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The Human Revolution

Editorial Introduction to 'Honest Fakes and Language Origins' by Chris Knight

Menstrual Sex-Strike Theory

It is now more than twenty years since Knight (1987) first presented his paradigm-shifting theory of how and why the 'human revolution' occurred — and had to occur — in modern humans who, as climates dried under ice age conditions and African rainforests shrank, found themselves surrounded by vast prairies and savannahs, with rich herds of game animals roaming across them. The temptation for male hunters, far from any home base, to eat the best portions of meat at the kill site — as do other social carnivores — called for strong measures from human females, who were paying the heavy metabolic and physical costs of bearing large-brained but helpless children. Even in the modern west, with well stocked supermarkets, a pregnant or lactating woman can lose ten percent of the dry weight of her brain, because developing babies demand dietary lipids for brain growth (Horrobin, 1998). Hence the idea of the *menstrual sex strike*, designed to force males to deliver their kills entirely into the hands of women for cooking and distribution — a practice common in foraging communities to this day.

Knight's theory thus finally deposed macho theories of 'Man the Hunter', crediting the creation of modern culture to the 'weaker sex', and implying that worldwide 'rule of women' myths had historical substance. The same myths tell of a male counter-revolution, whereby men seized control of female powers — such as sacred flutes and synchronized menstruation — so accounting for the universal patriarchy that we find in the world today, and secret rituals in which men

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menstruate in the 'proper' way — which is synchronously — whilst women are prevented from doing so by menstrual seclusion and innumerable taboos against blood. Knight was probably the first to point out that two crucial blood taboos are metaphorical equivalents: the hunters' own-kill rule and the incest taboo both mean: *Never eat your own meat*.

The external examiner who was first appointed to assess Knight's doctoral dissertation declared that 'This thesis should be burnt,' and its heretical author should be banned from publishing further scientific work. A second examiner was hastily sought by a more perceptive supervisor (the one who informed me of this story), but when Knight (1991) published his theory in book form it provoked outrage from some anthropologists and a deafening storm of silence from the rest. It was not that they simply hadn't read Knight's book — he was blocked from academic employment for many years. So much chilling hostility, of course, is the best possible unsolicited testimonial for the power of the theory.

The sex-strike theory holds that 'symbolic culture' originated in ritual displays by synchronously menstruating women, who thus signalled to men 'no sex until you bring the meat home'. The theory, though contentious, makes coherent sense of previously intractable and disparate ethnographic data — such as those listed in the editorial to this volume, and the curious fact that human males, unlike male chimpanzees, do indeed 'bring the meat home'. Since an estimated 90% of all language communities have not yet been studied by anthropologists, the theory is also testable: it makes specific predictions of what can and cannot be found in human cultures, and these could potentially be falsified as ethnographic investigations progress. A logical corollary of the theory, pointed out by Camilla Power and researched by Ian Watts (based on the fact that women who spend most of their fertile years being pregnant or breast-feeding seldom menstruate), predicts that evidence for the 'big bang' origin of human culture (as theorized by Knight) will be characterized by a significant increase in the use of red pigments (sham menstrual blood). A tenfold increase in the use of red ochre and haematite has since been confirmed in South Africa around 110 thousand years ago (Watts, 1998; 1999; in press a, b; Knight, in press; Knight *et al*., 1995). This is consistent with dates for cultural origins inferred from genetic and linguistic analyses (Harpending *et al*., 1993; Nei & Roychoudhury, 1993; Cavalli-Sforza *et al.*, 1988).

Readers should be aware that Knight uses the term 'symbolic' (which I prefer to avoid because it is so widely abused) in a strictly

defined sense, making it synonymous with 'collective deceptions' which, for Knight, means 'honest fakes' (whereas I restrict 'collective deceptions' to a smaller subset of *dishonest* fakes: Whitehead, this volume). For example, metaphors are literally false statements, but they are not intended to deceive. He derives our symbolic abilities from pretend play. So, if two children are pretending that a broom is a horse, the broom-as-horse is an 'honest fake'.

