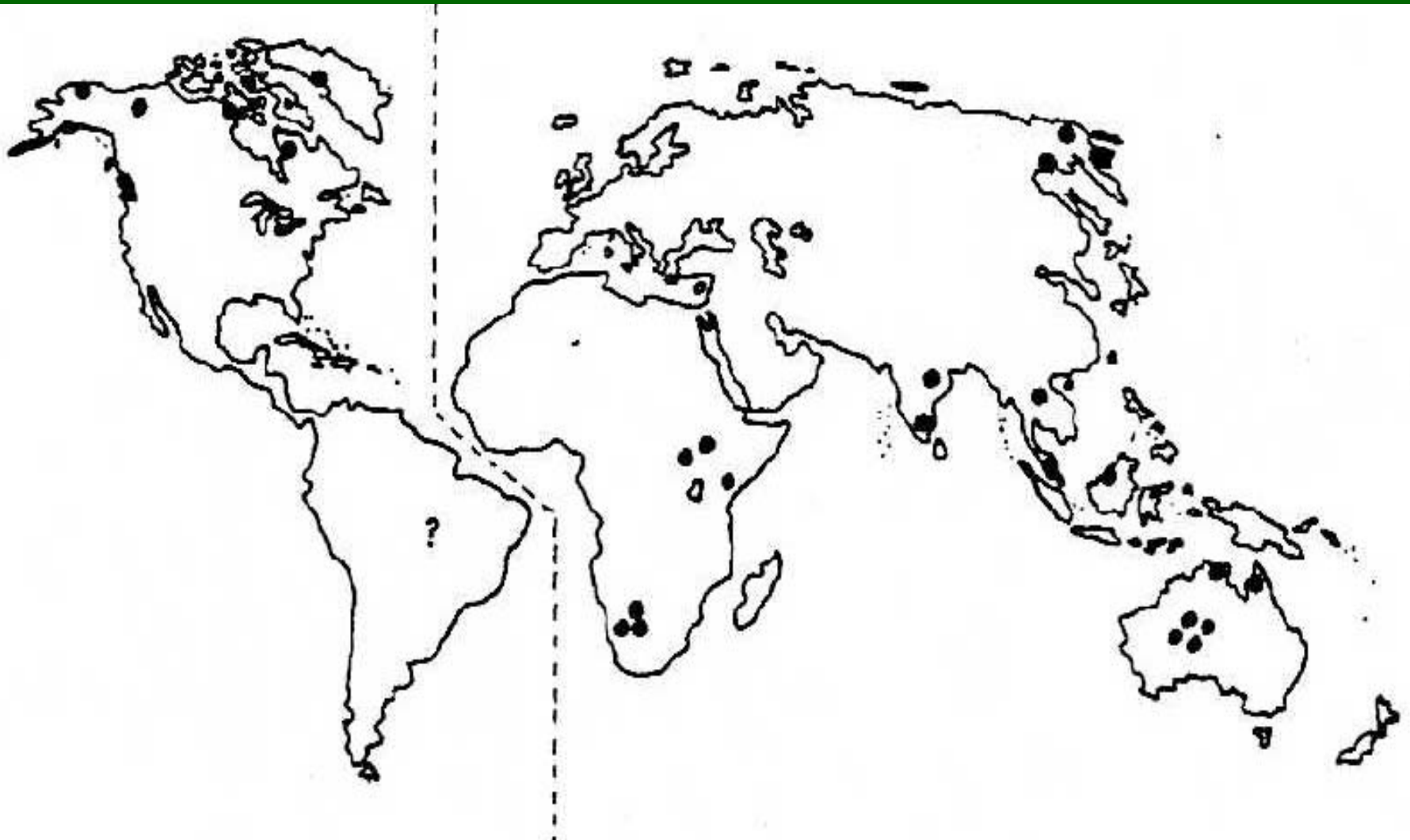
Human as Foraging Species Distribution - 12,000 BP



