

Chapter 3

Living Differences

The Paradigm of Animal Cultures

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Abstract Variation in behavioural patterns between populations is a trademark characteristic of *Homo sapiens*. Indeed, it constitutes the basis of “cultural diversity”. Social anthropologists tend to resort to a “humanist” stance, reserving the label “culture” for our own species, whereas biological anthropologists tend to be “universalists”, assuming an evolutionary continuum of traits that constitute culture. A definition that aims to be species-inclusive would view culture simply as “socially transmitted behaviour”. Field researchers have uncovered numerous examples of non-human animal cultures, in which members of different populations of the same species were found to possess dissimilar behavioural portfolios. The greatest degree of behavioural diversity amongst non-humans is perhaps exhibited by chimpanzees. Studies across Africa revealed that each chimpanzee community exhibits a unique combination of traits related to social customs, communication, territorial aggression, war-like raiding, hunting strategies, food processing and consumption, and ingestion of plant matter for self-medication. However, local traditions have also been described for other taxa as diverse as triggerfish, bottlenose dolphins, killer whales, capuchin monkeys, Hanuman langurs, Japanese macaques and orangutans. At least in primates, population-typical behaviours are not always due to different local ecologies, but may be idiosyncratic expressions of “social identity” that allow individuals to distinguish “us” from “them”. Cultural diversity can thus be understood as a reflection of inter-group competition and strategies of resource acquisition. Human and animal cultures are also linked in a rather sad way: the current mass-extinctions of other animals caused by humans lead not only to a loss of genetic diversity, but likewise cultural diversity.

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3.1 What We Do and Monkeys Don't

Today's world is more complicated than it was for FitzRoy Richard Somerset. One of his brash aphorisms proclaims culture as "roughly anything we do and the monkeys don't". To be sure, most people would still agree with the British writer and 4th Baron Raglan: There are animals, and there are humans, and the former don't do what the latter can.

But—and not even to mention a certain Charles Darwin—there have always been those who were willing to look for similarities instead of differences. For example, in a nonfiction account of the Warsaw Zoo during World War II, the wife of the director, Antonina Zabinski, ruminates about our connection to the rest of the animal kingdom: "That night she lay awake thinking about the thin veil between human and other animals, only the faintest border, which people nonetheless drew as a 'symbolic Chinese Wall', one that she, on the other hand, saw as shimmering, nearly invisible. 'If not, why do we humanize animals and animalize humans?'" (Ackerman 2007, p. 239).

Wishful thinking such as this is not necessarily based on illusions about how the world should be. For those who study animals as professionals (as the Zabinskis did), it has become almost commonplace to zoomorphize people and to anthropomorphize animals, at least to a certain degree, given the fact that organisms share common ancestors and parts of their history. This conviction is increasingly nourished by the extraordinary accumulation of knowledge about the natural world and the organisms that have inhabited it during the last half a century since the opinionated Baron's death. A telling example relates to the pioneering 1960 discovery by the British primatologist Jane Goodall, who documented tool use in wild apes. Upon which her mentor, the paleoanthropologist Louis Leakey, reportedly declared: "Now we must redefine 'tool,' redefine 'man' or accept chimpanzees as humans" (Goodall 1971; Peterson 2006, p. 212).

Indeed, the task of toiling with definitions becomes ever more complicated. One of the latest exercises relates to one of the most enduring assertions employed to justify the dichotomy between "man" and "animal": the very claim that only humans possess *culture*. In this essay, we will join other evolutionary anthropologists and primatologists who dispute that this is a valid assumption.

Our view is, of course, not unbiased. As researchers at the interface of sciences and humanities, we have long gotten used to talk about "nonhuman animals" and "humans and other animals". Similarly, we do, right from the onset, not see nature and culture as opposites, definitional problems notwithstanding. Nature and culture, if anything, are intertwined, and complement each other up to the point that it becomes pointless to try to distinguish them. For example, cultural practices such as marriage pattern influence the genetic make-up of future generations (Oota et al. 2001). Vice versa, our achievements and shortcomings in the cultural arena are only possible because our natural features—our physiology and our brain in particular—enable us to enact them.

