

CULTURE

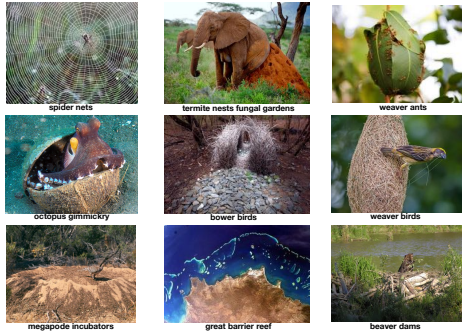


ANTH 203 Introduction to Anthropogeny
November 10, 2022

Lecture 8
Pascal Gagneux

How many of you still know how to make twine or a rope? or use such twine to make a net?
This is an example of how cultural knowledge can erode.....

Animal Material Culture



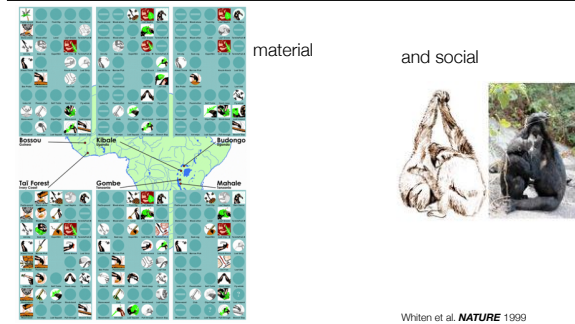
Examples of animal material and tool use, many of these examples do not include learnt behaviors.

Animal cultural transmission



Animals actively teaching, very few examples if any from apes.

Chimpanzee culture



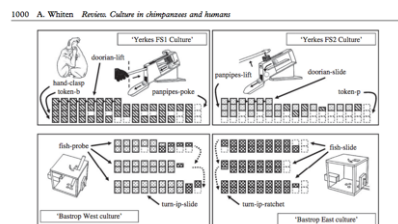
Behaviors are arranged in the 5times 8 arrays to cluster those behaviors customary or habitual at each site, with clusters for westerly sites on the left of the array and clusters for easterly sites on the right. The secondary Mahale site (K) is omitted. Colour icons, customary; circular icons, habitual; monochrome icons, present; clear, absent; horizontal bar, absent with ecological explanation; question mark, answer uncertain.

Chimpanzees



Savannah chimpanzees in Issa Valley, Tanzania, 5 years later, fully habituated and not afraid of human observers anymore.

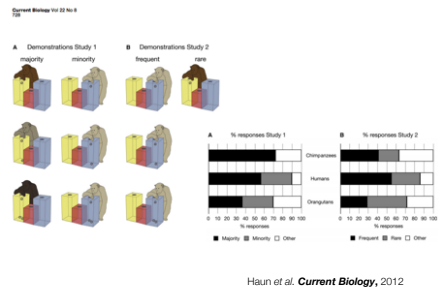
Conformity bias in captive chimpanzees



Whiten A Phil. Trans. R. Soc B. 2011

Spread of experimentally seeded, multiple traditions generating four chimpanzee 'cultures'. At each pair of locations, alternative techniques were experimentally seeded in a single individual and spread locally. Each column represents a single chimpanzee, with hatching corresponding to the alternative techniques seeded in the leftmost individual in each case. At Yerkes, row 1 $\frac{1}{4}$ lift versus slide methods to open door in 'doorian fruit', run as a diffusion chain; row 2 $\frac{1}{4}$ poke versus lift panpipes techniques spread in an open (unconstrained) diffusion; row 3 $\frac{1}{4}$ bucket versus pipe posting option fortokens in an open diffusion ; row 4 $\frac{1}{4}$ hand-clasp grooming, which arose and spread spontaneously in only Yerkes FS1 community. At Bastrop, row 1 $\frac{1}{4}$ fish-probe versus fish-slide techniques; row 2 $\frac{1}{4}$ turn-ip-slide versus turn-ip-ratchet techniques, used to extract food from two different devices; each technique spread to a second group (middle) and then a third (bottom).

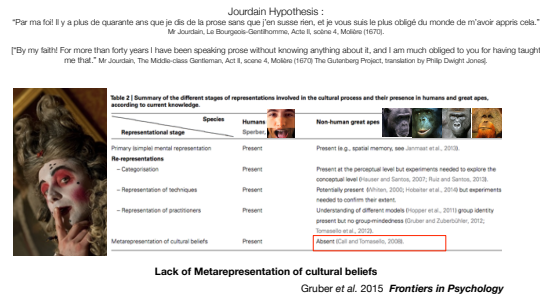
Normative transmission in Chimpanzees



Structure of Peer Demonstrations in Study 1 and Study 2(A) Demonstrations of different response options in study 1. One option is demonstrated by three different individuals, once each (majority). One option is demonstrated by one individual three times (minority). One option is never demonstrated. The real boxes were opaque, not transparent as indicated here. Every observer saw these two types of demonstrations by conspecific peers in counterbalanced order. (B) Demonstrations of different response options in study 2. One option is demonstrated by one individual three times (frequent). A second option is demonstrated by one individual once (rare). One option is never demonstrated. The real boxes were opaque, not transparent as indicated here. Every observer saw two demonstrations by conspecific peers in counterbalanced order.

Figure 2. Percent Responses following Different Demonstrations in Study 1 and Study 2 (A) Percentage of given responses in either of the three response categories (majority, minority, or other), separately for the three tested great ape species in study 1. (B) Percentage of given responses in either of the three response categories (frequent, rare, or other), separately for the three tested great ape species in study 2.