Humans as Foraging Species Distribution - 2,000 BP

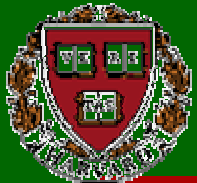
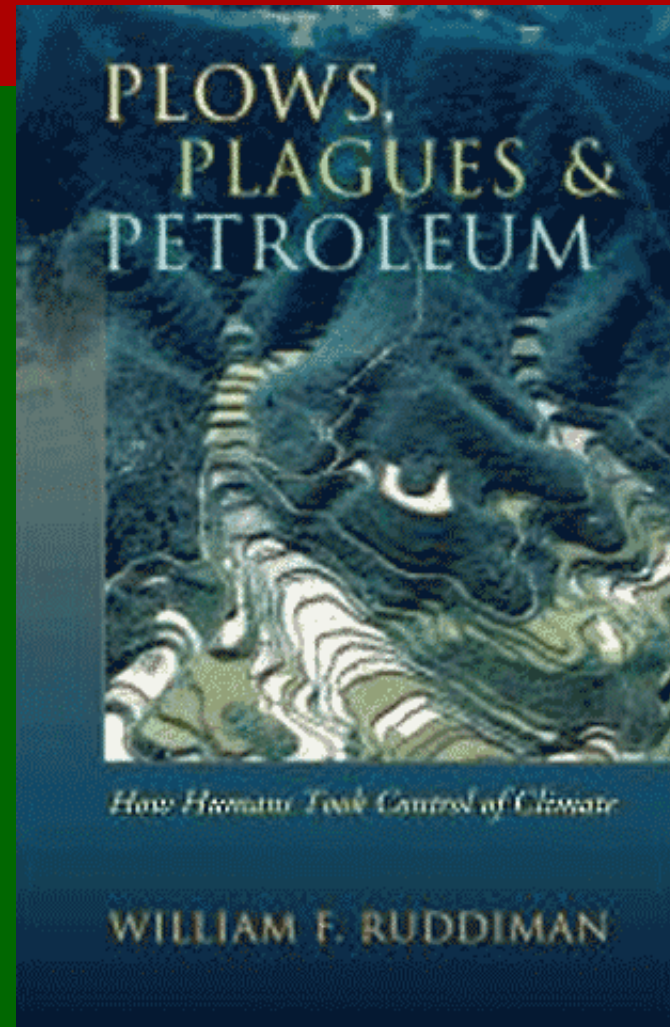


