5   Ritual/speech coevolution: a solution to the problem of deception

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1   Introduction: the Darwinian paradigm

Darwinism is setting a new research agenda across the related fields of palaeoanthropology, evolutionary psychology and theoretical linguistics (Dunbar 1993; Hurford 1989, 1992; Pinker & Bloom 1990; Steele & Shennan 1996). It is now widely accepted that no other theoretical framework has equivalent potential to solve the major outstanding problems in human origins research. Rival paradigms from the human and social sciences — Freudian, Piagetian, Chomskyan, Lévi-Straussian — cannot explain evolved human mentality because they already assume this as a basic premise. Tried and tested as a methodology applicable to the social behaviour of all living organisms (Dawkins 1976; Hamilton 1964; Trivers 1985), Darwinism makes no such assumptions, thereby avoiding circularity.

Modern Darwinism seeks to harmonize research into human life with the rest of scientific knowledge. This project depends, however, on accounting for the emergence of symbolic culture, including speech, a system of communication unparalleled elsewhere in biology. While Darwinians confidently expect an explanation (Pinker & Bloom 1990), it has to be admitted that, to date, no compelling account has been advanced.

In this chapter, I treat speech as a revolutionary development made possible by the establishment of novel levels of social co-operation. In this, I follow Maynard Smith and Szathmáry (1995), who provide a Darwinian game-theoretic perspective on the origins of human social co-operation, including speech. They view the momentous process as one of a limited number of 'major transitions' during life's evolution on Earth. Each such transition is revolutionary in that it involves a relatively sudden and dramatic restructuring, like the breaking of a log-jam. The preceding barrier to the new level of complexity, discernible with

hindsight, arises because, despite any emergent potential for self organization on the higher level (that of the multicellular organism, for example, or the speech-based co-operative community), the necessary co-operative strategies repeatedly lose out to more stable strategies of 'selfish' gene-replication on the lower level.

Previous, gradualist, models of language origins ignored such problems, taking speech to be in some absolute sense 'better' than a primate gesture-call system. Speech, it is frequently said, allows access to a communal pool of knowledge, saving duplication of effort in trial-and-error direct discovery (Pinker & Bloom 1990: 712). But a primate-style 'Machiavellian' social dynamic (Byrne & Whiten 1988) would weigh heavily against reliance on uncorroborated second-hand information. Vulnerability to deceit is costly. Every adaptation has costs as well as benefits; a novel adaptation spreads only if the benefits outweigh the costs. Previous thinking on speech evolution has simply ignored the costs.

2   Darwinism and symbolic culture

Speech differs from a primate gesture-call system in presupposing a wholly new *representational* level. Through exposure to art, music, dance and other 'external memory stores' (Donald 1991), humans from infancy learn to internalize a set of representations essential to the self organization of a cultural community. The representations central on this level are morally authoritative intangibles or 'collective representations' (Durkheim 1965). 'God', 'Unicorn' and 'Totem' are among the possibilities. 'Symbolic culture', to quote archaeologist Philip Chase (1994), 'requires the invention of a whole new kind of things, things that have no existence in the "real" world but exist entirely in the symbolic realm. Examples are concepts such as good and evil, mythical inventions such as gods and underworlds, and social constructs such as promises and football games.' It would be surprising if this new representational level did not bring with it a new level of complexity in communication. Linguistic reference is not a direct mapping from linguistic terms either to perceptible things or to intentional states; the mapping is from linguistic terms to communal constructs — representations established in the *universe of discourse*. This universe is structured by people's ritual and other symbolic experience. While hunting eland in the Kalahari — to take just one example — Zu/'hoäsi will refer to their prey using the

'respect' term *tcheni* — literally 'dance'. 'People', 'fatness',
'menstruation', 'gender-ambiguity' and 'fertility' are associated meanings
(Lewis Williams 1981; Power & Watts 1997). A complex representation
of this kind is not perceptually constrained. The god-like 'Eland' of these
hunter-gatherers is a communal fiction, connected only in the loosest way
to anything existing in the real world.

Not being perceptually verifiable, representations of this kind — the kind
to which words are attached — are bound up with anomalous levels of
trust and social co-operation; these require 'special' explanation (cf.
Maynard Smith & Szäthmáry 1995). Theoretical linguists have
traditionally avoided the problems by simply *assuming* the existence of a
homogenous speech-community, committed to the co-operative, honest
sharing of information. The anthropologist Pierre Bourdieu (1991) terms
this the 'assumption of communism', noting its centrality to formal
linguistics since the discipline's inception. While speech indeed
presupposes social co-operation (Grice 1969, 1975), such models distract
attention from precisely the problems which, to a Darwinian, most cry out
to be addressed. Why, in the human case, can such anomalous levels of
co-operation be assumed?