Apes have culture but do not know it



Mental state attribution! The highest stage of metarepresentational process, in our context, is to appreciate that members of another group may harbor beliefs that are different from one's own group, that is, to compare 'how things ought to be' (Figure Figure3C3C). Here, cognition goes beyond simple re-representations, which could sustain all previous aspects of cultural knowledge, i.e., categorisation, representation of techniques, and representation of models. In effect, the metarepresentational processes must become 'representations of representations as representations', that is metarepresentations. In humans, this type of metarepresentation probably underlies complex mental state attribution, intentional teaching and belief-based imitation, the human 'theory of mind' (Tomasello et al., 2005 and comments; Meltzoff, 2007). The ability to mentally represent and compare own and others' knowledge may refine the categorisation of partners as 'same' or 'other.' Such reasoning, if associated with feelings of group identity, appears to be an ingredient for the emergence of social norms. Humans have an urge to conform to the behavior of others, but to perceive group behavior as normative and recognize deviation, it is also necessary to mentally represent the group norm, 'the way things ought to be.' Humans tend to become aggressive toward non-followers, while positive reinforcement also plays a role, for instance, in the case of the 'chameleon effect,' when individuals engaged in an interaction unintentionally match each other's behaviors (Chartrand and Bargh, 1999). How this effect connects to norms, however, remains to our knowledge to be investigated. The theory of mind of great apes, in contrast, appears to be more limited and unable to take into account others' false beliefs, suggesting that their metarepresentational abilities are equally limited (Call and Tomasello, 2008).

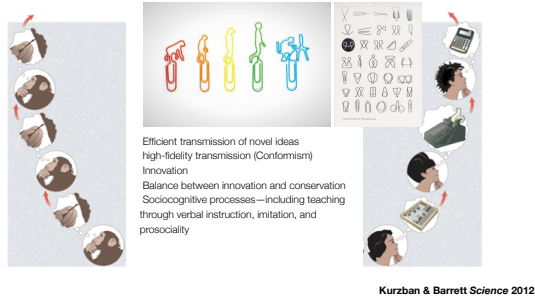
Conformism and Norm

Swiss Meta-representation of cultural beliefs

1. We have always done it like this.
2. We have never done it like this.
3. If you do it differently, then anyone could do so.

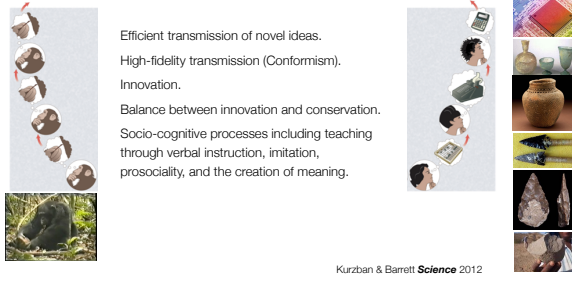


The origin of ratcheting culture



The evolution of the paper clip is sometimes used to illustrate this principle

The origin of ratcheting culture



Building on others' ideas, tinkering and innovating while also conforming to a certain degree. Language does wonders to sharing ideas. From Oldowan stone tool, to Acheulean hand axe, to hafted arrow points, pottery, glass, microchips and photovoltaic panels, all different uses of silicate minerals!

CULTURE (Indo-European)



from cultura: growing, cultivating (Neolithic)

Looking up the word for culture in a small sample of different language families reveals: different views of culture and reflexiveness of human cultures.

Utamaduni (Bantu)

Πολιτισμός



from مدينة (Madina) Arabic for "city", Urbanity, Culture

Πολιτισμός politismos: Polis (city)

ثقافة (Afro-Asiatic) thaqafa



etymology from: instructing, teaching, educating

Paleolithic Culture

no writing system

no farming

no currency / market economy

no towns

YET all profoundly cultural!

文化 (Sinotibetan) wén huà



(象形) Pictographic. Picture of a tattooed chest, representing its former meaning of "tattoo"

紋 current character for tattoo

The intricate patterns of 2,500-year-old tattoos - some from the body of a Siberian 'princess' preserved in the permafrost - have been revealed in Russia. The remarkable body art includes mythological creatures and experts say the elaborate drawings were a sign of age and status for the ancient nomadic Pazyryk people, described in the 5th century BC by the Greek historian Herodotus. But scientist Natalia Polosmak - who discovered the remains of ice-clad 'Princess Ukok' high in the Altai Mountains - is also struck about how little has changed in more than two millennia.

Sanskrit (Indo-european)



from संस्कृति Sanskrit saṃskṛta 'composed, elaborated,' from sam 'together' + kr 'make' + the past participle ending -ta

17

Elaborated, composed

Teko (Tupi-Guarani, South Amazon)



custom, mode of being

Custom, mode of being.

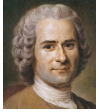
Cultural anthropologists would insist that human culture is a system for the creation of meaning.

Contrasting European Views on the Past



Thomas Hobbes 1588- 1676

"No arts; no letters; no society; and which is worst of all, continual fear, and danger of violent death: and the life of man, solitary, poor, nasty, brutish and short."



Jean Jaques Rousseau 1712-1778

"Civilization is a hopeless race to discover remedies for the evils it produces."

"Nature made me happy and good, and if I am otherwise, it is society's fault."