Knight and Chomsky

The central importance of Knight's present paper is its thorough demolition of Chomsky. Noam Chomsky's impact on linguistics and his foundational influence on cognitive science can hardly be underestimated. He was cited as a source more often than any other living scholar between 1980 and 1992, and was the eighth most-cited scholar in any time period (*Arts and Humanities Citation Index*, 1992: in Wikipedia). This influence persists, even including the idea that language could have had a non-social origin (*cf.* Adolphs, 1999). Knight's equally devastating critique of evolutionary psychologists such as Pinker, Tooby, and DeVore is also timely because their genocentric views have been so widely and uncritically accepted.

Chomsky (2005, p. 11) describes language as a 'system of discrete infinity'. That is, phonemes can be combined to make words, words to make sentences, sentences to make narratives, and so on — in principle to infinity. The digital and combinatorial character of language distinguishes it from all other vocalizations and gestures (animal or human), which are thoroughly analogical – they use sliding scales of size, energy, rhythm, volume, pitch, timbre, etc. which, though limited in range, are infinitely variable within that range (Burling, 1993). Their meanings depend on their fluctuating qualities, and they cannot be combined and recombined in a syntactically regulated Lego-block fashion. Comparable digital and combinatorial properties appear only at revolutionary junctures during cosmic evolution (Whitehead, 1993), leading to radically new ways of organizing things — emergent orders created by such innovations as the genetic code; the periodic table of the elements; the discrete set of subatomic particles; and the mathematically ordered spectrum of quantum particles presumed to have been spewed out by the original 'big bang'. This alone is enough to tell us that a revolutionary shift occurred in the history of our species, and even suggests that language (or rather what Knight calls the 'digital world' that makes language possible, along with all our other digital codes such as alphabetic writing and mathematical

denotations) should be seen from a cosmic rather than a merely biological perspective.

There have, however, been other revolutionary shifts during biological evolution. Knight briefly mentions the *theory of major transitions* proposed by Maynard Smith and Szathmáry (1995). These authors observed that 'major transitions' in evolution are few and far between because they depend on *cooperation*, which is only advantageous in the long run. The short-term selfish interests of individuals tend to resist the emergence of 'higher' levels of organization. Major transitions therefore tend to occur 'abruptly', in terms of evolutionary time-scales, like shifting a log-jam (Knight, 1998). Examples of such revolutionary changes include the emergence of chimerical modern cells (incorporating mitochondria and chloroplasts, originating as commensal purple bacteria and blue-green algae); sexual reproduction; multi-cellular animals and plants (the so-called 'Cambrian explosion': Levinton, 1992); animal societies; and of course human culture and language.

The Lego-block character of language led evolutionary psychologists such as Pinker (1999, p. 287) to infer that humans, unlike our primate relatives, must have 'digital minds in an analog world'. Genocentric thinking – by which I do not mean legitimate Darwinian thinking as used by Knight – then requires our 'digital minds' to evolve from analogue minds by discrete mutational steps (Pinker) or a single miraculous leap (Chomsky). Knight elegantly demonstrates that both these alternatives are logically untenable.

The Cultural Explosion

It is worth reviewing the long tradition in anthropological thought, alongside the views of speech-act theorists, that converge overwhelmingly on a 'big bang' origin for language, religion, and culture, reflecting a radical subversion of an ancient primate social order. Such a revolutionary change — affecting a social group and not a single individual — cannot be explained genetically, any more than the agricultural or industrial revolutions.

The case against a gradualistic Darwinian origin of language is backed by a considerable body of literature, which has expanded at an accelerating rate since the beginning of the last century. Curiously, the theoretical and empirical work represented by this broad current within Western thought has been largely ignored by biologists, evolutionary psychologists, and others not sufficiently familiar with the cultural sciences.

In the late nineteenth century, Georg Simmel (1968) argued that human societies and institutions are *sui generis* emergent systems — dynamic wholes with their own internal logic and top-down causality. Although the behaviour of a stock market, for example, is determined by the collective behaviour of individual investors, no individual can predict what this will be, and it is the collective outcome that controls the optimism or anxiety of individuals, prompting them to buy or sell even when this may have catastrophic consequences for their own self-centred interests. As in the case of a run on the bank, individual fears of bankruptcy can become a self-fulfilling prophesy.

