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Goods and Humans in Deep Historical Perspective:
An Essay on History, Neuroscience, and Material
Culture

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delivered at the Litteraturhus in Oslo on 20 January
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In a world marked by a warming climate and environmental degradation, a world that revolves around the ceaseless consumption of goods, it is useful to ask ourselves a historical question: How did we get in the fix we are in? We can answer this in the short term by pointing to the emergence of global capitalism in the eighteenth or nineteenth centuries, an event that undoubtedly marks a crucial transformation in the human relationship with goods. But our relationship with goods goes back much further than this. Goods were present at the making of humanity itself early in the Pleistocene, and over the ensuing millennia they became caught up in our cultures and our patterns of communication. As fields such as cognitive archaeology and neuropsychology have now shown, goods have worked their way into our nervous systems and our emotions. We have incorporated them in the same way that our distant eukaryotic ancestors incorporated mitochondria, formerly autonomous entities that are now essential to our very functioning. The rise of modern global capitalism may have been an unprecedented and emergent process, but it was made possible by the deep history of humans and things. This history is not a history of humans alone. It is a history of two autonomous phylogenies that became entangled in a coevolutionary relationship. We can think of our relationship with goods as a mutualistic one, bringing benefits to both sides. Or, contemplating the crisis of the present day, we might want to think of it as something more pathological, an addiction or an infection,

where the goods survive on human hosts who are unmindful of the many ways in which their energy is being coopted to serve another. In extreme cases, goods can ride their human hosts to their deaths, but survive themselves to embark on new lives.

If that suggestion seems extreme or unduly alarmist, contemplate the mysterious fate of the Franklin expedition. In May of 1845, two ships, the *HMS Erebus* and the *HMS Terror*, and 128 men under the command of Sir John Franklin of the British Royal Navy set out from England in search of the fabled Northwest Passage.¹ Off the coast of Greenland, they encountered some whaling ships, but were never heard from again. The disappearance of the Franklin expedition caused a media sensation back in Britain, and over the ensuing decade, numerous rescue missions set out to discover the fate of the two ships. Inuits interviewed by members of the subsequent missions described men who had fallen down and died as they walked the frozen waste and told dark tales of cannibalism. Eventually, rescuers discovered a site located on King William Island in the high Arctic where, having abandoned the two ships, the surviving members of the Franklin expedition had come ashore. Inside a cairn the rescuers found a note, the only written record of the expedition's fate, describing the grim conditions facing the men. In recent years, further study has continued to unravel the mystery of what happened. Forensic analysis of human remains, conducted in the last few decades, has revealed signs of lead poisoning, possibly from lead that had leached out of the solder used to seal tins of food. One of the symptoms of lead poisoning is neurological instability. It is possible that Franklin's men, in addition to the horrors imposed by the relentless cold and isolation, were slowly but inexorably going insane.

From all of these sources it has become possible to reconstruct the outlines of the tragic denouement of the expedition. After wintering over near Beechey Island in 1845-46, the *Erebus*

and the Terror sailed southwest to King William Island. Unusual climate conditions, however, may have caused drifting ice to pile up around the ships, which effectively prevented them from moving. People on the icebound ships began to die, including Franklin himself, who died in June of 1847. The likely culprit was scurvy. In April of 1848, a hundred and five survivors abandoned ship and came ashore at Crozier's Landing on King William Island, bringing an enormous quantity of clothing and stores. The survivors then set out on foot in hope of reaching safety, leaving the bulk of the material behind as a cache.

In the course of the triage to determine what to bring and what to abandon, they settled on some objects of obvious utility, including tins of food, canteens, sextants, and chronometers. Some notably useful things were left behind, chief among them a medicine chest. What astonished the members of the rescue missions, however, were some of the objects that the doomed men chose to carry to the very end. Next to a solitary set of human remains discovered along the south coast of King William Island in 1859, for example, lay a notebook, a pocket-comb, and a small clothes-brush. One of the most significant finds was a lifeboat that had been fashioned into a sledge. In it were found two skeletons and what was described as an amazing quantity of goods, including silk handkerchiefs, scented soaps, a beaded silk purse, sponges, carpet slippers, silver cutlery, toothbrushes, and hair combs. One of the men had even brought along a novel, Oliver Goldsmith's *The Vicar of Wakefield*. The image is a compelling one: the doomed men harnessing themselves to a heavy sledge, burdened down with the things that gave their life meaning even as their sanity may have been dissolving from the effects of lead poisoning.