Two extreme views of civilization by European philosophers of the 17th and 18th century, also known as DWEMs (Dead White European Men).

Eurocentrism including among intellectual giants



David Hume 1711-1776

"I am apt to suspect the Negroes, and in general all other species of men to be naturally inferior to the whites. There never was any civilized nation of any other complexion than white, nor even any individual eminent in action or speculation."

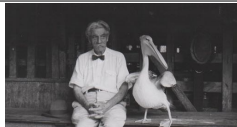


Immanuel Kant 1724-1804

Die Menschheit ist in ihrer größten Vollkommenheit in der Rasse der Weißen. Die gelben Indianer haben schon ein geringeres Talent. Die Neger sind weit tiefer, und am tiefsten steht ein Teil der amerikanischen Völkerschaften. [...] Die Neger von Afrika haben von der Natur kein Gefühl, welches über das Lappische stiege.

Humanity exists in its highest perfection in the White Race. The yellow Indians already have a lower talent. Negroes are far lower, and lowest are the peoples of America. [...]. The Negroes of Africa have by nature no feeling that rises above the trifling.

Ethical Giants too: Albert Schweitzer



Material progress much faster than mental progress.

"I have given my life to try to alleviate the sufferings of Africa. There is something that all white men who have lived here like I must learn and know: that these individuals are a sub-race. They have neither the intellectual, mental, or emotional abilities to equate or to share equally with white men in any function of our civilization. I have given my life to try to bring them the advantages which our civilization must offer, but I have become well aware that we must retain this status: the superior and they the inferior. For whenever a white man seeks to live among them as their equals they will either destroy him or devour him. And they will destroy all of his work. Let white men from anywhere in the world, who would come to Africa, remember that you must continually retain this status; you the master and they the inferior like children that you would help or teach. Never fraternise with them as equals. Never accept them as your social equals or they will devour you. They will destroy you." -

Dr. Albert Schweitzer, winner of the 1952 Nobel Prize for peace, in his 1961 book, From African Notebook.

Political Giants too: ?



The Jewish n***** Lassalle who, I'm glad to say, is leaving at the end of this week, has happily lost another 5,000 talers in an ill-judged speculation. The chap would sooner throw money down the drain than lend it to a 'friend', even though his interest and capital were guaranteed.....

It is now quite plain to me — as the shape of his head and the way his hair grows also testify — that he is descended from the negroes who accompanied Moses' flight from Egypt (unless his mother or paternal grandmother interbred with a n*****). Now, this blend of Jewishness and Germanness, on the one hand, and basic negroid stock, on the other, must inevitably give rise to a peculiar product. The fellow's impurity is also n*****-like.



Friedrich Engels

Der jüdische N***** Lassalle, der glücklicherweise diese Woche abreist, hat [...] 5000 Taler in einer falschen Spekulation verloren. Der Kerl wür- de eher das Geld in den Dreck werfen, als es einem 'Freunde' zu pum- pen, selbst wenn ihm Zinsen und Kapital garantiert würden. [...] [Der Kerl, der die Geschichte mit Amerika usw. weiß, also die Krise kennt, in der ich mich befinde. [...] hat mir Zeit gekostet und, meinte das Vieh, da ich ja jetzt doch 'kein Geschäft' habe, sondern nur eine 'theoreti- sche Arbeit' mache, könne ich ebensogut meine Zeit mit ihm totschla- gen!

Es ist mir jetzt völlig klar, daß er, wie auch seine Kopfbedeckung und sein Hasenwuchs beweist, — von den Negern abstammt, die sich dem Zug des Moses aus Ägypten angeschlossen (wenn nicht seine Mutter oder Groß- mutter von väterlicher Seite sich mit einem n***** kreuzten). Nun, diese Verbindung von Judentum und Germanentum mit der negroiden Grundsubstanz müssen ein sonderbares Produkt hervorbringen. Die Zudringlichkeit des Burschen ist auch n*****haft. -1



Ferdinand Lassalle



Paul Lafargue and Laura Marx

Karl Marx, Brief an Friedrich Engels [vom 30. Juli 1862], in: MEW 30, S. 257–259. (Im Folgenden wird in der Regel nach der Ausgabe Karl Marx, Friedrich Engels, Werke [MEW], hg. v. Institut für Marxismus-Leninismus beim ZK der SED, Berlin 1956–1990, unter Angabe der jeweiligen Bandnummer zitiert).

Leslie Derfler, Paul Lafargue and the Founding of French Marxism, 1842–1882, Cam- bridge (Mass.) 1991, S. 46 (dort auch der Hinweis auf die Marxschen Namensgebungen).

Political Giants too: ?



Guevara's 1952 diary:

"The blacks, those magnificent examples of the African race who have maintained their racial purity thanks to their lack of affinity with bathing, have seen their territory invaded by a new kind of slave: the Portuguese."

"The black is indolent and a dreamer; spending his meager wage on frivolity or drink; the European has a tradition of work and saving, which has pursued him as far as this corner of America and drives him to advance himself, even independently of his own individual aspirations."



Laurent Kabila and son Joseph



Che was wrong! Kabila overthrew Mobutu and became the president of DRC. His son Joseph also became president.