Humans as Foraging Species Distribution - 75 BP

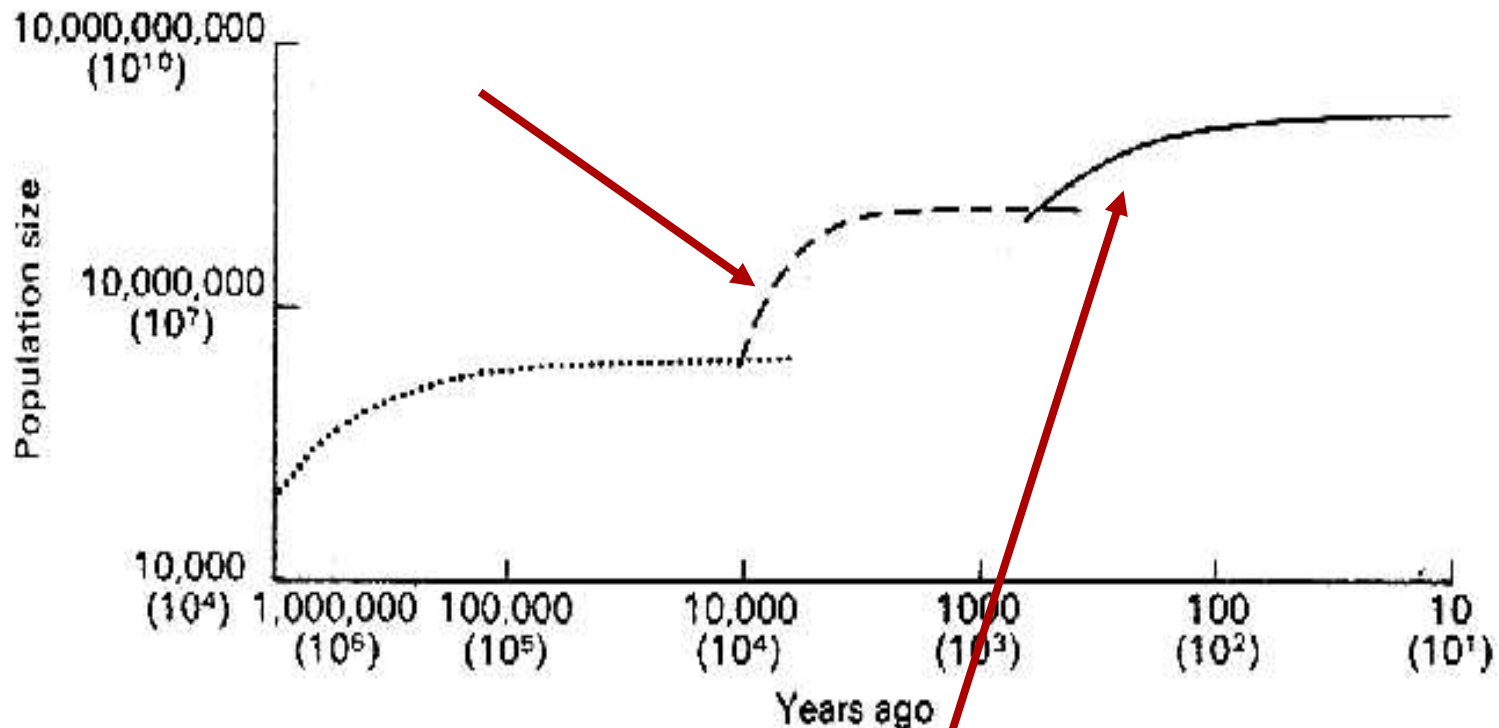


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Some scholars have begun to argue that the ecosystemic transformations engendered by the agricultural revolution marked a major and measurable shift in Earth's climate, suggesting, therefore, that anthropogenic climate alteration may have greater antiquity than we have become accustomed to think.



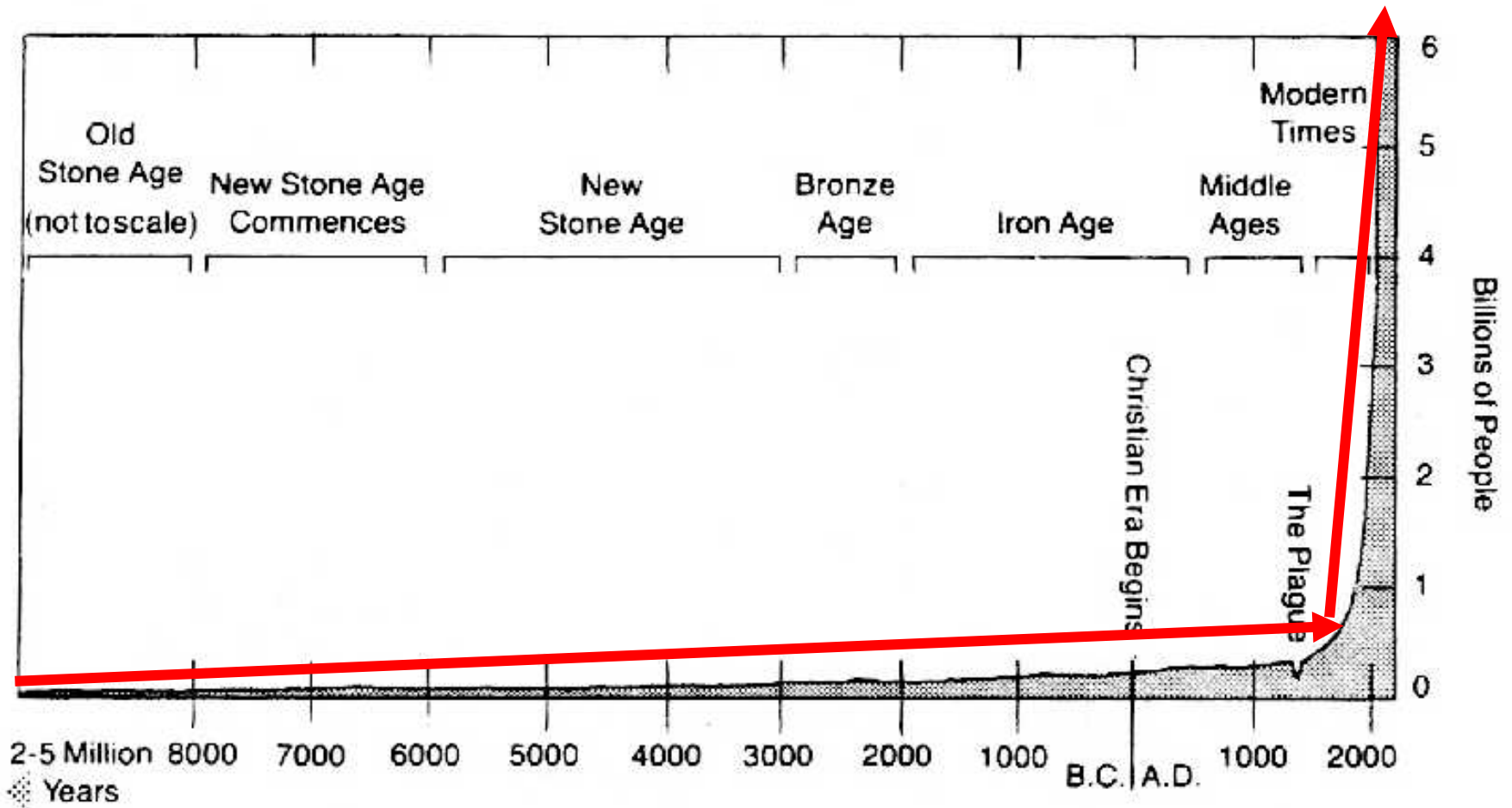
Agriculture represents a new means of capturing solar energy and this leads to \implies a population 'spurt' in growth.