Emil Durkheim, whose influence on social anthropology has been deep and enduring, developed such ideas further. He counselled us to 'treat social facts as things', irreducible to lower orders of explanation such as psychology or biology (Durkheim, 1895). One of those social facts, of course, is language. What distinguishes language from the vocalizations of other animals, Durkheim (1912) argued, is displaced reference — that is, language refers to things known, imagined, or imaginary — not immediately present in the here-and-now, where they can be perceived and understood by all.

How can we encrypt an intangible, Durkheim asked, unless it is first made public through some kind of collective pantomime? In the absence of language, it is only when a group of people engages in a collective performance with self-evident meaning — when the participants know that the same meaning is present in the minds of all — that it becomes possible to refer to that meaning in a conventionalized cryptic manner. Hence, there can be no language without the prior emergence of ritual — ritual which is 'sacred' because of its consensual character and so compelling moral force. This is Durkheim's solution to what has since been called 'the problem of the first utterance' (Whiten, 1993), and it can also be used to explain the origin of everything else that distinguishes modern human culture – formal systems of kinship and reciprocity (Whitehead, 2000; 2002; 2006a,b,c; 2007); sexual modesty and marriage; morality and taboo — and the very idea of a 'social contract' which comprises all these things and defines what it is to be a *person* (Knight, 1991).

We might add to Durkheim's point that it is *syntax* that provides language with its power of displaced reference. And without syntax, there cannot really be *words*. Vervet monkeys, for example, have different alarm calls which alert others to the threatening presence of specific predators — snakes, leopards, or eagles (Seyfarth *et al*., 1980; Cheney & Seyfarth, 1990). But there is nothing semantic about these calls. They cannot be used conversationally or in any other

context than the here-and-now threat. The snake call, for example, cannot be used to refer to a snake that was seen yesterday, or a snake that might be hiding in the long grass. Nor is it possible to define the precise meaning of such signals: the leopard call *could* mean 'I see a leopard!', or 'Beware — predator approaching through the bushes!', or 'Danger! Climb the nearest tree!' All that counts here is that the alarm call triggers group behaviour appropriate to the immediate threat.

Language cannot be evolved or invented one specific word at a time, because words have meaning only in contrast to and in the context of other words — in the categorical and syntactic relationships between words — and because the whole idea of a cryptic system has to be invented consensually and at some historic moment.

Such a conclusion was arrived at by Claude Lévi-Strauss (1950) from a consideration of so-called 'empty referents' — words such as *mana*, *wakan*, *manitou*, and *orenda* — which are found in many languages throughout the world, and variously translated as 'medicine' or 'sacred power'. However, as Lévi-Strauss noted, the same words are also used to refer to anything new or strange – anything for which no other word can be found. In this sense they are not unlike empty referents in modern English, such as 'thingummy-jig' or 'what's-it', or, even better, the American 'oomph!' (implying that a woman has 'got something' beyond the power of words to express). Lévi-Strauss was greatly intrigued by the curious fact that a word that referred to the most powerful creative force in the universe — as conceived in indigenous cosmologies — could equally be used to refer to anything currently unnamed. In effect, empty referents refer to everything in the universe that is outside language. For him, this pointed to only one possible conclusion — a 'big bang' origin for language and cosmology. As he put it: 'the entire universe all at once became *significant*' (p. 60). There is therefore a universe of significance, and a 'surplus of signification' beyond our referential system of meaning, which 'divine understanding alone can soak up.' (p.62). Empty referents thus stood for the prime mover in the creation of a humanly-conceived cosmos and, at the same time, were the direct progeny of the first linguistic utterance. As later words were progressively differentiated from this 'floating signifier' (p. 63), the mother-of-all-words could continue to denote the residue of everything not yet named. But for his curious and irrational disgust for ritual,[1] Lévi-Strauss would no doubt have been led, like his acknowledged mentor Durkheim, to infer a big

[1] Lévi-Strauss, became convinced that recurring mythic structures were the result of brain-wiring, not ritual. The 'binary oppositions' of myth, in his view, revealed the superiority of human over animal thought, because they divide the continuity of 'lived

bang origin for language and culture in sacred (i.e. morally and ideologically compelling) ritual.