中國 China: sees itself as the “middle country”

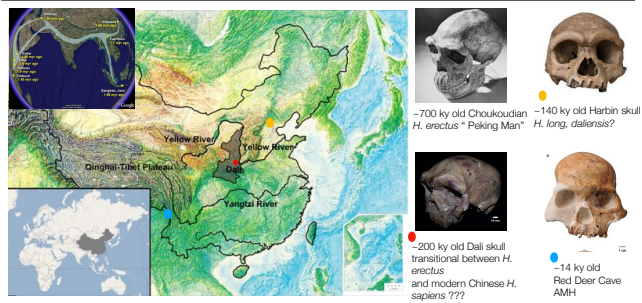
Ethnocentrism not restricted to Europe



Zheng He 鄭和 1371-1433



We can't be from Africa!



~700 ky old Choukoudian
H. erectus "Peking Man"



~140 ky old Harbin skull
H. long, daliensis?



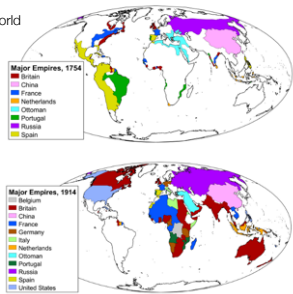
~200 ky old Dali skull
transitional between *H. erectus*
and modern Chinese *H. sapiens* ???



~14 ky old
Red Deer Cave
AMH

Smaller boats, but drive to explore, convert and conquer

European Conquest of the World

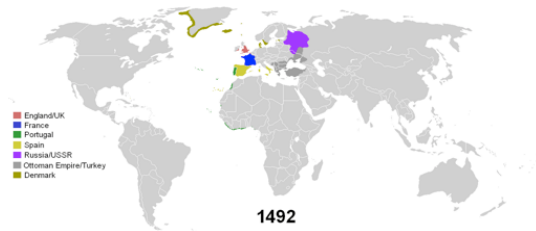


The ships mod the ancient Chinese navy were more tan three times the size of the Portuguese ships!

The view that Chinese people cannot possibly be descending from recently out of Africa populations is still rather popular in China.

Top: Colonialism in 1754. China remained the richest country on Earth, but had not conquered an overseas colonial empire. Major European powers concentrated on establishing colonies in the Americas (some of the most valuable of which, in the Caribbean, are too small to be shown here) and trading posts in Africa and Asia. based on a map by Wikimedia/Andrei nacu
Below: Colonialism in 1914. This map shows the world's major empires on the eve of World War I. The focus of European colonialism has shifted to the Eastern Hemisphere, and neo-European United States has become a colonial power in its own right, seizing some of declining Spain's possessions. After the war, much of the Ottoman Empire's territory was divided up among Britain and France, while Germany lost its overseas possessions to the victorious nations. China's power was severely weakened by the ongoing fall of the Qing Dynasty. based on a map by Wikimedia/Andrei nacu

Colonial History



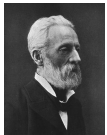
Brief instant replay of European, Ottoman and Japanese colonialism..

Ethnography vs “Anthropogeny”

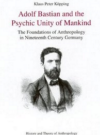
Adolf Bastian

vs

Ernst Haeckel



(1826 – 1905)

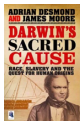


(1834 – 1919)



German ethnographers who experience the “psychic unity of man”, having spent decades living in far away societies, strongly disagreed with Haeckel’s racial hierarchy, causing many of them to refuse notions of evolution.

Darwinian Abolitionism vs Evolutionary Racism



Ironically, in Britain, many Darwinian evolutionists strongly opposed slavery, while German proponent of Darwinism such as Ernst Haeckel fell into scientific racism.

Ethnography Socio-Cultural Anthropology

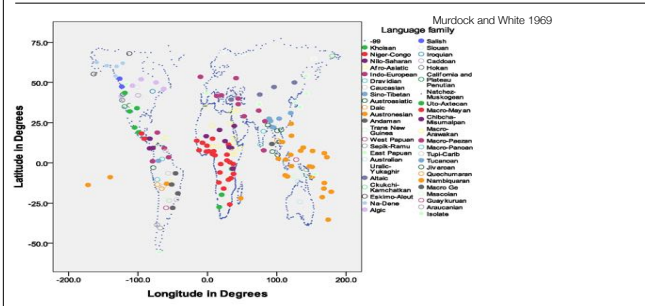
Observing other societies
Living in other societies

Looking for patterns

Quest for universals

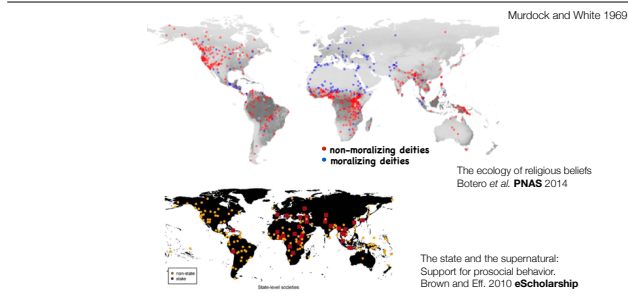
Quest for violations of universals

SCCS - Standard Cross-Cultural Sample: 186 cultures



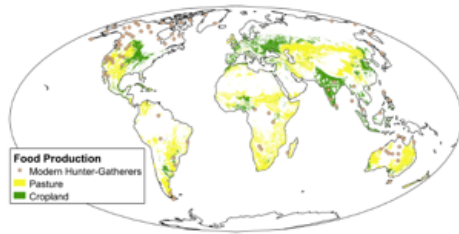
A classic collection of ethnographic data widely used in cross-cultural comparisons.