Talking about culture, as we will elaborate upon, means to a large degree talking about differences between populations. It is probably no coincidence that the animal culture topic gained speed with the end of the cold war—at the same time that

increasingly more human groups claimed to be somehow distinct from others while asserting their right to be different (Antweiler 2009). And thus, as we will also point out, the topic of animal cultures is, in its last consequence, likewise entangled in scenarios of genocide and culturecide.

3.2 How to Join the Culture Club

An exploration of whether or not there is “culture in nature” should best start with an attempt to define culture, because the answer will largely depend on what we are looking for in the first place. Unfortunately, there is no shortage of definitions and little agreement. One is tempted to quip that there are as many definitions of culture as there are cultures. . . .

The Latin roots of the word *cultura* are associated with cultivation or tending. In the early 1800s, it became associated with “high culture” in describing refined tastes and manners. Victorian *Zeitgeist* reserved the attribution to Western societies. The influential definition of the English anthropologist Edward Tylor follows this line of thought: “Culture or civilization [. . .] is that complex whole which includes knowledge, belief, art, law, morals, customs, and any other capabilities and habits acquired by man as a member of society” (cited in Miller 2005, p. 9). The definition, written in 1871, at the height of British colonialism, appears to be inclusive, but nevertheless lends itself to the exclusion of large segments of the human race from the culture club by allowing one to distinguish the “civilized” from the “primitive”.

Times have since moved on, and we perceive the world around us differently. Not even a contemporary animal behaviorist will be anymore deterred by Tylor’s definition, because none of the criteria listed in his catalog can easily serve as an *a priori* exclusion for other animals. Bees, lions, and gorillas—don’t they form “societies”? Doesn’t their behavior follow certain rules? Why can’t these count as “laws”? Animals might also very well hold “beliefs”. How can we know that an elephant doesn’t have deep thoughts as if she touches the bleached skeleton of a deceased group member, or while looking into a colorful sunset?

Numerous other test criteria have been formulated, aimed to demonstrate that only humans fulfill them. The list includes traits such as “tool-use”, “music”, “political aptitude”, or “story-telling”. But ongoing research has shown that animals can very well hold their own in these arenas, be they woodpecker finches, humpback whales, or primates. The birds use small sticks to extract grubs from plants (Tebbich and Bshary 2004); the whales communicate through elaborate songs over thousands of kilometers (Rendell and Whitehead 2001); and two weaker monkeys may form an alliance to dethrone a stronger (Perry and Manson 2008). Animals may also “tell stories” and thus instill illusions in the heads of others; for example, orangutans hold leaves or their hands to their mouths with the effect of making their voices resonate more deeply and aggressively—a ploy that can fool attackers (Hardus et al. 2009). And bonobos trained in an artificial language “gossip” about events that have happened earlier in the day (Savage-Rumbaugh and Lewin 1994).

Of course, we could argue that only a Mozart mass is true music; that baboon politics are a far cry from what Bismarck did when he forged the German Reich; that story telling has to be of the Brother Grimm standard; that an implement has to have the sophistication of a Swiss-army knife to count as a tool. Or even better: That only those who make tools to make other tools are tool-makers. In which case yet another bonobo genie will have to be freed from the bottle, one who uses a stone to knap flakes from another stone, so that a rope can be cut (Schick et al. 1999).

At such points, the bargaining inevitably starts anew—over what a term really means or should mean, and whether or not an observation supports or falsifies a certain intellectual position (see McGrew 2004 for a comprehensive review of such “checklists”). This process is complicated by the fact that data do not speak for themselves—somebody has to interpret them. Thus, our willingness to credit animals with certain abilities or not will strongly depend on the conviction that we have in the first place.

Indeed, some academics will happily welcome the closer connection with other animals suggested by such discoveries. Others will play the game of raising the bar and re-defining the criteria: “Let’s not get too excited and think there are no differences between them and us. [. . .] Chimpanzee tools are no more complex than a stick for termiting or ant dipping [. . .], whereas humans have built space ships to travel to the moon” (Rice and Maloney 2005, p. 194).