Interestingly, speech-act theorists have developed independent arguments which point to the same conclusion (e.g. Austin, 1978; Grice, 1969; Searle, 1969, 1983). What Austin calls the 'illocutionary force' of language depends on a social contract or moral framework, a system of obligatory trust and truthfulness, backed up by some form of supra-personal authority and power. The point here is that words are cheap and it is too easy to lie – like paper bank notes, words are intrinsically worthless, and could not be accepted at face value unless backed up by a source of genuine worth (such as a gold standard) or authority (such as legal sanctions against counterfeiting) (Knight, 1998). In societies without police, gaols, and judicial systems, this can only be accomplished through ritual and ritually-constructed supernatural beliefs (*ibid*).

The study of human culture is not without its perils. Social anthropology, perhaps more than any other discipline in science, has suffered from the heart-ache of 'the beautiful theory demolished by the ugly fact'. Throughout the last century social anthropologists have become increasingly cautious — even phobic — about 'grand theories' of any description.[2] At the same time, however, the accumulation of ethnographic evidence has increasingly convinced them of the *sui generis* emergent nature of human social orders — irreducible to simplistic Darwinism — and the 'anti-biological' character of human culture. This in itself implies a 'big bang' origin, even if many cultural scientists lack the confidence to say so.

Possibly the neatest argument for such a big bang origin was proposed by the American anthropologist Marshal Sahlins (1960). He

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experience' into 'large distinctive units separated by differential gaps' (1981, p. 674). This is Lévi-Strauss's equivalent of 'digital minds in an analogue world'. Ritual, however was another matter: 'On the whole,' he wrote, 'the opposition between rite and myth is the same as that between living and thinking, and ritual represents a bastardization of thought, brought about by the constraints of life. It reduces, or rather vainly tries to reduce, the demands of thought to an extreme limit, which can never be reached, since it would involve the actual abolition of thought.' (1981, pp. 674–5).

[2] Particularly following the bathetic 'Finale' to Lévi-Strauss's grand analysis of over eight hundred New World myths in *Mythologiques* (1969-81), which led to the heroic crash of structuralism. The 'Overture' to *Mythologiques* promised to turn anthropology into an 'exact science'. The great discovery was that all the myths were variants of 'one myth only'. But the sole inference he could draw – based on his binary brain wiring idea – was, quoting *Hamlet*, 'To be or not to be' – that is the answer. All this astonishing material was simply due to the pathetic human need to find meaning in a sad and painful world. Knight, however, pointed out that all the binary oppositions discovered by Lévi-Strauss can be better explained as oppositions between the magical world of ritual and the mundane world of everyday life. The 'one myth only' idea remains a significant discovery.

pointed out that, in apes, sex controls society, whereas in humans, society controls sex. The universality of sexual modesty, exogamous marriage rules, and the incest taboo, point to one inescapable conclusion. At some revolutionary historic moment, an ancient primate social order must have been turned on its head.

A Red Carpet

Knight has previously presented his own anthropological, biological, and archaeological arguments for a big bang origin of human culture and language (e.g. 1991; 1998; 1999; 2000; 2008a,b; Knight *et al*., 1995). In particular he has argued that the wide range of apparently 'anti-biological' phenomena which characterise human culture – such as the worldwide provenance of rule-of-women myths and of secret rituals in which men claim to menstruate — can only be explained by a revolutionary inversion of biological signals and disruption of a typical primate social order. His present paper makes no mention of all this previous work. Here he presents a philosophical argument to show that the very idea of language emerging by genetic point mutations, and the concept of a 'digital mind', are logically incoherent. Hopefully this will drive the final nail into the coffin of pseudo-biological macro- or micro-mutational theories of language origins, as espoused by evolutionary psychologists such as Pinker (1994), palaeoanthropologists like Mithen (1996a,b), and linguisticians such as Chomsky (2005).

This introduction is intended as a 'red carpet' welcoming Professor Knight to the pages of *JCS*. Of course, according to Knight's theory — and a noteworthy Dogon myth quoted by Knight (1991, pp. 424–5) — red carpets are red, as are the robes of kings and cardinals, because of the numinous power originally ascribed to menstrual blood.

References

Adolphs, R. (1999), `Social cognition and the human brain', *Trends in Cognitive Sciences*, **3** (12), pp. 469–79.