SCCS - Standard Cross-Cultural Sample: 186 cultures



Top: Global distribution of societies that exhibit beliefs in moralizing high gods (blue) or not (i.e., atheism or beliefs in nonmoralizing deities or spirits in red). The underlying map depicts the mean values of net primary productivity (i.e., the net balance of monthly consumption relative to production of carbon dioxide by living plants) in gray scale. Darker localities reflect places with greater potential for overall plant growth. Cross-cultural research entails a particular statistical problem, known as Galton's problem: tests of functional relationships (for example, a test of the hypothesis that societies with pronounced male dominance are more warlike) can be confounded because the sample of cultures are not independent. Traits can be associated not only because they are functionally related, but because they were transmitted together either through cross-cultural borrowing or through descent from a common cultural ancestor. George Peter Murdock attempted to tackle Galton's problem by developing a sample of cultures relatively independent from each other—i.e., with relatively weak phylogenetic and cultural diffusion relationships. Murdock began with the twelve hundred or so peoples in his *Ethnographic Atlas* (Murdock, 1967), dividing them into roughly 200 "sampling provinces" of closely related cultures. Murdock and Douglas R. White chose one particularly well-documented culture from each sampling province to create the Standard Cross-Cultural Sample (SCCS) (Murdock and White, 1969). The number of cultures is large and varied enough to provide a sound basis for statistical analysis; the sample includes 186 cultures, ranging from contemporary hunter gatherers (e.g., the Mbuti), to early historic states (e.g., the Romans), to contemporary industrial peoples (e.g., the Russians) (Silverman & Messinger 1997; Mace & Pagel 1994).

Living Foragers and their Plight



Gatherer-Hunters!

data from Navin Ramankutty and Ohio State University Hunter-Gatherer Wiki

Modern agriculture and hunter-gatherers. Map shows area used for major agricultural and pastoral production in 2000, and locations of societies that have depended on hunting and gathering for a significant portion of their food in the modern era. data from Navin Ramankutty and Ohio State University Hunter-Gatherer Wiki

Last Living Hunter Gatherers/Foragers



Ache, Paraguay



Himba, Namibia



Pirahã, Brazil



Khoisan, Botswana



Penan, Malaysia



Jarawa, Andaman Islands



Pila Nguru, Australia



Inuit, Arctic



Shuar, Ecuador



Tsimane, Bolivia



Aka, DR Congo



Hadza, Tanzania

Most of these societies are in major transition into sedentarism and farming.

Study of pre-agricultural societies - value to Anthropogeny?

What is left from pre-neolithic times?
Living Foraging Societies as models?

PRO: Natural fertility, minimal material culture, strongly reflect ecological conditions.

CONTRA: marginalized ecologically, influenced by pastoralist or agricultural neighbors, oppressed by neighbors and possibly secondarily hunter-gatherer.

Human relations area files
<http://hrat.yale.edu/>

Egalitarian Levelling Mechanisms

Mobility and flexibility: There are no fixed dwellings, fixed base camps, fixed stores, fixed hunting or fishing apparatus-such as stockades or weirs-or fixed ritual sites to constrain movements. People live in small camp units containing usually a dozen or two people and moving frequently.

Access to means of coercion: Another important factor in this context is the access which all males have to weapons among the !Kung, Hadza, Mbuti and Batek. Hunting weapons are lethal not just for game animals but also for people.

Access to food and resources: In all these societies individuals have direct access, limited by the division of labour between the sexes, to the ungarnered resources of their country.

Sharing: Levelling mechanisms come into operation precisely at the point where the potential for the development of inequalities of wealth, power and prestige is greatest.

Sanctions on the accumulation of personal possessions: Rules of inheritance are flexible and no-one depends on receiving such objects either by inheritance or by formal transmission from close kin of the previous generation during their lifetime.

The transmission of possessions between people: Hadza use a distinctive method for transmitting such personally owned objects between people which has profound consequences for their relationships. In any large camp men spend most of their time gambling with one another, far more time than is spent obtaining food. They gamble mainly for metal-headed hunting arrows, both poisoned and non-poisoned, but are also able to stake knives, axes, beads, smoking pipes, cloth and even occasionally a container of honey which can be used in trade.

Leadership and decision-making: In these societies there are either no leaders at all or leaders who are very elaborately constrained to prevent them from exercising authority or using their influence to acquire wealth or prestige

James Woodburn. Egalitarian Societies , *Man* 1982

The techno-cultural niche:

A second inheritance system - Cultural universals of technology


	Shelter, Home Base	Containers	
	Control of Fire	Cooking	
	Tool making	Lever	
	Weapons (projectile)	Tying material	
	Twining/weaving/nets carrying slings		

Brown, Donald (1991). Human Universals. Philadelphia: Temple University Press.

technical aspects of the winning modern human App!