A complex term such as “culture” is particularly prone to be used as a pawn in these debates. As always, definitions are clearly influenced by the underlying agenda: either to establish what makes humans different from other organisms, or to reveal similarities. Consider the following definitions of culture collected from the glossaries in a dozen anthropology textbooks commonly used in undergraduate education throughout the USA:

- That which is transmitted through learning, behavior patterns, and modes of thought acquired by *humans* as members of society. Technology, language, patterns of group organization, and ideology are all aspects of culture (Kottak 1982, p. 490);
- The ways *humans* discover, invent and develop in order to survive. Culture is the human strategy of adaptation (Nelson and Jurmain 1991, p. 603);
- *Humans’* systems of learned behavior, symbols, customs, beliefs, institutions, artifacts, and technology, characteristic of a group and transmitted by its members to their offspring (Campbell and Loy 2000, p. 635);
- All aspects of *human* adaptation, including technology, traditions, language and social roles. Culture is learned and transmitted from one generation to the next by nonbiological means (Jurmain et al. 2001, p. 405);
- Ideas and behaviors that are learned and transmitted. Also, the system made up of the sum total of these ideas and behaviors that is unique to a particular society of *people*. Nonbiological means of adaptation (Park 2002, p. 449);
- Information stored in *human* brains that is acquired by imitation, teaching, or some other form of social learning (Boyd and Silk 2003, p. A6);
- All aspects of *human* adaptation, including technology, traditions, language, religion, marriage patterns, and social roles. Culture is a set of learned behaviors that is transmitted from one generation to the next by nonbiological means (Jurmain et al. 2003, p. 463);
- Learned, nonrandom, systematic behavior and knowledge that can be transmitted from generation to generation (Stein and Rowe 2003, p. 533);
- Behavior that is shared, learned and socially transmitted (Relethford 2005, p. G-3);

- A shared and negotiated system of meaning informed by knowledge that *people* learn and put into practice by interpreting experience and generating behavior. Interdependent with society (Lassiter 2006, p. 195);
- The sum total of learned traditions, values, and beliefs that groups of *people*, and a few species of highly intelligent *animals*, possess (Stanford et al. 2006, p. 557);
- Learned behavior that is transmitted from *person* to person (Larsen 2008, p. A12).

Clearly, all these definitions are driven by the underlying agenda to *not* do what the Victorians did, i.e., the definitions strive to allow for the finding that *all* humans have culture, independent of their ethnic or geographic background. On the other hand—as indicated by the added emphasis—ten of the twelve definitions are explicitly speciesist in that they describe culture as specifically human. Surprisingly, of these ten, only two come from cultural anthropology textbooks (Kottak 1982; Lassiter 2006), whereas eight are extracted from texts that focus on biological anthropology. Of these, only two (Stein and Rowe 2003; Relethford 2005) provide definitions that are not specifically human, and only one other (Stanford et al. 2006) specifically includes “highly intelligent” animals.

It is probably no coincidence that inclusive definitions all stem from post-1999 texts—the publication year of the benchmark article that put the idea of animal culture firmly on the map. This article identified dozens of behaviors in which populations of wild chimpanzees differ from each other (Whiten et al. 1999). Human cultures, this much can probably be agreed by everybody, exemplify a wide range of intra-specific differences in behavior. The same has now been shown for chimpanzees, as the study subjects live in various regions across Africa, but are all members of the same species.

Providing a post-1999 definition of culture that specifically excludes nonhuman animals thus probably reflects a conscious decision to reserve that label for *Homo sapiens*. Such authors stick to the traditional speciesism of cultural anthropologists that draws the line a priori: “Humans are animals with a difference, and that difference is culture” (Kottak 1982, p. 5).

Hardly any other term but culture is so central to the research and teaching conducted in anthropology departments, which, in Anglo-Saxon academia, historically encompasses four fields (Miller 2005):

- *biological or physical anthropology*: studying human variation, adaptation and change through, for example, the fossil record, comparative socio-ecology of primates (prosimians, monkeys, apes), ecology and nutrition;
- *archaeology or prehistory*: reconstructing life-styles of past cultures through examination of material remains;
- *linguistic anthropology*: documenting geographical distribution and development of native languages;
- *cultural or social anthropology*: exploring how and why human cultures are similar or different.

The new paradigm of “animal cultures” could, at least in principle, generate various synergies between these subdisciplines. For example, biological anthropologists could work with archaeologists to analyze tools of stone and wood abandoned by apes; or with linguists to detail intra-specific variations of sounds made by gibbons;

or with cultural anthropology to explore the degrees of behavior that differ between populations of the same species.