Austin, J.L. (1978), *How to do Things with Words* (Oxford: Oxford University Press).

Burling, R. (1993) 'Primate calls, human language, and nonverbal communication', *Current Anthropology*; **34** (1): pp. 25–53.

Cheney, D.L. & Seyfarth, R.M. (1990), *How Monkeys See the World* (Chicago: University of Chicago Press).

Chomsky, N. (2005), 'Three factors in language design', *Linguistic Inquiry*, **36** (1), pp. 1–22.

Durkheim, E. (1895), *The Rules of the Sociological Method* (Glencoe IL: Free Press, 1962).

Durkheim, E. (1912), *The Elementary Forms of the Religious Life* (London: Allen & Unwin, 1964).

Grice, H.P. (1969), 'Utterer's meanings and intentions', *Philosophical Review*, **78**, pp. 147–77.
Harpending, H.C., Sherry, S.T., Rogers, A.R. & Stoneking, M. (1993), 'The genetic structure of ancient human populations', *Current Anthropology*, **34**, pp. 483–96.
Horrobin, D.F. (1998), 'Schizophrenia: the illness that made us human', *Medical Hypotheses*, **50**, pp. 269-88.
Knight, C. (1987), *Menstruation and the Origins of Culture*, PhD thesis: University College London.
Knight, C. (1991), *Blood Relations: Menstruation and the Origins of Culture* (New Haven and London: Yale University Press).
Knight, C. (1998), 'Ritual/speech coevolution: a solution to the problem of deception', in *Approaches to the Evolution of Language: Social and Cognitive Bases*, eds. J.R. Hurford, M. Studdert-Kennedy & C. Knight (Cambridge: Cambridge University Press).
Knight, C. (1999), 'Sex and language as pretend play', in *The Evolution of Culture*, eds. R.I.M. Dunbar, C. Knight & C. Power (Edinburgh: Edinburgh University Press), pp. 228–47.
Knight, C. (2000), 'Play as precursor of phonology and syntax', in *The Evolutionary Emergence of Language: Social Function and the Origins of Linguistic Form*, eds. C. Knight, M. Studdert-Kennedy & J.H. Hurford (Cambridge: Cambridge University Press), pp. 99–119.
Knight, C. (2008a), 'Language co-evolved with the rule of law', *Mind and Society: Cognitive Studies in Economics and Social Sciences*, **7** (1), pp. 109-28.
Knight, C. (2008b), 'Early human kinship was matrilineal', in *Early Human Kinship*, eds. N. Allen, H. Callan, R.I.M. Dunbar and W. James (Oxford: Blackwell), pp. 61–82.
Knight, C. (in press), 'Language, ochre and the rule of law', in *The Cradle of Language*, ed. R. Botha and C. Knight (Oxford: Oxford University Press).
Knight, C., Power, C. & Watts, I. (1995), 'The human symbolic revolution: a Darwinian account', *Cambridge Archaeological Journal*, **5** (1), pp. 77–116.
Levinton, J.S. (1992), 'The big bang of animal evolution', *Scientific American*, **267** (5), pp. 52–9.
Lévi-Strauss, C. (1950), *Introduction to the Work of Marcel Mauss* (London: Routledge & Kegan Paul, 1987).
Lévi-Strauss, C. (1969), *The Raw and the Cooked*, Vol. 1 of *Introduction to a Science of Mythology* (New York: Harper & Row).
Lévi-Strauss, C. (1973), *From Honey to Ashes*, Vol. 2 of *Introduction to a Science of Mythology* (New York: Harper & Row).
Lévi-Strauss, C. (1978), *The Origin of Table Manners*, Vol. 3 of *Introduction to a Science of Mythology* (New York: Harper & Row).
Lévi-Strauss, C. (1981), *The Naked Man*, Vol. 4 of *Introduction to a Science of Mythology* (New York: Harper & Row).
Maynard Smith, J. & Szathmáry, E. (1995), *The Major Transitions in Evolution* (Oxford: W. H. Freeman).1Maynard Smith, J. and E. Szathmáry 1995. The Major Transitions in Evolution. Oxford: W. H. Freeman.
Mithen, S.J. (1996a), *The Prehistory of the Mind: a Search for the Origins of Art, Science and Religion* (London: Thames & Hudson).
Mithen, S.J. (1996b), 'Domain-specific intelligence and the Neanderthal mind', in *Modelling the Early Human Mind*, eds. P. Mellars & K. Gibson (Cambridge: McDonald Institute for Archaeological Research), pp. 217–29.
Nei, M. & Roychoudhury, A.K. (1993), 'Evolutionary relationships of human populations on a global scale', *Mol. Biol. Evol.*, **10** (5), pp. 927–43.
Pinker, S. (1994), *The Language Instinct* (London: Penguin).