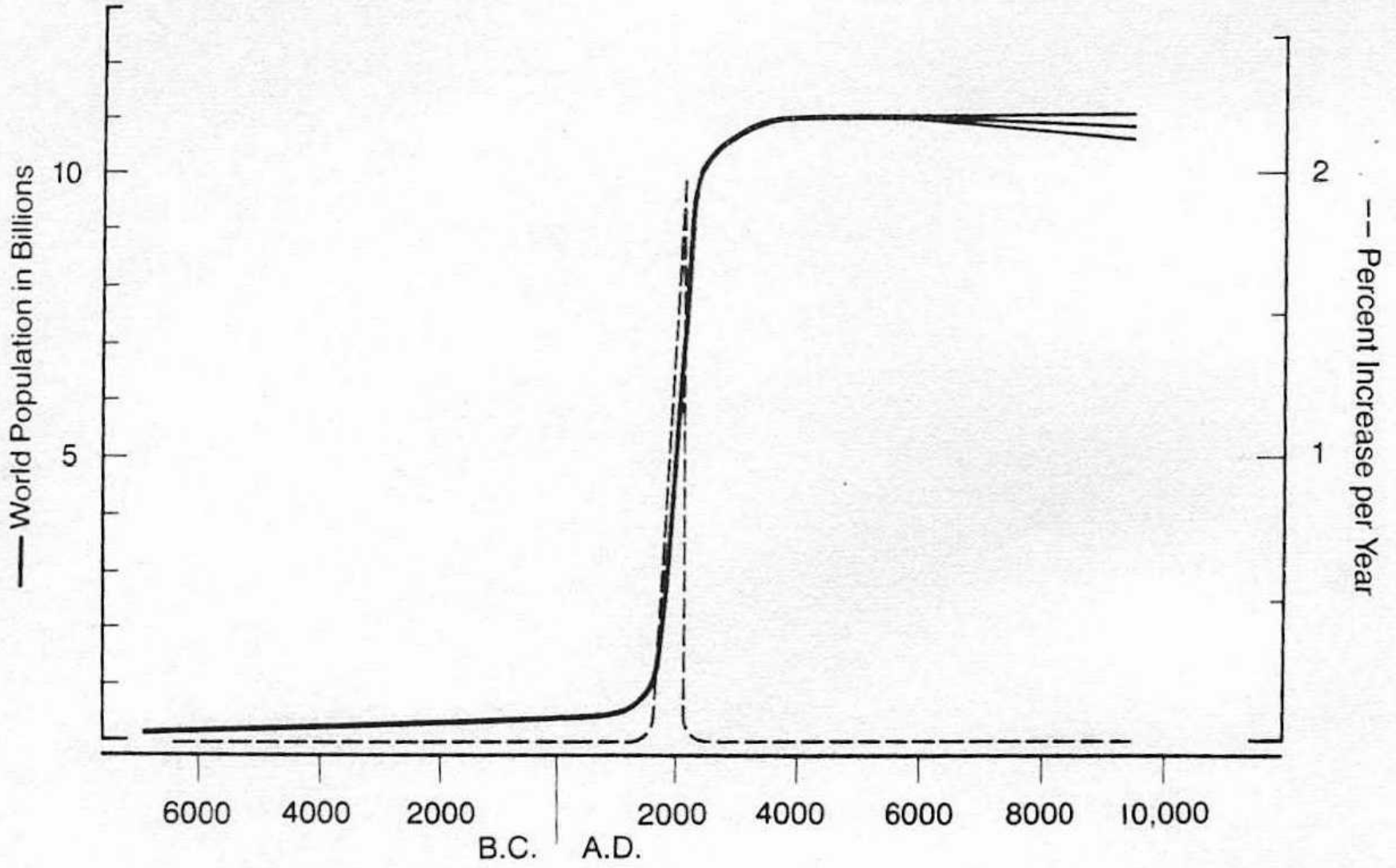


As does the 'energy spurt' provided by the industrial revolution & fossil fuels...