However, such cooperation is rare, as anthropology departments harbor academics that think in the “human–animal dichotomy” alongside those for whom the category “humans and other animals” comes naturally. In fact, departments have at times split along these lines. For example, the biological anthropologists of Duke University, USA, joined the Anatomy Department, and anthropology at Stanford University, USA, separated into the Department of Anthropological Sciences and the Department of Cultural and Social Anthropology. Part of the tension stems from the perennial nature/nurture debate over whether biology applies to people, reflecting dissent over the formula “nature in culture”. The new twist of applying culture to nonhumans now allows for dissent over a new buzzword: “culture in nature”.

The anthropologist and zoologist William McGrew is one of the lead researchers in the area of animal culture. He labels those who argue that nonhuman animals don’t belong to the “culture club” as *humanists*, and distinguishes them from those with a more gradualist view, whom he labels *universalists* (McGrew 2004).

The primatologist and ethologist Frans de Waal was, from early on, an outspoken proponent of the latter position: “The ‘culture’ label befits any species, such as the chimpanzee, in which one community can readily be distinguished from another by its unique suite of behavioral characteristics. Biologically speaking, humans have never been alone—now the same can be said of culture” (de Waal 1999, p. 636). He is not shy about turning the tables on those who display a tiring propensity to deny the traits that we have in common with other species—by diagnosing the offenders as suffering from “anthropodenial” (de Waal 1997).

And as much as we would like to be called “humanists” in the traditional philosophical meaning of the word—being forced to choose a camp we would readily settle with the universalists.

3.3 Culture as the Way We Do Things

The textbook definitions listed above are not only different from Tylor’s in that they try to be all-inclusive with respect to humans. They have also shifted from providing a catalog of criteria to instead focusing on an underlying mechanism: that of learned behavior.

A checklist of specific traits for what counts as culture is in some ways always arbitrary and one can easily add or identify traits that are not included. Tylor, perhaps for that reason, threw in the all-catching, albeit rather nebulous, expression of “that complex whole”. Centering the definition on a mechanism is a more principled way of unifying phenomena.

The simple characterization of culture as “socially transmitted behavior” has the advantage that it can accommodate the considerable variation in behavioral patterns between human populations. Inhabitants even of neighboring villages may differ in the way they speak, how they greet each other, what they consider acceptable conduct and what counts as offensive, how and what they like to eat, and

which implements they employ. Such “cultural diversity” is, without any doubt, a trademark of *Homo sapiens*.

At this stage, we have to back-pedal slightly, because we cannot necessarily assume that all behavior is based on learning. Instead, it could be caused by underlying variation in genetic make-up. For example, many adult humans are unable to drink milk without adverse affect. They do not have the genotype to produce the enzyme lactase beyond infancy, a trait that evolved rather recently among certain pastoralist populations (Ingram et al. 2009). The consumption of milk or the absence of this practice is therefore strongly influenced by genetic factors.

Then there are those learned behaviors, which—while not channeled by a particular genetic make-up—are nevertheless “constrained” by the environment (Parish and Volland 2001). An example would be how people eat rice—as varied customs reflect to a large degree the consistency of this food. Thus, chopsticks are the implement of choice when rice is sticky, whereas forks are more feasible when loose long-corn rice is consumed, while rice cooked into a mush is often eaten by hand. Even simpler, rice eating can be absent altogether in a population if rice was never available.

Finally, there are traits that are quite likely neither molded by genetic nor environmental influences. For example, people greet each other by bowing (Thailand), shaking hands (Germany), kissing on one cheek (Argentina) or both (Switzerland), or by moving the right hand towards the heart (Nigeria), etc. Of course, subtle environmental influences are always difficult to discount. Hygienic conditions could be a consideration, so that direct body contact is suppressed in Thailand but not Germany. However, such explanations border on silliness. It is more likely that such customs are arbitrary, thus representing pure *cultural variants*.

A definition of culture as socially transmitted behavior would not include traits that are genetically determined. Nevertheless, whether or not adults drink milk as mitigated by the absence or presence of lactase persistence would still contribute towards intra-specific variability—just that this patterning does not count as a “cultural trait” in the way we have defined culture. On the other hand, traits such as rice eating, which are more or less influenced by the ecology, *can* be socially transmitted. These customs, together with the arbitrary variants, would constitute the *cultural profile* of a population.