The relics of the Franklin expedition, ranging from Franklin's gold watch to silver spoons bearing family crests, were gathered up by later expeditions. Others were purchased or taken

from the Inuit people who had also collected some of the relics, partly out of curiosity, partly with an eye to providing the objects with new lives as blades or other useful tools. All of the relics gathered by subsequent expeditions, hundreds in all, were brought back to England, where they were put on display to a wondering crowd. The relics of the expedition were subsequently sketched and published in the *Illustrated London News*, and now form a collection in the National Maritime Museum in Greenwich, England, where they can be visited today.²

The tragic denouement of the Franklin expedition offers a striking example of the perfectly obvious, which is that people form attachments to things, and can do so even to the point of debilitation. The most dramatic instance of the pathological lengths to which this debilitation can go is afforded by the practice of hoarding, where people, often elderly or suffering from dementia, surround themselves with items of marginal utility such as old newspapers and used packaging material. These piles can get so high that they occasionally cave in, trapping and sometimes even killing the hoarder. Hoarding itself can be thought of a pathological version of collecting, a custom that sprang into being as a gentlemanly past-time in eighteenth-century Europe. Hoarding and collecting constitute just two of the many contexts in which goods or objects cling to us, in much the way that they clung to the remnants of the Franklin expedition. They cling, in part, because we fill them with meaning.

From a post/human perspective, the human attachment to goods raises the question of just what it means to be human. We can think of ourselves as biological bodies or phenotypes consisting of cells—a naked body, if you will. But following Richard Dawkins, it is also possible to imagine that the human phenotype extends well beyond the body to include the objects that surround us, ranging from clothing and ornaments to tools and weapons.³ Certainly this is how

some hoarders imagine themselves. One psychologist has reported that hoarders say to him things like “If I throw too much away, there'll be nothing left of me.”⁴

In this relationship between persons and things, who is the boss? Who is the active force? On the Franklin expedition, did the people own the things, or did the things own the people? The food writer, Michael Pollan, once found himself contemplating a similar question as he kneeled in the dirt tending to his potato plant.⁵ We like to think humans domesticated plants and animals to do their bidding, but supposing it was the potato who domesticated the human? Pollan is teasing us, of course. The suggestion that humans are there to do the bidding of potatoes sounds silly because it is based on an Aristotelian idea of a single vector of causation, from subject to object. As Pollan points out, it is far better to think of the human and the potato as separate organisms whose histories or phylogenies have become entangled in a coevolutionary relationship, where every trend initiated by one party responds to or amplifies an initiative by the other. Biologists describing a predator-prey relationship speak of an evolutionary arms race that can go haring off in a wild direction.⁶ The entangled relationship between the cheetah and the gazelle is an oft-cited example, for as the cheetah got faster over evolutionary time, so did the gazelle. Relatively to other animals, the cheetah and the gazelle are now ridiculously fast. Relative to each other, however, the cheetah and the gazelle have more or less stood still; neither is faster than when the relationship began. The biologist Leigh Van Valen, the first to theorize this relationship, described it as the Red Queen principle, where Alice and the Red Queen dance furiously but never get anywhere.⁷

A coevolutionary relationship can also be symbiotic or mutualist; the potato and the human is one such example, but one can gesture just as well to rice, horses, or cattle and so on. Where domesticate animals are concerned, it is easy to think of them as oppressed slaves, but

one does not need to deny the horrific conditions of the meat, dairy, and poultry industries to observe that we, too, have become enslaved to agriculture. It has now become commonplace to describe the agricultural transition of the Neolithic in coevolutionary terms, and the same holds true for the Green Revolution, and in fact everything having to do with humans and the biosphere.

This coevolutionary model works just as well for goods. In an abstract or philosophical sense, it does not matter that goods are not alive and do not have DNA. Looking at one side of the coevolutionary relationships, the presence of goods across deep human history has undeniably shaped our phylogeny in hugely important ways. The environment in which we evolved, starting at least 2.6 million years ago, was an environment that included artifacts, beginning with tools, later ornaments, musical instruments, clothing, and works of art. The presence of artifacts led to directly to changes in the human phenotype, as in the size of the gut and the shape of the jaw.⁸ Why spend metabolic energy fashioning threatening brow-ridges if weapons can do the same, and more cheaply? We can appreciate the way in which humans have become entangled with goods in contemplating the synaptic plasticity that allows tools or prosthetics to be integrated directly into a person's body map.⁹ We are prone to attribute intentions to inanimate objects and even respond to them emotionally. Compulsive hoarders, for example, are deeply attached to the objects they collect and become terribly anxious at the thought of losing them. This emotional attachment to goods, surely, is the reason why two men in the Franklin expedition carried novels and spoons with them until the bitter end. Importantly, the changing presence of goods allowed unpredictable or contingent changes in patterns of human sociability. We cannot know how or why the humans of the Upper Paleolithic became so used to dressing themselves with necklaces and sequins made of marine shells, ostrich egg shells,

the pearl teeth of red deer, and later beads carved from mammoth ivory and soapstone. What we do know is that beads were gradually exapted for new functions, such as the marking of group identity or the making of kinship.