World Population Growth Through History





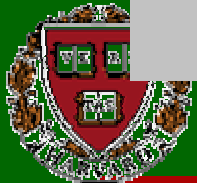


Along with a “new” set of stone tools that were more technically advanced and durable, the “neolithic” or “new stone age” is distinguished in the archaeological record by the appearance of several nearly simultaneous technologies that emerge along with sedentary agriculture.





Sedentary life patterns combined with storage technologies and record keeping technologies (writing, in particular) allow for a rapid, largely simultaneous burst of social and cultural invention leading to....



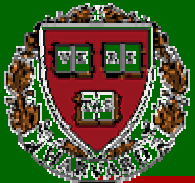
The State

Town ==> City ==> City State ==>
League of States == Empire

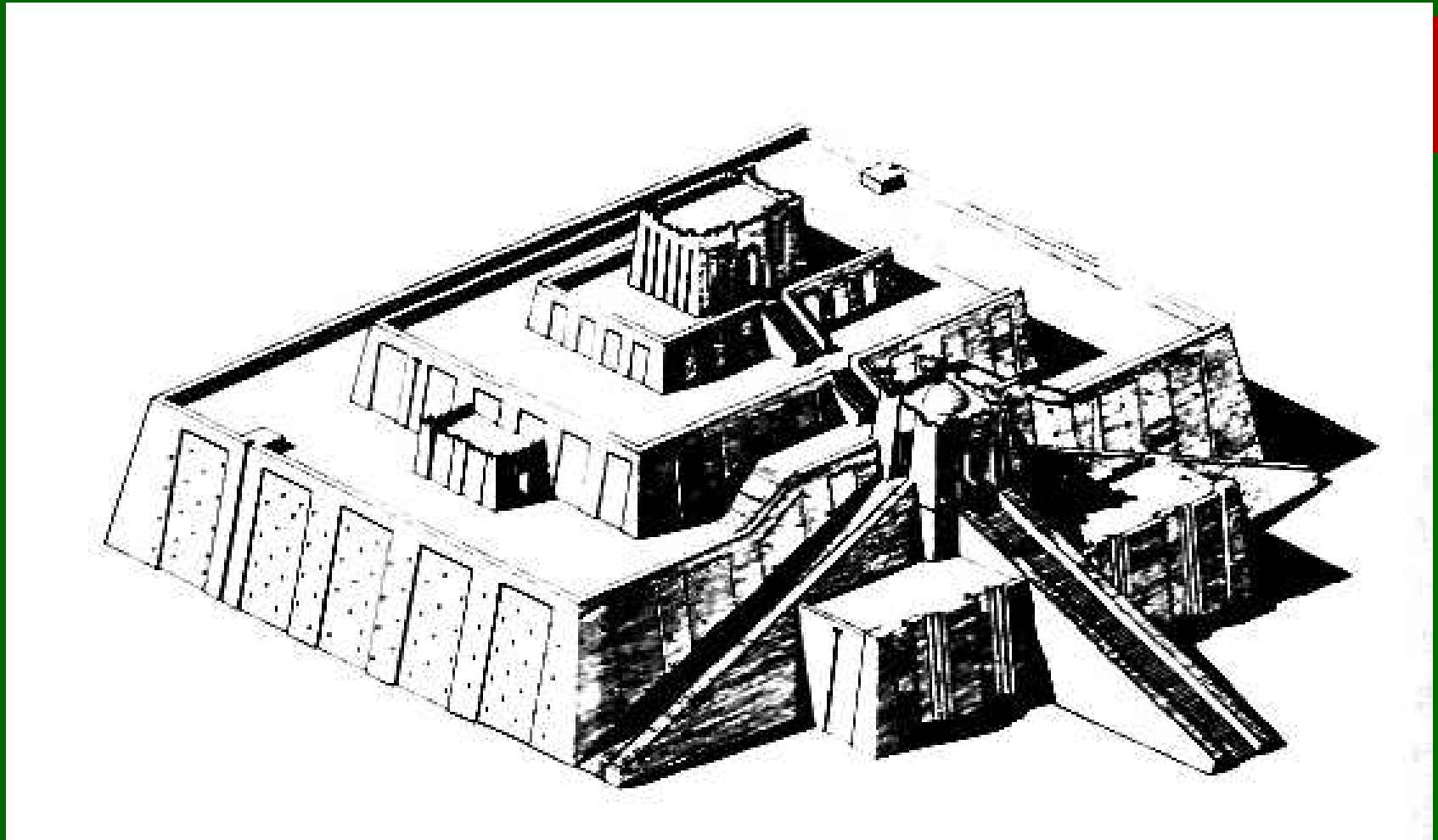


Extraordinarily rapid social evolution...