Differences in behavior can serve as important amplifiers of between-group differences and play a crucial role in competition over resources. However, environmentally constrained behaviors have a certain likelihood of appearing in neighboring groups, due to convergent evolution in similar surroundings and the likelihood of common ancestry. Behaviors that can serve as badges of social belonging therefore develop most efficiently if they do not serve any practical use or rational cause, but if they are simply arbitrary.

A fictitious tale illustrates how perfectly idiosyncratic do’s and don’ts can become entrenched into a societal narrative: “There are five monkeys in a cage. String a rope to the ceiling, tie a banana to it, and push a stair-ladder under the bait. Once the first monkey climbs the ladder, hose all the others down with cold water. If a second one tries, do the same. A subsequent attempt by yet another monkey to

get to the banana will be met by forceful intervention from his colleagues. Move the hose out of sight, remove one monkey from the cage and substitute him with a new one. When the newcomer goes for to the banana, he will be in for a nasty surprise, as four others will immediately start to beat him up. Exchange one more of the initial monkeys for a new group member. He is attacked as soon as he climbs the stairs—with the previous newcomer as part of the gang. Change a third monkey, and a fourth. As soon as the newcomers approach the ladder, they get whacked. Most of the aggressors have no idea why they beat up a fellow primate. Once you changed the last and fifth original monkey, there is nobody left who experienced the displeasure of being hosed down. Still, all monkeys will simply ignore the banana. Why? Well, nobody knows.”

The story is a fitting illustration of a definition of culture developed by William McGrew as “the way we do things” (2004, p. 24f).

3.4 Multiculturalism Amongst Animals

The generous definition “socially transmitted behavior” has allowed zoologists to interpret numerous cases of the way things are done in one animal population as opposed to another as expressions of culture (reviews in Galef and Heyes 1996; Frigaszy and Perry 2003).

The potential cognitive mechanisms that allow the perpetuation of acquired behavioral pattern are the subject of intense research programs. Candidate processes include simple learning events such as conditioning, social facilitation, local enhancement, as well as more complex mental machinations related to insight, theory of mind, and teaching (Byrne 1995; Tomasello and Call 1997; Hurley and Nudds 2006).

Contemporary cognition research draws on methods from diverse disciplines such as developmental psychology, meme theory and neurobiology. Still, naturalistic studies of behavior are clearly as important, as a full understanding of cognitive mechanisms requires that they are tied back to selective processes under which they evolved. For this, we need to unearth what nonhuman animals actually do as well as the bandwidth of what they are capable of achieving. The following examples are meant to provide a glimpse into the variety of thoughtscales.

Some descriptions highlight the existence of a natural barrier such as a river that may have prevented the diffusion of a certain locally made “invention”. Others refer to subsistence techniques or thermoregulation. However, still others seem to be perfectly “useless” behaviors, and some resemble human “fashions”, that appear just to die out soon after.

The case studies can serve as illustrations of the phrase “the way we do things”. It implies characteristics that need to be present in cultural beings—chiefly that the behaviors in question have to be somehow standardized, collective, and that they can serve as a source of “identity” (McGrew 2004, p. 25). The following accounts also tell that identity can well form around something that is *not* done in a particular population.