The value of Darwinian theory is that it forces us to consider the barriers
to the establishment of co-operation on the necessary scale. In a
Darwinian world, individuals who deceive others to make selfish gains, or
who 'free-load' — enjoying the benefits of society while evading the
costs — are likely to have higher fitness than co-operators (Axelrod &
Hamilton 1981; Trivers 1971). Attempts to solve this problem by
modelling ever-higher benefits from co-operation are self-defeating: the
greater the benefits, the greater the gains made by any free-loader who
can still reap these while avoiding the costs. Neither can it be objected
that lying and cheating, in undermining co-operation, would threaten the
extinction of whole groups. Evolution is blind and individualistic. If
individual genetic fitness is best pursued through such strategies,
selfishness is to be expected regardless of negative consequences at the
population level.

3   How animal signals evolve

Politics and power relations are inevitably involved in communication.
Krebs & Dawkins (1984) broke new ground by abandoning assumptions

about truthfulness and defining animal communication as the means by which one individual, the actor, exploits the muscle power of another, the reactor. Where animals have conflicting interests, they will seek to exploit and deceive rather than share good information, prompting receivers to develop corresponding 'sales resistance'. As conflict intensifies, signals become restricted to displays of fighting or other competitive ability. Such signals are uninformative except in one narrow respect: they reveal the signaller's ability to meet the costs of the display. The more discernibly costly the signal, the more impressive it is (Zahavi 1987). As receivers incur fitness penalties for being too impressionable, all but the most costly, elaborate, repetitive and 'ritual'-like signals are simply ignored. The dynamic culminates in extravagant advertisements such as peacock displays or the roars of rutting caribou bulls.

Where interests converge, however, this dynamic is set into reverse. Instead of resisting and checking out all incoming signals, receivers can now afford to minimize response times, acting on trust. Signals then evolve to become less repetitive and 'ritualized', more cryptic, quiet and efficient. Signals may now take more effort to detect and decode, but if the information is valuable, receivers should be motivated to invest that effort. This allows signallers to offload costs of communication onto receivers — minimizing redundancy, lowering amplitude and narrowing the range of utilized channels. The outcome is what Krebs & Dawkins call 'conspiratorial whispering'. Social insects communicating within well-defended colonies offer examples of such highly informative 'whispering'.

In the animal world, however, the process of cost-cutting comes up against constraints. Where whole local populations are concerned, interests rarely converge except in relation to a narrow range of challenges such as external threats. Even in this context, any build-up of mutual trust will simultaneously offer scope for cheating. The discrete, species-specific anti-predator alarms of vervet monkeys, for example, are occasionally used deceptively against conspecifics. On hearing an alarm, correspondingly, vervets do not behave as if wholly trusting; they scan the horizon 'as if they were searching for additional cues, both from the source of the alarm call and elsewhere' (Cheney & Seyfarth 1990: 107). Admittedly, vervet alarms are honest by default: they would not work otherwise. But it is precisely where listeners expect reliable signals that they are most vulnerable to being deceived.

In the human case, speech as a low-cost, low-amplitude system meets the specifications of 'conspiratorial whispering', but by the same token it

exposes listeners to the most extreme risks. Linguistic signs are related in an 'arbitrary' way to their referents; it is learned convention alone which links a word with its semantic meaning. Such decoupling of signals from emotions and associated real-world stimuli renders listeners highly vulnerable to deception. We would expect 'Machiavellian' strategists to resist signals of this kind, setting up negative selection pressures against their evolution.

A thought-experiment may illustrate the problem. Suppose certain unusually intelligent chimps in a wild population develop a repertoire of volitional vocal signals, each with a conventional meaning. Enterprising animals will soon be using these in tactically deceiving each other (Byrne & Whiten 1985). Emission costs will be low, making even small gains worthwhile, putting pressure on all to deceive where possible. On that basis, ingroup trust will rapidly be exhausted, to the point where no-one is listening any more; the system will now be useless for any purpose, honest or dishonest. Zahavi (1993) concludes that, since potential conflicts of interest exist throughout the animal world, even between close kin, resistance to deception has always selected against conventional signals — with the one puzzling exception of humans.

4   Apes: too clever for words?

The problem, then, is that conventional signals depend on trust, whereas those animals intelligent enough to use such signals will also be clever enough to exploit that trust competitively. This may help explain why, despite their cognitive capacities (cf. Ulbaek, this volume), chimpanzees have no natural use for conventional signals. In particular, it clarifies why, in common with other primates, chimps do not vocalize dispassionately, lacking those capacities for cortical control which appear natural in other contexts such as manual gesticulation (Hayes 1950). Such lack of control should not be seen as maladaptive: at stake is the maintenance of credibility. Chimps, like other primates, need reliable signals on which to base their behaviour. Only to the extent that their vocalizations remain governed by the limbic (emotional) system can listeners trust them as reliable cues to internal states.