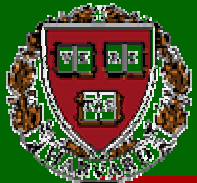
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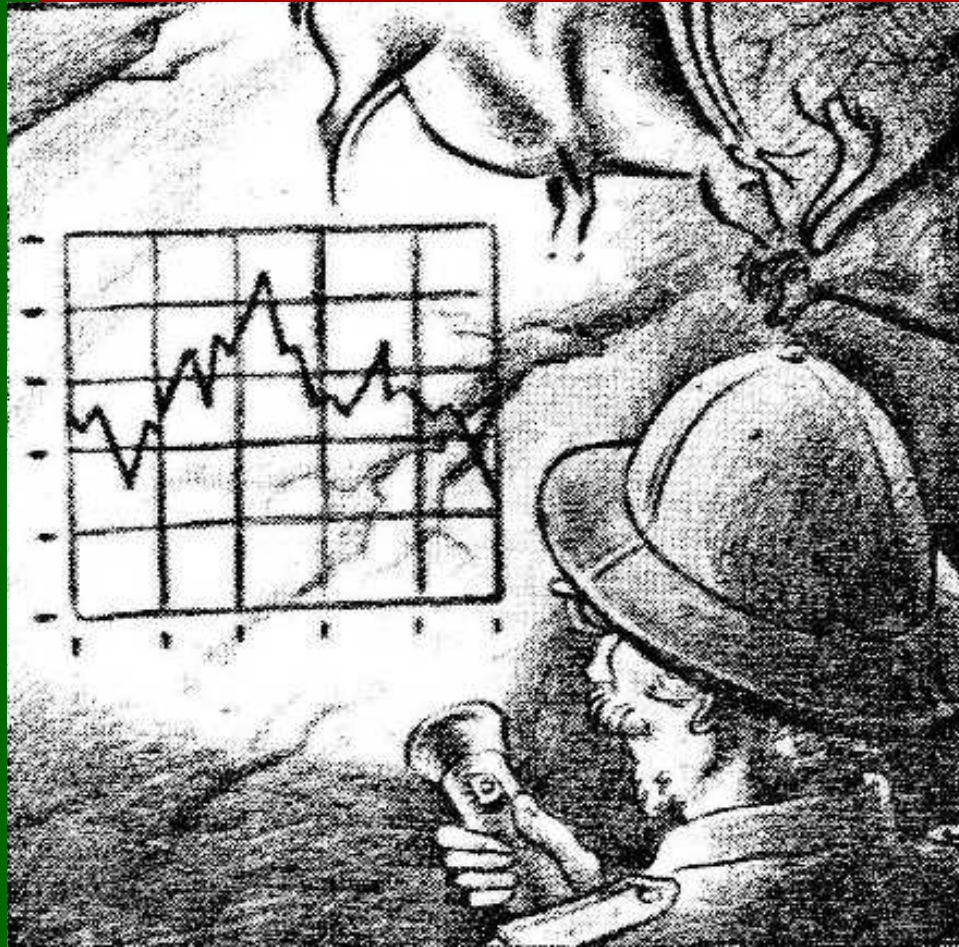


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• Strikingly similar forms appear around the world....
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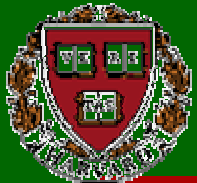