Pinker, S. (1999), *Words and Rules: The Ingredients of Language* (London: Weidenfeld and Nicolson).
Sahlins, M.D. (1960), 'The origin of society', *Scientific American*, **203** (3), pp. 76–87.
Searle, J.R. (1969), *Speech Acts: An Essay in the Philosophy of Language* (Cambridge: Cambridge University Press).
Searle, J.R. (1983), *Intentionality* (Cambridge: Cambridge University Press).
Seyfarth, R.M., Cheney, D.L. & Marler, P. (1980), 'Monkey responses to three different alarm calls: evidence for predator classification and semantic communication', *Science*, **210**, pp. 801–3.
Simmel, G. (1968), *The Conflict in Modern Culture and Other Essays*, ed. F.P. Etzfern (New York).
Watts, I. (1998), *The Origin of Symbolic Culture: the Middle Stone Age of Southern Africa and Khoisan Ethnography*, PhD thesis: University College London.
Watts, I. (1999), 'The origin of symbolic culture' in *The Evolution of Culture: An Interdisciplinary View*, eds. R. Dunbar, C. Knight, C. Power. (Edinburgh: Edinburgh University Press), pp. 113–46.
Watts, I. (in press a), 'Red ochre, body painting and language: interpreting the Blombos ochre', in *The Cradle of Language*, eds. R. Botha and C. Knight (Oxford: Oxford University Press).
Watts, I. (in press b), 'The pigments from Pinnacle Point Cave 13B, Western Cape, South Africa', *Journal of Human Evolution*, Special Issue on the Middle Stone Age at Pinnacle Point Site 13B, a Coastal Cave near Mossel Bay (Western Cape Province, South Africa).
Whitehead, C. (1993), 'A radical look at Darwinism'. Invited seminar presentation, *Radical Anthropology Group*, University of East London, September.
Whitehead, C. (2000), 'Anthropological psychologising and what we need to do about it', *20th Annual Conference of the Society for the Anthropology of Consciousness*, Tucson, Arizona, USA. 5–9 April.
Whitehead, C. (2002), 'Political origins of the "hard problem"', *Toward a Science of Consciousness: Tucson 2002*, Centre for Consciousness Studies, University of Arizona, Tucson, USA. 6–13 April
Whitehead, C. (2006a), 'Collective deceptions in western science', *Toward a Science of Consciousness: Tucson 2006*, Centre for Consciousness Studies, University of Arizona, Tucson, USA. 4–8 April
Whitehead, C. (2006b), 'Social display and the evolution of human self-consciousness', in *Consciousness, Theatre. Literature and the Arts*, ed. D. Meyer-Dinkgräfe (Cambridge: Cambridge Scholars Press), pp.208–21.
Whitehead, C. (2006c), 'Co-operation and cultural dislocation of self-boundaries', *Exploring the Boundaries of Experience and Self: Tenth Annual Conference*, The Consciousness and Experiential Section of the British Psychological Society, St. Anne's College, University of Oxford, UK. 15–17 September.
Whitehead, C. (2007), 'Why scientists cannot agree about human behavioural universals, what animal cartoons can tell us, and some suggestions as to when and why fundamental human differences evolved', *VI. Göttinger Freilandtage: Primate Behavior and Human Universals*, Department of Behavioral Ecology & Sociobiology, Deutsches Primatenzentrum, Göttingen, Germany, 11–14 December.
Whiten, A. (1993), Comment following Burling, R. 'Primate calls, human language, and nonverbal communication', *Current Anthropology*, **34** (1), pp. 25–53.