Admittedly, apes may volitionally suppress their calls. For example, on discovering food, a chimp may with difficulty conceal its excitement, suppressing the associated food-call and succeeding thereby in keeping

all for itself. Still more impressively, a group of chimps may maintain silence for hours while patrolling near a neighbouring band's range. This reflects a group-wide temporary convergence of interests, the suppression of sounds being backed with reprimands (Goodall 1986: 490—491). Once the danger is over and calls can be resumed, however, these are as usual highly emotional. Where calculating manipulation is concerned, the most impressive chimp signals are not their calls but their silences.

For use in deceiving one another, however, primates have resources beyond the purely vocal. In one often-cited incident, an adolescent male baboon was threatened by an approaching group of adults. Instead of running, it stood on its hindlegs and stared into the distance, as if it had noticed a predator. Its pursuers turned to look — and although no danger was present, the distraction enabled the adolescent to escape (Byrne & Whiten 1985). In another incident, a female gorilla, moving with her group, noticed a partly concealed clump of edible vine. Pretending to have seen nothing, she stopped as if to groom herself. As the others moved on, she was able to consume the food undisturbed (Whiten & Byrne (1988:218), citing Fossey). Now, it is true that tricks of this kind would not work unless most such signals were reliable. But it would be a mistake to conclude that 'primates are usually honest'. The truthful versions of the deceptive signals noted here — genuinely seeing a predator, genuinely stopping to groom oneself — would be examples of *incidentally informative* functional behaviour, not truthful deliberate signalling. The trust exploited by deceivers has nothing to do with expectations of intentional honesty. On the contrary, the cues habitually trusted as sources of information are valued precisely in proportion as their informational content appears *unintentional*.

Humans, unlike chimps, can vocalize dispassionately. This is clearly a key capacity essential to the evolution of a convention-based system of vocal communication. Under what selection pressures did it emerge? We know that it is in deceptive use of signals that cortical control most decisively takes over from the limbic system. The literature on primate tactical deception shows how, in being co-opted for deceptive use, functional routines are in a sense 'displaced' under cortical, volitional control (e.g. Savage-Rumbaugh & McDonald 1988). It is known that, among humans today, lying typically requires more cognitive effort than truth telling (Knapp & Comadena 1979). Machiavellian manipulations were by inference central to the selection pressures driving neocortex evolution and enhanced cortical control over signals among group-living

primates, including evolving humans (Byrne & Whiten 1988). But our problem is to explain how, in the human case, vocalizations became cortically controlled without becoming self-evidently manipulative and so resisted.

Although speech is not intrinsically reliable, conversationalists in fact routinely give one another the benefit of any doubt. The philosopher Paul Grice (1969) has identified mutual intentionality as the heart of human linguistic communication. We humans rely not merely on unintended truthfulness in one another's signals: where we are on speaking terms, we expect intentional honesty. It follows that without the establishment among humans of a new kind of honesty as a default — habitual honesty in volitional signalling — speech could not have got off the ground. In the human case, then, precisely the most unreliable kinds of signals — namely, the volitional, intentional ones — must have become adapted for honest use. Somehow, in the course of human evolution, what were once frequency-dependent tactical deceptions must have become increasingly routine while becoming simultaneously harnessed to a reversed social function — the group-wide sharing of good information.

Imagine a population in which volitional signals are becoming commonplace, thanks initially to skills in deception. How can a new honest strategy invade the deceptive one and become evolutionarily stable? An immediate problem is that any increase in the proportion of trusting listeners increases the rewards to a liar, increasing the frequency of lying. Yet until hearers can safely assume honesty, their stance will be *indifference* to volitional signals. Then, even lying will be a waste of time. In other words, there is a threshold of honest use of conventional signals, below which any strategy based on such signalling remains unstable. To achieve stability, the honest strategy has to predominate decisively over deception; yet the evolutionary route to such honesty seems to pass inescapably across a point at which deception is so rampant that trust in volitional signals collapses. How can this conundrum be solved?

There are those (e.g. Konner 1982: 169) who argue that the main function of speech was and remains lying. Such claims may appear persuasive; humans routinely tailor their utterances and the information divulged according to their audience and the effect desired. Yet this view poses as many problems as it solves. Speech is not only a convention-based, radically arbitrary means of communication; it is

also (by comparison with primate calls) minimally redundant, low in amplitude and heavily demanding of listeners. Darwinians view these as the tell-tale design-hallmarks of 'conspiratorial whispering' — indicating a system designed for communicating good information to trusting listeners at speed (cf. Krebs & Dawkins 1984).