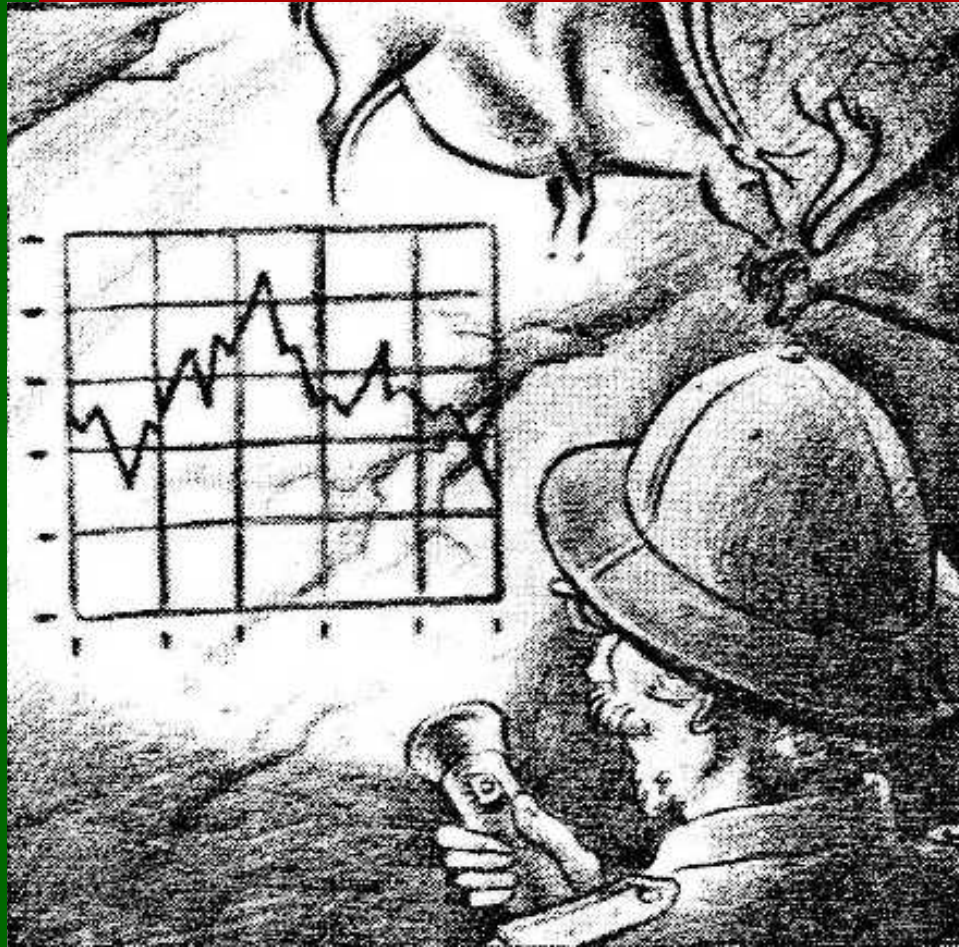
Is this Middle-Eastern or Mayan Architecture?



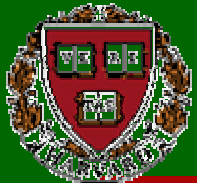


The gradual displacement of foraging societies (hunter-gatherers) by expanding agricultural societies leads to a whole new calculus of the domestic sphere.





The gradual displacement of foraging societies (hunter-gatherers) by expanding agricultural societies leads to a whole new calculus of the domestic sphere. This, in turn, kicks off an enormous “positive feedback loop” in all subsequent human history.



Stone Age Economics

Marshall Sahlins

Because of its mobile character, the calculus of the domestic sphere in foraging societies is based on the “limit of portability.”

Stone Age Economics

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Because of its mobile character, the calculus of the domestic sphere in foraging societies is based on the “limit of portability.”

Both production and *reproduction* are undertaken with regard to the overriding concern for the limit of portability.

Stone Age Economics

Marshall Sahlins

Because of its mobile character, the calculus of the domestic sphere in foraging societies is based on the “limit of portability.”

Both production and *reproduction* are undertaken with regard to the overriding concern for the limit of portability.

Don't produce or acquire more than you can carry.

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Logic Changes with Agriculture

The logic of production and reproduction changes dramatically with the emergence of sedentary agriculture.

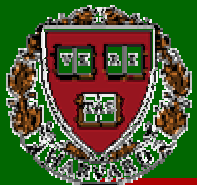


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Land becomes valued, needs to be worked with labor, the more labor the better, especially if it needs to be defended, the more defenses are needed, which require more agricultural surplus to support and therefore require people to acquire more land upon which to grow more food, etc. etc.



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This is an ever escalating “positive feedback” loop - a “vicious circle.”



More is better....

However much is produced, with new storage technology and desiccated grains, it is possible to accumulate ever more -- multi-annual surpluses.

Record keeping allows for inter-generational inheritance of both surpluses *and* debts.

The larger one's family is, the greater one's domestic labor force one can command.

Unskilled, repetitive and boring work needs to be done and women and children can be pressed into service.



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Growth is good....