Theodosius Dobzhansky on evolution and culture

"Nothing in biology makes sense, except in the light of evolution."
(Theodosius Dobzhansky)
American Biology Teacher, 1983,33(3): 125-129



"Human evolution cannot be understood as a purely biological process, nor can it be adequately described as a history of culture. It is the interaction of biology and culture.
There exists a feedback between biological and cultural processes".
(Theodosius Dobzhansky)
Mankind Evolving, p. 18, 1962

Cultural Universals of Language and Cognition:

Language employed to manipulate others	Continua (ordering as cognitive pattern)
Language employed to misinform or mislead	
Language is translatable	
Abstraction in speech and thought	Discrepancies between speech, thought, and action
Antonyms, synonyms	
Logical notions of "and," "not," "opposite," "equivalent," "part/whole," "general/particular"	Figurative speech, metaphors
	Symbolism, symbolic speech
	Synesthetic metaphors
Binary cognitive distinctions	Tabooed utterances
Color terms: black, white	Special speech for special occasions
	Prestige from proficient use of language (e.g. poetry)
Classification of: age, behavioral propensities, body parts, colors, fauna, flora, inner states, kin, sex, space, tools, weather conditions	Planning
	Units of time

Brown, Donald (1991). Human Universals. Philadelphia: Temple University Press.

Cultural Universals of Society:

Personal names	Conflict
Family or household	Cooperative labor
Generally Male Dominated	Gender roles Males on average travel greater distances over lifetime
Males Generally More Overtly Violent than Females	Marriage
Kin groups	Husband older than wife on average
Peer groups not based on family	Copulation normally conducted in privacy
Actions under self-control distinguished from those not under control	Incest prevention or avoidance, incest between mother and son unthinkable or tabooed
Affection expressed and felt	Collective decision making
Age grades	Etiquette
Age statuses	Inheritance rules
Age terms	Generosity admired, gift giving
Law: rights and obligations, rules of membership	Redress of wrongs, sanctions
Moral sentiments	Sexual jealousy
Distinguishing right and wrong, good and bad	Sexual violence
Promise/oath	Shame
Prestige inequalities	Territoriality
Statuses and roles, LeadersDe facto oligarchy	Triangular awareness (assessing relationships among the self and two other people)
Property	Some forms of proscribed violence
Coalitions	Visiting
Collective identities	Trade

Brown, Donald (1991). Human Universals. Philadelphia: Temple University Press.

Cultural Universals of Myth, Ritual and Aesthetics:

Magical thinking	Childbirth customs
Use of magic to increase life and win love	Rites of passage
Beliefs about death	Music, rhythm, dance
Beliefs about disease	Play
Beliefs about fortune and misfortune	Toys, playthings
Divination	Death rituals, mourning
Attempts to control weather	Feasting
Dream interpretation	Body adornment
Beliefs and narratives	Hairstyles
Proverbs, sayings	Art
Poetry/rhetorics	
Healing practices, medicine	

Brown, Donald (1991). Human Universals. Philadelphia: Temple University Press.

Post-Modernism

PREMODERN MODERN POSTMODERN

"Because God put it there and that's the way it's always been."
 "Growth and growth with inevitable progress!"
 "Happening (but how often) at the end of the world!"

Martin Heidegger
1889-1976



"Dasein" subject and object are inseparable

Jacques Derrida
1930-2004



"there is no out-of-context" (il n'y a pas de hors-texte)

Impossibility of objectively studying humans or their societies.

The exercise is a way of oppressing others.

All narratives are equally true if they are lived.

Anthropologists need to be advocates for the oppressed.

Emphasis on including the opinions of the people being studied.

A sense of relativism for the practices of other cultures.

Rejection of science.

Rejection of grand, universal schemes or theories which explain other cultures.

Testing the postmodernist system?

JOURNAL ARTICLE

Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity

Alan D. Sokal



Social Text
No. 46/47, Summer 1995
Published by Duke University Press

Sokal wrote that the concept of "an external world whose properties are independent of any individual human being" was "dogma imposed by the long post-Enlightenment hegemony over the Western intellectual outlook."

After referring skeptically to the "so-called scientific method", the article declared that "it is becoming increasingly apparent that physical 'reality' is fundamentally 'a social and linguistic construct.' It went on to state that because scientific research is 'inherently theory-laden and self-referential', it 'cannot assert a privileged epistemological status with respect to counterhegemonic narratives emanating from dissident or marginalized communities', and that therefore a "liberatory science" and an "emancipatory mathematics", spurning "the elite caste canon of 'high science'", needed to be established for a "postmodern science [that] provide[s] powerful intellectual support for the progressive political project."

They apparently felt no need to analyze the quality of the evidence, the cogency of the arguments, or even the relevance of the arguments to the purported conclusion.

The hoax was meant to expose the sloppiness, absurd relativism, and intellectual arrogance of "certain precincts of the academic humanities."

Cultural Relativism

Prince Pyotr Alexeyevich Kropotkin
Mutualism, Reciprocal Altruism
Russian Anarchism

MUTUAL AID

A FACTOR OF EVOLUTION

BY
P. KROPOTKIN

NEW YORK
NOLAN PHILLIPS & Co.
1909



Shinji Imanishi
Sociality Matters
Japanese Collectivism

今西錦司
生物の世界へ

SHINJI IMANISHI

東京
1978



Just as Victorian imperialism influenced Darwinian ideas, Russian anarchism and Japanese collectivism strongly influenced thinkers like Kropotkin and Imanishi.