- *Triggerfish*. Members of this taxon prey on sea urchins protected by spikes. The fish turn them over by “blowing” a jet stream of water against the urchins, exposing their unprotected body parts, into which the fish can bite. A different technique is observed in the Red Sea—but nowhere else. Here, fish first bite off the spines of the urchins, which allows them to drag their prey towards the surface. They then let go, and start feeding on the unprotected underneath of the prey while the urchins tumble slowly back towards the bottom (Bshary et al. 2002).
- *Bottlenose dolphins*. A common foraging technique sees these whales plow through the bottom of the ocean with their pointed beaks to unearth prey. But, doing this, they risk stings from bottom dwellers. Dolphins in Shark Bay, Australia, overcome this hazard by wrapping their sensitive beaks with a sea sponge that acts like a glove. The inventive covering probably protects against scrapes and stings (Krützen et al. 2005).
- *Orcas*. North America’s west coast is a favorite hunting ground of these predators. Pods of killer whales can be distinguished on the basis of characteristic vocalizations as well as hunting styles. One group will drive schools of salmon into a spiral before gorging on them; another is specialized to attack seals that rest on land. The orcas, in a rather dangerous maneuver, will beach themselves, try to catch a seal, and then rock back into the sea (Baird 2000).
- *Otter*. Californian sea otters will float belly up, holding an anvil stone between their paws. They then smash mollusks that they balance on their chests. Otters further up the coast will not use this *modus operandi* (Hall and Schaller 1964).
- *Capuchin monkeys*. Some rather strange fads develop from time to time in certain populations of these New World primates, and die out again after a while. Pairs of monkeys in a Costa Rican population will suck each others’ toes; they will stick a finger up each other’s nose; or, most bizarre, poke a fingertip into the eye-socket of a partner, noticeably dislodging the eye-ball. These penetrations are probably associated with some discomfort and danger, as capuchin monkeys neither cut their fingernails nor clean under them. The practices perhaps serve to build trust between the partners. And those with a proven track record of not hurting their partner—despite the fact that they could—will make reliable allies in aggressive encounters with third parties (Perry and Manson 2008).
- *Hanuman langurs*. The famous temple-monkeys of India seem to follow different rules about social etiquette. Those who live around Jaipur in the northwestern state of Rajasthan will huddle with each other, rain or shine, in wintry chilly air as well as in the humidity of the rainy season. Just 150 km or so towards the west, around the city of Jodhpur, one will hardly ever see huddling between adult monkeys; they keep their distance, even when temperatures approach freezing point (Sommer 1996).
- *Japanese macaques*. The red-faced monkeys of Japan have been studied for more than 50 years. We thus know about numerous behaviors that reflect local traditions restricted to a particular group or their neighbors. Some mothers will “wash” their babies in the ocean; some will dive to hunt for seafood; some will sit around human-made fire to warm their hands. Not all behaviors have to do with subsistence or thermoregulation. Females in some groups will reject the advances of males and prefer homosexual mounts instead. Elsewhere the monkeys handle pebbles, pile them, roll, rub or clack them together (Huffman 1996; Vasey 2006).
- *Orangutans*. Several dozen local traditions are described from the Indonesian island of Sumatra. This includes a peculiar way of greeting each other by making a “raspberry” sound, and the habit of using vegetation as a cover to escape from the rain. Some apes utilize small wooden picks, held in the mouth, to extract fatty seeds from the very prickly *Neesia* fruit. These trees grow at both sides of the Alas river. The forest floor on one side of the river, in the Singkil swamp, is littered with wooden tools. Those orangutans inhabiting the Batu-Batu swamp on the other side of the waterway do not use the implements (van Schaik et al. 2003).

The above examples illustrate the emergence of *cultural zoology* as a multi-taxonomic discipline. Nevertheless, the topic of animal cultures is still largely primatocentric—simply because we are anthropocentric, and a disproportionate amount of attention is heaved upon primates as our closest living relatives. As the field moves on (see, e.g., Emery and Clayton 2004), it will certainly be increasingly difficult to get away with a new definition of culture as “roughly anything that we do and the monkeys do”. Still, it can be justified to single out studies of chimpanzees as they provide not only more primate examples, but also stand for the prime examples which served as a catalyst for a fresh look at other animal taxa.

3.5 Panthropology

The professionals who explore human societies and their varied local customs of how to obtain, prepare and ingest food, or the regional expressions of rituals and social conventions are called anthropologists. According to Greek etymology, the diversity of humans (anthropos) is the subject of their words and wisdom (logos). However, “anthropology” has spawned one new subdiscipline, aptly nicknamed “panthropology” (Whiten et al. 2003): the exploration of the diversity of behavior in our closest living relatives, i.e., apes of the genus *Pan*.

Members of this genus, the chimpanzee (*Pan troglodytes*) and the bonobo (*P. paniscus*), display the most astounding degree of behavioral diversity in non-human animals (McGrew 1992; Wrangham et al. 1994; McGrew et al. 1996; Parish and de Waal 2000; Boesch et al. 2002; Hohmann and Fruth 2003; McGrew 2004). Research across Africa revealed for each study community a unique combination of the presence or absence of traits related to social customs, communication, territorial aggression, war-like raiding, hunting strategies, tool-kits, food processing and consumption, and ingestion of plant matter for self-medication. This degree of plasticity in behavioral patterns is perhaps not surprising given that *Pan* and the likewise very flexible *Homo* shared a common ancestor until about 5–7 million years ago. However, the relative richness of documented cultural diversity is also at least partly the result of an observation bias, given that the ecology and behavior of chimpanzees is far better explored than that of other apes.