The positive function of child labor as a tractable labor force in the newly organized system combined with the sedentary settlement pattern gives a whole new dynamic to the domestic domain.



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Production is geared up to expand reproduction, which in turn fuels further production with the application of child labor.

Growth becomes a “good thing” as opposed to something that ought to be avoided.



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Neolithic Ethnocentrism

We need, however, to be aware of our “neolithic ethnocentrism.”

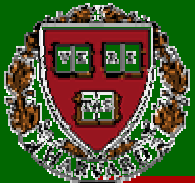


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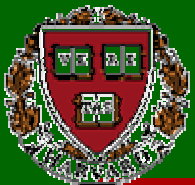
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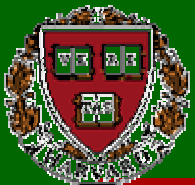
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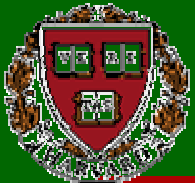
Moreover we must watch very carefully how the collective human econiche shifts with agriculture.

New forms of symbiosis have emerged.

We have co-evolved with our domesticates.

We have gained many things in the process

AND we have *lost* many things as well....





"Evolution's been good to you, Sid."

Our culture has trained us to think of social evolution as if it were a progressive process, leading to refinement and improvement of the human condition....this may not be so.



"Evolution's been good to you, Sid."

Our culture has trained us to think of social evolution as if it were a progressive process, leading to refinement and improvement of the human condition....this may not be so.

We may need to overcome this neolithic bias in our outlook.



"Evolution's been good to you, Sid."

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Our Neolithic Bias Contains Some Important Implicit Theories in our Ethical Discourse

A Theory of **Community**

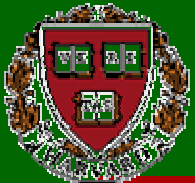
A Theory of **System**

A Theory of **Authority**

A Theory of **Change**

A Theory of **Agency**

A Theory of **Time**



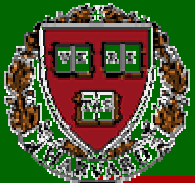
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Analysis of implicit theories leads to understanding of the hierarchy of values = *Worldview*

In analyzing the implicit theories behind the moral discourse we can arrive at an understanding of how these theories combine to provide a *hierarchy of valuation* for any individual or group, enabling it to make choices, judge right from wrong and establish policy.

Some things are said to be *more important* than others or they are attended to *first*. Some things are thought to be self-evident or true beyond any need for proof.

A shorthand way of referring to these different hierarchies of valuation is to speak of different “*Worldviews*.”



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Where do worldviews come from?

Worldviews emerge from the collective, historical experience of an econiche over time.

They represent the sum total of the implicit theories (of community, system, change, etc.) which have proved credible and useful over time in a given community.

The greater the stability and continuity of the social formation, the greater the coherence of its worldview.



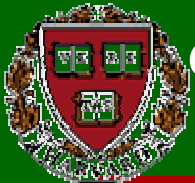
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Do Worldviews change with new knowledge? Sometimes yes... Sometimes no...

The greater the amount of change, instability or transformation in a society the greater the potential challenge to a particular worldview.

BUT although worldviews may be challenged, they may not be changed. On the contrary, they may reassert what they perceive to be their fundamental tenets all the more vehemently.

Fundamentalisms everywhere arise as a means of resisting change where that change challenges a dominant worldview.



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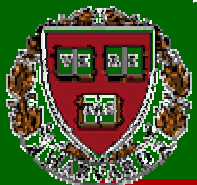
Worldviews not ‘bothered’ by mere facts...

Thus, worldviews are sometimes abandoned -- but not often and not easily. Both extended time and protracted debate are required for this to happen.

In short, worldviews change much slower than knowledge systems.

Knowledge systems can change radically in one generation with new kinds of evidence, but worldviews and the beliefs associated with them lag far behind any new discovery of mere facts.

This is especially true in societies characterized by partial, specialized and restricted literacy.



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Reality is often denied in defense of the self-affirming features of a worldview....

In societies characterized by partial, specialized or restricted literacy a great deal of intellectual energy is always devoted to *denying* the importance of new data and new facts.

Evidence for new phenomena needs to be ‘squared’ with the expectations for what constitutes data in the existing texts. If the new phenomena does not conform to what is expected, they are often rejected and their importance is denied.

Consider the evolution of the worldview in grain-based agricultures from the “ancient” Near East....



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Elements of Ethical Reasoning

Timothy C. Weiskel

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