On the other side of the relationship, goods themselves have evolved dramatically in response to the use to which humans have put them, following the classic evolutionary pattern of variation, selection, and transmission.¹⁰ If a visiting Martian who understood the principle of natural selection but otherwise had no knowledge about the Earth were to visit an exhibit displaying the phylogeny of Paleolithic beads and their descendants, it is not clear that the Martian could distinguish that phylogeny from the phylogeny of living organisms. In the case of goods, of course, the information transmitted from one “generation” to another is not preserved within a genome; it is preserved, instead, in human customs or mental blueprints. Like viruses, goods cannot survive without a human host. But viruses change and evolve nonetheless. Contemplating this fact, we might wonder about the appropriateness of the name *Homo sapiens*, and we might ask ourselves whether it might be better to think of ourselves as *Homo tenens*, the possessing species.

Although we are all *Homo tenens*, the ways in which we possess goods, or the ways in which goods possess us, are contingent upon cultural or historical circumstances. Consider the case of hoarding. The psychological literature approaches compulsive hoarding as a neurological or psychological phenomenon with no meaningful history. Some research has suggested that if a perfectly ordinary person suffers a lesion to a specific part of the brain, she or he is more likely to begin hoarding valueless objects.¹¹ But hoarding is also likely to be a historical construct. Although to the best of my knowledge there has been no research on the history of hoarding, it seems improbable that there was any pathological hoarding in medieval Europe, a society

uncharacterized by any collecting behaviors whatsoever. It is even less likely that there could have been pathological hoarding in the Paleolithic era—there simply was not enough stuff. There was of course plenty of adaptive hoarding in earlier eras of human history. Upper Paleolithic humans began to cache food systematically, in much the same way that certain other animals and birds cache food. Northern Europeans in the ninth and tenth centuries cached coins and precious metals to preserve them from the ravages of Viking raids, and the Vikings themselves made hoards of coins or hack silver. The modern oddity is the hoarding of junk. Given the way in which pathological hoarding is historically situated, it is unlikely that the behavior can be explained simply by reference to brain lesions or disruptions to the serotonin system. What is also required is a particular society or economy and pre-existing set of attitudes to goods and patterns of consuming behavior. Put differently, pathological hoarding is, in all probability, historically contingent.

To evoke the contingency of a behavior such as hoarding is to raise the possibility that history and neuroscience, seen over deep human time, are fields that can inform one another in useful ways. At first blush, this claim does not seem so very obvious. The past cannot easily offer neuroscientists a set of readily testable hypotheses. Historians, in turn, have been somewhat disinclined to deal with behavioral or psychological patterns that appear to be universal. To illustrate the latter point, let us assume, as many scholars have done, that violence is innate. Some people in saga Iceland were prone to violence. With the exception of figures like Njal, they had little compunction about killing their enemies in the course of bloodfeuds. Alternatively, if they held their enemies in deep contempt, they left them alive and simply cut off their hands, giving their maimed victims a ceaseless reminder of their own impotence.¹² We might like to explain this violence by claiming that it is innate, but just what have we explained in so doing?

To claim innateness is to say nothing useful about *why* the society of saga Iceland was characterized by these particular patterns of violence, which have all the appearance of being coldly political rather than hotly emotional. Moreover, judges in the criminal justice system of fifteenth-century Paris occasionally sentenced thieves to have their hands cut off. Here, we can compare two societies, both of which are characterized by hand-losing behaviors. Is it even remotely helpful to explain both patterns of behavior by gesturing to innate violence?

Contemplating the courts of law of late medieval Paris, where, exactly, are we supposed to locate this innate violence? In the king? The magistrate? The executioner? As this thought experiment suggests, violent acts are part of a total social system, not spur-of-the-moment responses to simple emotional cues arising from something innate. Whether violence is innate or not, moreover, is irrelevant to the question of how violence was used or leveraged in any given historical moment.