The classic study already mentioned above (Whiten et al. 1999, 2001) compiled the behavioral patterns at nine long-term chimpanzee research sites. Behaviors for which ecological explanations reflecting environmental constraints seemed plausible were carefully discerned from a couple of dozen traits customary or habitual among some groups, but absent in others, which could count as purely cultural variants.

Well-known arbitrary traits are the styles of mutual grooming amongst chimpanzees. At some sites the apes will face each other while sitting on the ground, and each will fully extend the free hand overhead and clasp the partner’s hand. It is hard to conceive an environmental pressure that would induce the apes to attain this peculiar A-frame style of grooming.

Another famous example is nut cracking with stone or wooden hammers against an anvil. This technique is restricted to West Africa, despite an abundance of nuts and potential tools elsewhere. The practice is in all likelihood neither genetically determined nor a reflection of particular environmental conditions because some communities exhibit the behavior while others within a closely related population do not—although they are separated only by the banks of the N’Zo-Sassandra River in Ivory Coast and exposed to virtually identical environmental conditions. Interestingly, it was recently discovered that chimpanzees in the Ebo forest, Cameroon, more than 1,700 km east of the previously proposed riverine “information barrier”, also crack *Coula* nuts with stone hammers, while sitting in trees and using thick branches as anvils (Morgan and Abwe 2006). The observation does not necessarily challenge the “cultural variant” explanation, but questions the existing model of the cultural diffusion of nut-cracking behavior. Instead, nut cracking could have been invented multiple times, or perhaps it became extinct in the region between the N’Zo-Sassandra River and the Ebo forest.

The attitude that chimpanzees display towards water can count as another cultural variant. The apes will normally avoid coming into any contact with the wet element, carefully circumventing puddles, and treading carefully along the edges of rivers or lakes. However, in Senegal, they enjoy a good soak and splash in shallow ponds. Explanations that seek to correlate this cautiousness towards water with factors such as climate or parasites have failed so far (McGrew 2004).

Similarly, it is quite surprising that chimpanzees in Gashaka, Nigeria, will eat ants virtually every single day, using stick tools. However, they will never ever consume a termite—despite the fact that these insects are available to them and more nutritious in the first place (Fowler and Sommer 2007).

The above examples lend themselves to question some deeply ingrained assumptions about human uniqueness. For example, an experienced chimpanzee researcher can, by just looking at a catalog of absent or present behaviors, discern a West African culture from the culture in East Africa. She could even differentiate Ugandan chimpanzees into those that live in Budongo and those that live in Kibale—in very much the same way that human ethnographers could tell a lifestyle that is predominant in Japan apart from the ways of day-to-day life conducted in France, with further differentiation between Breton and Alsatian customs.

If chimpanzees were humans, we would probably also not hesitate to assume that they respect certain “taboos”. Nigerian villagers at Gashaka abhor the thought of eating cats or dogs—whereas those across the Cameroon border, just 2 days’ walk away, have no such inhibitions. The psychology of apes may well correspond to such ways of defining one’s ethnic group: “You want to be a Gashaka chimpanzee? Well, then eat ants as often as you like. But don’t dare to devour termites, and never ever disturb the spirits in the water. We don’t do this here... .”

In-depth research of an animal population can easily be likened to the cultural anthropological practice of *ethnography*, which produces a descriptive account of behavior observed within the particular study population. A further step is *ethnology*, the analysis across populations, which aims to detect patterns and causes of them. Only through investigations of “as many groups of chimpanzees in as

many parts of Africa as possible” (Goodall 1994, p. 397) can universal behaviors be discerned from variants and whether these differences reflect genetics, environment, or arbitrary customs. Major tools for cross-cultural comparisons of human populations are the HRAF (“Human Relations Area Files”). The dynamic development of the paradigm of “cultural primatology” thus comes with the explicit aim of creating CRAF: “Chimpanzee Relations Area Files” (McGrew 2004).