Babakiuaria



<https://www.youtube.com/watch?v=oUMpPgMGce8>



<https://www.youtube.com/watch?v=oUMpPgMGce8>

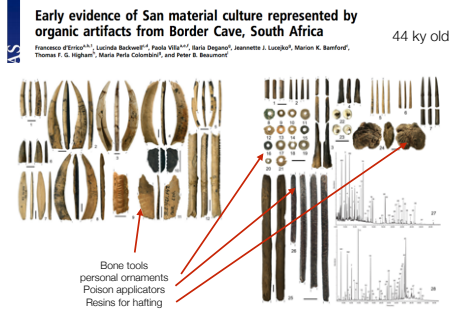
Culture Kit of behaviorally modern human



Fossilisable Hardware

D'Errico and Stringer *Proc R Soc* 2012

Organic Artifacts from S Africa



Bone awls and points (1–7), OES beads (8–21), *N. kraussianus* beads (22 and 23), lump of organic material bound with vegetal fibers (24), digging stick (25), poison applicator (26), and gas chromatograms of the lipid fraction extracted from the residue from one end of the poison applicator (27) and from the lump of organic material (28). (Scale bars: 1 cm.)

Behavioral Innovations of the Middle Stone Age

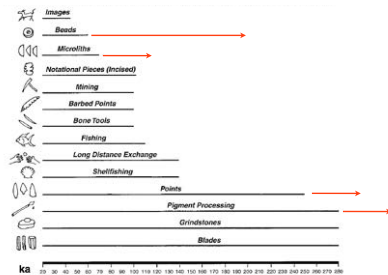


Figure 13. Modern behaviors and their time depths in Africa. © Sally McBrearty & Alison S. Brooks.

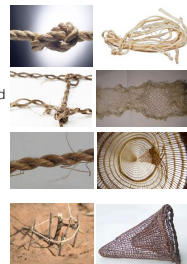
McBrearty & Brooks 2000, *J. Human Evol.*

Smooth transition into behaviorally modern humans, or revolution?

Fiber Technology: plant fibers and animal fibers



flax fiber 34 ky old Rep. Georgia



combining 2 dimensional objects for needs in a 3D world

from linear to spatial reasoning

hunting machines: traps -planning, delaying gratification, time travel

Fiber Technology: Mexican fan palm fibers for rope



Washingtonia spec.
Mexican Fan Palm



Phormium spec.
New Zealand Flax

Fibers can be twisted into strands and strand can be twisted together in opposite directions, causing the twist to remain permanent. additional fibers can be spliced into the nascent cord allowing the production of long ropes.....

Body Art (Karo tribe, Omo Valley, Ethiopia)



Body art in the Omo Valley of lowland Ethiopia. natural pigments from different color earth (red and yellow ochre and kaolin clay) are used in combination with flowers and other vegetation to create stunning body art in males and females, adults and children.

Origins of Symbolic Capacity?



Symbolic “Transition”



El Castillo Cave, N. Spain 40 ky



Abris du Castanet, S. France 38 ky



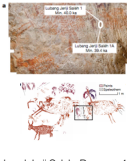
Shared Symbols for social niches



Hohle Fels, Germany 38 ky



carved shell, Java, 540 ky!!!!



Lubang Jerj Saleh, Borneo ~40 kya,

El Castillo cave N Spain 40 kya hands

Abris du Castanet S France 38 kya

Hohle Fels Venus, Germany 38 kya

540,000-Year-Old Shell Carvings May Be Human Ancestor's Oldest Art Live Science - December 3, 2014

The ancient, big-bodied relatives of modern-day humans not only ate freshwater shellfish, but engraved their shells and used them as tools, a new study finds. Researchers in Java, Indonesia, discovered engravings on a shell that dates to between 540,000 and 430,000 years ago. The ancient artwork could be the oldest known geometric carving made by a human ancestor, the researchers said. It's unclear what the engraving - a series of slashes and an "M"-shaped zigzag - means, but it could indicate that *Homo erectus*, the ancestor of modern humans, may have been smarter than was previously thought.

Our bodies as canvas: Ochre body paint



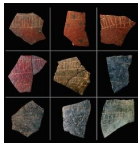
Himba women using ochre and milk fat



Blombos Cave ochre and palette 100 kya



Blombos Cave ochre 70 kya



Diepkloof Rock Shelter, Western Cape, South Africa, dated to 60,000 BP



Evidence that 100,000 years ago humans were using ochre to paint and paint themselves, likely in very similar ways than present day Himba people of Namibia.

Engraved ostrich egg shells stained with various pigments date back to 60 kya, A panel of mineral pigments used by the Kourmeyaay Tribe in San Diego County.



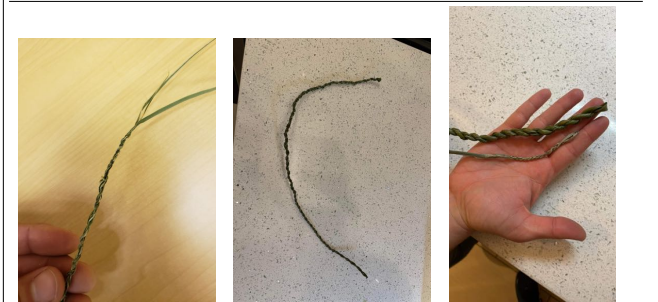
UC San Diego graduate students producing “primordial art” using mollusc shell, suspension of ochre and two pieces of hollow reed to create an “air brush”.



Some negative and prints on a fake cave wall, pigments: kaolin clay (white), red clay, and activated charcoal.