Given this problem, how can we bring history and the neurosciences together without invoking sterile ideas about innate behaviors, human universals, or hard-wired cognitive modules? The answer to this lies in a different architecture of explanation, that is to say one framed in deep human time and based on the principle of coevolution set out earlier in this paper. In this case, rather than imagining the brain and nervous system as a source of behavioral commands (e.g. “be violent”), we can instead imagine the human nervous system as a niche in which institutional or behavioral patterns evolve. At first blush, this seems like a peculiar thing to say, since behavioral patterns are not organisms and the nervous system clearly is not a typical niche, like a forest or a swamp or a coral reef. But it is not difficult to come up with examples. Psychologists, for example, have described a cognitive phenomenon known as social contagion, where the presence of a crowd causes emotional experiences to be amplified. In later medieval

Europe, the process of urbanization and the rise of the preaching orders (the Franciscans and Dominicans) created a situation in which preachers were delivering sermons to crowds that began to number in the thousands. Contemporary observers commented on the powerful emotional responses elicited by preachers at these events, and the pattern of preaching gradually evolved to exploit the power of social contagion.¹³ Another situation is suggested by the pattern of monastic discipline in high medieval Europe. Certainly there were ample theological justifications for the ascetic regimes being promoted in monastic rules. But we can pair these proximate explanations with explanations that proceed from a psychological or neurological perspective. Ample studies since the 1950s have shown that social isolation induces a condition of stress, which in turn promotes dopaminergic behavior. For example, mice that have been artificially stressed will self-medicate with cocaine, a dopamine agonist, at a higher rate than control mice.¹⁴ In the case of monastic discipline, it is not difficult to imagine that the stress of isolation induced dopaminergic behaviors such as prayer.

In neither of these examples are we dealing with a command-and-control model, where hard-wired modules supposedly make people do things. Instead, we are dealing with psychological or neurological patterns that, if activated or invoked, increase the probability of certain responses, and thus tease the development of institutions or patterns such as preaching and discipline in given directions. It is important to note that neither situation produces a subsequent pattern of historical development that is unchanging, predictable, or unilinear. In both cases, we see a rise-and-fall pattern that is characteristic of historically contingent developments.

In older models of evolution, the niche was sovereign, and organisms evolved passively in response to changes in the niche. In recent years, growing attention has been paid to the principle of niche construction, or the idea that organisms, to a greater or lesser degree, are

continuously engaged in constructing their own niches, and then adapt to the niche that they have shaped.¹⁵ Humans have been actively constructing their niche from at least the Middle Paleolithic period, when we have evidence suggesting the deliberate burn-off of surface vegetation. A key feature of niche-construction theory is that it does not matter whether the action is intentional or unintentional. We are now faced with the urgent task of adapting culturally to a new niche, that is to say the world of the Anthropocene. The warming climate of the Anthropocene is wholly unintended by-product of the turn to fossil fuels in the nineteenth and twentieth centuries. Translating this idea into neurology, the architecture of the nervous system may be universal or unchanging at some level. Neurochemicals such as serotonin and dopamine are made following strict chemical recipes; electrical signals can cross synapses in only one way. But although the architecture is universal, the neurons and synapses that actually transmit the signals are plastic, and subject to developmental, epigenetic, and cultural circumstances. In a sense, it is possible to imagine that the neurological niche itself is constantly changing. We can speak of aggregate brain states, defined by cultural and developmental circumstances, that are characteristic of large groups or populations, and as the niche itself evolves, it can tease the development of new behavioral patterns.

Over the deep time of human history, goods worked their way into the brain, the human body maps, and the extended phenotype. The relationship was and is a coevolutionary one: we have continuously adapted to the presence of goods in our world, but at the same time the goods themselves, like plants or animals, have evolved in response to the use to which we put them. In the same way that pets have gotten progressively more cute, certain goods have gotten cute, finding ways to work their way into our affections and emotional attachments. The presence of goods in our lives can bring pleasure, whereas the absence or loss of goods can reduce pleasure

or even generate stress, such as the misery that confronts a hoarder whose junk is taken away. None of the emotional states associated with goods, however, is a universal condition. Shopping, which has been described as a dopaminergic activity, is clearly a contingent historical construct. If some people nowadays are addicted to shopping, it is because shopping itself has subtly altered the aggregate human brain in some way, making some people more prone to this new addiction.