We are thus living in an era brimming with surprising discoveries about our closest living relatives, an era of *Pan novus* that can and will lead to significant re-formulations of what it means to be human. This meaning will add to a paradigm of *Homo novus*, properly informed by evolutionary biology.

Sadly, however, the era of *Pan novus* is coming to an end, just when it was about to begin. The field of “cultural panthropology” has already become another “urgent anthropology”, given that many wild populations of apes are threatened by extinction due to habitat destruction, disease, and the trade in bush-meat (Sommer and Ammann 1998; Peterson and Ammann 2003; Caldecott and Miles 2005; Sommer 2008). Correspondingly, not only genetic diversity is lost, but also cultural diversity—similar to how globalization increasingly destroys the inherited multiplicity of human ways of life. It is already clear that “we can never know the true extent of cultural diversity in chimpanzees because so many communities, along with their cultures, are already gone” (Goodall 1994, p. 397).

3.6 Cultural Capacity: Blessing and Curse

The swan song that can be sung for chimpanzees can also be sung for other animal forms, which are, as we are only about to discover, often surprisingly akin to us in their cultural diversity—whether they count as birds, primates, or whales.

This realization has practical consequences for efforts to conserve biodiversity. Cultural zoology, like modern molecular genetics, amplifies the differences between organisms that we might have previously just lumped into a single category, a single type. The new and more nuanced picture complicates straightforward appeals to save “the chimpanzee”, “the orca”, or “the otter”. Because, who is going to decide which clusters of cultural (or genetic) markers should have priority over others doomed to go extinct in the near future?

And from where is this impeding mass extinction garnering its momentum in the first place? Ironically, it seems as if cultures come with an inbuilt tendency to gravitate towards their own annihilation. . . .

Human groups have always competed, be it over mating partners, water, land or grazing grounds. Traditions are a major tool in these conflicts, as they allow members of one’s own group to set themselves aside from those of others—who speak in an ugly dialect (such as Bayerisch), wear strange clothes (such as Lederhosen), and have despicable customs (such as eating Weisswurst).

Inter-group competition does, however, also lead to the need to foster ever-larger alliances, because those who cooperate across prior borders of in-group vs. out-group will be able to outcompete those who stick to their aged ways of thinking

small. Thus, a well-known spiral is set in motion: “I against you; we against our neighbors; our village against your village; our tribe against your tribe; our country against your country”—until we arrive at nation states, NATO, and UN.

Small coalitions tend to be swallowed by larger alliances, and the defeated tend to attain the habits of the victorious. In this way, customs become more and more unified. The final stage of this development is globalization. For many of us and in many aspects, life becomes easier this way: McDonalds, internet, Big Brother, football, and plastic bottles have become ubiquitous parts of everyday life, useful or entertaining. The flipside is that our world is also becoming poorer, as variety is disappearing.

The new developments in cultural zoology establish a yet closer affinity to other organisms than even evolutionarily minded scientists had hitherto realized. This affinity comes with good news: Our common heritage with other animals extends to such a degree that we can perceive them as cultural beings, which produce a mind-boggling variety of lifestyles. But there is equality in a sad way, too: We now know that the disappearance of other organisms is not only loss of genetic diversity—it can also mean a loss of cultural diversity.

Diversity is aesthetically pleasing. But diversity, including cultural diversity, could only be had for the price of change in the first place—as change is the heartbeat of evolution. As individuals, organisms will not normally live through even a single interval of these drumbeats. But in the current case, change is occurring more rapidly. We also know more clearly that there will be consequences.

Stephen Crane, at the turn of the twentieth century, gave this fatality a poetic touch: “Sir, I exist!”/“However,” replied the universe,/“The fact has not created in me/A sense of obligation” (Crane [1899] 1998). Yes, change is the heartbeat of evolution, steady and unstoppable and not caring in the least. Our cultural capacities—equally a blessing and a curse—may just speed up the process.

So, could it be that what turns out to be unique about us may be our capacity to know beforehand the dimensions of demise? This thought may well spawn another paradigm: that of animal thanatology. While as yet unexplored, one would be willing to hazard a guess: Animals such as apes and elephants understand that individual life is finite—if the fact is anything to go by that, day after day, they may attend to the corpse of a dead conspecific. But perhaps they are not burdened with the abstract concept of “extinction”? Surely, one would not wish it upon them.

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