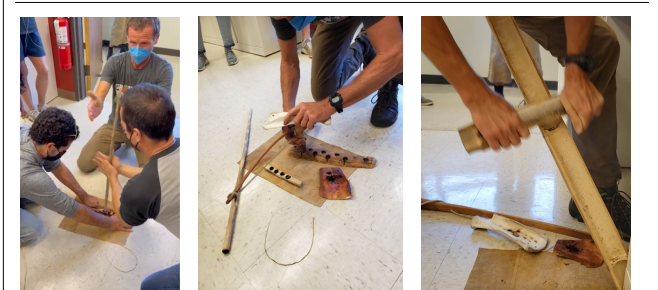
Applied by paleo air brush, *Achatina* giant snail shell as container, two pieces of reed or bamboo, one held vertically in the pigment solution, the other (longer) used to blow air above the shorter, creating a Bernoulli effect that sucks up the pigmented solution and results in a spray.

Fiber technology culture 101: Harakeke



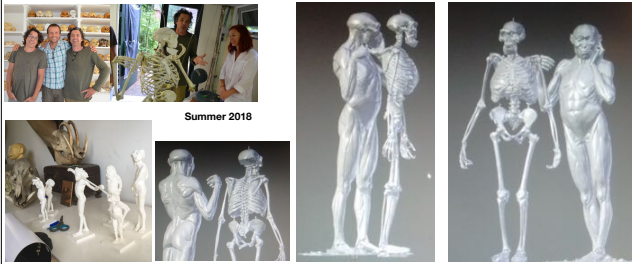
New Zealand flax (*Phormium tenax*) Harakeke in te reo Maori.

Friction Fire: 3 methods.



Simple hand drill, bow drill and bamboo fire saw.

Paleo reconstruction art



Kennis brother working on Java woman, 1.6 millions year old homo erectus.

Spring 2019



Kennis brothers' Java woman, 1.6 millions year old *Homo erectus* called pithecanthropus by it finder Eugene Dubois.

Why and why not?



Why are Lascaux-type cave paintings not found all over Africa or the Americas?

Projectile weapons



Spears
Schöningen Germany
270 ky old

Cognitive demands of hunting with spears,
atlatls, sling shots and bows and arrows?
Exaptation for positional relations in syntax?
Symmetrical projectile points?



Arrow heads
Sibudu Cave, S Africa,
64 ky old

Conditioning in massively delayed gratification:
laborious manufacture of weapons for the
incertitude of catching prey.
Spear, atlatl, bow and arrow, slings, blow gun

Niche Construction

social niche: language, kinship, tribe, alliances

belief/value systems, myths, religion

technology/culture: fire for landscape modification

technology/ culture: fire for cooking

technology: weapons for hunting and social competition.

technology/culture: symbolic creation for social cohesion, mental niche e.g. numbers, concepts.

technology/culture: weapons, shelter, clothing, shoes, boats - survival kits for any ecology

CULTURE: the hominid ecological niche? Loring Brace

CULTURE: the hominid ecological niche? Loring Brace

The Cultural Niche

non-biological inheritance system

rapidly evolving

human biology has become embedded in culture

A selection of cultural packages

Mbuti pygmies: fire, huts, dogs, projectile weapons, hunting nets, music, drugs, rituals, taboos, patrilineal and sister exchange common, mostly monogamous



Khoisan: fire, huts, carrying slings, projectile weapons, arrow poison, containers, rituals taboos



Penan: fire, huts, blow gun, arrow poison, music, hunting traps, rituals, taboos



Polynesians: fire, huts, outrigger canoes, crops, domestic animals (chicken, pig, rat and dog), navigation, rituals, taboos (and tattoos)



Inuit: fire (oil fire), snow huts, clothing, eye protection, projectile weapons for marine hunting, kayaks, dogs, sleds, rituals, taboos.



Cultural Convergence

e.g. Axial Age: 800 to 200 BCE three distinct region:

Yellow River, Yangtze, Ganges, Middle East: religious traditions with unprecedented emphasis on self-discipline, asceticism and otherworldly moralizing doctrines

Shift from short term to longterm strategies



Adaptive cultural norms

cooking
gift giving
kinship alliances / social networks
incest taboos
shared belief systems
leveling of opportunities (e.g. monogamy)
ethnocentrism /parochialism
slavery
caste systems
domestication
farming
exploration / curiosity
respect of authority?
traditions

Maladaptive cultural norms

Colostrum taboos
Baby formula
Unilateral breast feeding in Tanka Women
Infants sleeping alone
Human sacrifice
Genital mutilation
Foot binding in China, body modifications?
Lead-based cosmetics in Japan
Sweetened Soda
Sati (widow burning) in India
Male dominance / chauvinism
Human sacrifice / witchcraft / homeopathy / psychoanalysis
Prestige bias
Hygiene hypothesis?
Suicide, seppuku?
Endogamy?

Loss of Innovation? – Cultural (drift) attrition?

Tasmania: fishing technology, boomerang, complex tools, bone tools, sewed clothes
Polynesia: bow and arrow, pottery
Medieval Europe: loss of wheel pottery
Lascaux in the Americas?
Australia: bow and arrow (though woomera/atlatl retained)
Dorset Inuit: Bow and Arrow

Culture-Driven Evolution

Tool manufacture
Tool use
Projectile tool use
Language
Fire and Cooking
Clothing
Property and Inheritance
Fairness

Summary

Human mind is made for and by culture

Humans are biologically cultural e.g. language

Humans are culturally biological e.g. cooking

Cultures are subject to their own dynamic evolution.

Cultures can generate highly adaptive tool kits.

Cultures can generate highly maladaptive behaviors.

We are only beginning to appreciate how deep the interactions between culture and biology are for our species.