Modern global capitalism, to the extent that it consists of consumer items and associated behavioral patterns, has evolved in a complex and changing neurological niche. In light of a neurohistorical approach, capitalism, in addition to whatever else it has been called, can be seen as an enormous psychotropic system for stimulating the reward centers of the human brain.¹⁶ Over our long history, of course, we have found plenty of ways to stimulate the reward system; here, what may be distinctive is the way in which rewards have been commodified, individualized, and removed from the ritual frameworks that once contained or channeled them. Simultaneously, capitalism is an enormous system for the delivery of stress, in the form of competitive consumption—a new twist on an age-old pattern whereby power is correlated with the capacity to inflict stress on lower-ranking individuals. The patterns of stress and pleasure intrinsic to capitalism (and to every psychotropic system) may well feed off one another in a dialectical pattern, a pattern that may help explain why consumption appears to have accelerated in recent decades. We do not have to see this emergent pattern as one that will lead to an endless inflationary spiral. Energy constraints and environment damage will eventually put the brakes on the system. In addition, systems like this that have neuropsychological implications seem to work only for a time. In the same way that the pleasure centers of individual brains gradually grow numb to stimuli, it seems as if the psychotropic effect of certain institutions or structures

gradually lose traction at the level of larger population groups, and are replaced by others. This, at least, is what we ought to hope for, because the alternative may well be the fate of the compulsive hoarder who is drowned when the tottering piles of junk cave in.

Notes

¹ Numerous works have been published on the Franklin expedition. Here, I relied on Owen Beattie and John Geiger, *Frozen in Time: The Fate of the Franklin Expedition*, rev. ed. (Vancouver: Greystone Books, 1998), and David C. Woodman, *Unravelling the Franklin Mystery: Inuit Testimony* (Montreal: McGill-Queen's University Press, 1991).

² See <http://www.rmg.co.uk/>

³ Richard Dawkins, *The Extended Phenotype: The Long Reach of the Gene*, rev. ed. (Oxford: Oxford University Press, 1999).

⁴ Nina Bernstein, "So Much Clutter, So Little Room: Looking Inside the Hoarder's Lair," *New York Times*, 31 December 2003, <http://www.nytimes.com/2003/12/31/nyregion/so-much-clutter-so-little-room-looking-inside-the-hoarder-s-lair.html>.

⁵ Michael Pollan, *The Botany of Desire: A Plant's Eye View of the World* (New York: Random House, 2001).

⁶ Richard Dawkins and J. R. Krebs, "Arms Races Between and Within Species," *Proceedings of the Royal Society of London, Series B, Biological Sciences* 205 (1979): 489–511.

⁷ Leigh Van Valen, "A New Evolutionary Law," *Evolutionary Theory* 1 (1973): 1–30; see also Matt Ridley, *The Red Queen: Sex and the Evolution of Human Nature* (New York: Macmillan, 1995).

⁸ Richard W. Wrangham, *Catching Fire: How Cooking Made Us Human* (New York: Basic Books, 2009).

⁹ Sandra Blakeslee and Matthew Blakeslee, *The Body Has a Mind of Its Own* (New York: Random House, 2007).

¹⁰ For further theoretical reflections on this, see Stephen Shennan, *Genes, Memes and Human History: Darwinian Archaeology and Cultural Evolution* (London: Thames and Hudson, 2002).

¹¹ Steven W. Anderson, Hanna Damasio and Antonio R. Damasio, “A Neural Basis for Collecting Behaviour in Humans,” *Brain* 128 (2005): 201-12, though see Alberto Pertusa, Randy O. Frost, Miguel A. Fullana, Jack Samuels, Gail Steketee, David Tolin, Sanjaya Saxena et al., “Refining the Diagnostic Boundaries of Compulsive Hoarding: A Critical Review,” *Clinical Psychology Review* 30 (2010): 371-86.

¹² William Ian Miller, *Bloodtaking and Peacemaking: Feud, Law, and Society in Saga Iceland* (Chicago: University of Chicago Press, 1990); idem, *Humiliation: and Other Essays on Honor, Social Discomfort, and Violence* (Ithaca: Cornell University Press, 1993).

¹³ I develop this idea further in “An Essay on Neurohistory,” in *Emerging Disciplines: Shaping New Fields of Scholarly Inquiry in and beyond the Humanities*, ed. Melissa Bailar, 201-228 (Houston: Rice University Press, 2010), available at <http://cnx.org/content/m34243/latest/?collection=coll11201/latest>

¹⁴ J. J. Yap and K. A. Miczek, “Social Defeat Stress, Sensitization, and Intravenous Cocaine Self-Administration in Mice,” *Psychopharmacology* 192 (2007): 261-73. For an overview, see Carl Zimmer, “The Brain: The Switches That Can Turn Mental Illness On and Off,” *Discover* 31 (2010): 26-27.

¹⁵ F. John Odling-Smee, Kevin Laland, and Marcus W. Feldman, *Niche Construction: The Neglected Process in Evolution* (Princeton: Princeton University Press, 2003).

¹⁶ For a fuller discussion of the idea the societies or institutions have characteristic psychotropic profiles, see my *On Deep History and the Brain* (Berkeley: University of California Press, 2008).