This implies that speech has been co-operative from its inception. In accounting for the necessary honesty, it is tempting to draw on Darwinian reciprocal altruism theory (Trivers 1971): if you lie to me, I'll never again listen to you — so be honest. But even accepting this, we need to explain why the dynamic did not lead to volitional, conventional signalling among those apes which appear cognitively capable of reciprocal altruism. It would seem that in their case, the logic of tit-for-tat — if you lie to me, then I'll retaliate — perpetuated the equivalent of a financial crash, in which all paper currency is worthless. What stopped this from happening in the human case?

Reciprocal altruism presupposes a local network of communicators known to each other and likely to meet repeatedly over time. In larger, open populations, deceivers could theoretically escape retaliation by exploiting one gullible victim after another, each in a different locality. Our problem is that a human speech-community is not a personal mutual aid network but is typically an extended group transcending the limits of affiliation on the basis of residence, economic co-operation or kinship. Given an initial situation of primate-style Machiavellian com petition and manipulation, it is difficult to see how an honest strategy could successfully invade and take over so open a population.

5   Individual versus collective deception

In seeking a solution, we may begin by noting that fictions need not be exploitative — in principle, they may be deployed co-operatively, by a coalition. As we have seen, primates on occasion signal deceptively — such imaginative usage arguably prefiguring 'symbolic' behaviour. But they do so only for selfish, competitive gain. A primate deceptive representation, therefore, is never valued by others; resistance to it prevents the fiction from being collectively perpetuated or elaborated. Symbolic culture, consequently, cannot even begin to emerge.

The key point, then, is that primates do not engage in *collective deception*. Humans by contrast deceive collectively, recurrently establishing

group identity in the process. Told by his Dorze (southern Ethiopian) informants a patently unbelievable 'fact' — that the local leopards were devout Christians, for example — the social anthropologist Dan Sperber (1975: 3) suspected 'symbolism'. Sperber found this to be borne out regularly enough to suggest a rule-of-thumb: '"That's symbolic." Why? Because it's false.' Nigel Barley (1983: 10) glossed Sperber's rule as 'This looks crazy. It must be symbolism.' Note the implication: far from embodying self-evident truth, symbolic culture may be better understood as a world of *patent fictions* held collectively to be true on some deeper level.

Myths, dramatic performances, art and indeed all expressions of human symbolic culture may in this light be understood as 'collusion in deception' (Knight, Power & Watts 1995; Rue 1994) — collaboration in the maintenance of fictions which have social support. Trust in the founding fictions is not given lightly. Durkheim (1965) indeed showed long ago that a community will place ultimate confidence only in those fictions which are emblematic of itself. If all collude, then on another level the deceptive signal may constitute a performative, *constructing* its own truth. Ritual specialists may assume the burden of sustaining such circular 'truths' on which group identity depends (Rappaport 1979). Note, however, that ingroup/outgroup polarity is central here: one group's most sacred truths may be another's transparent deceits. 'Lies', to quote Lattas (1989: 461), 'must be hidden from some and available to others, and as such lies are ordering phenomena, constitutive of groups in their opposition to others.' A symbolic community is always on some level a secret society, its knowledge inseparable from others' ignorance and hence its own power in relation to them.

An ability to handle fictional representations, then, is the essence of human symbolic competence Distinguishing between surface and deeper meanings poses a major cognitive challenge; involvement in 'pretend-play' during childhood is crucial to the development of the necessary cognitive skills. Pretend-play is the imaginative use of one thing *as if* it were another. One child may take, say, a pencil, and move it through the air like an aeroplane. Despite knowing that the 'plane' is a fiction, the same or another child may *still enjoy the pretence*. This ability to hold in mind both 'true' and 'false' implications, handling them *on different levels*, is central to human mindreading and symbolic competence. A young child who fails to play in this way may be showing early signs of autism or 'mindblindness' (Baron-Cohen 1995). Such a child will prioritize literal truth — insisting, for example, that a pencil

is just a pencil. Faced with a playmate's patent fiction, the child shows little inclination to collude.

Effective, creative speech depends on imaginative mindreading skills and hence on collusion in a much wider domain of symbolic behaviour. The concept of *co-operative pretend-play* is central to our current under standing of how children acquire speech (Bates, Bretherton & Snyder 1988; Bruner 1977; Trevarthen 1979); it is equally central to 'speech act' theory (Austin 1978; Searle 1969). Take a seemingly propositional utterance — for example, *There are three bison over the hill*. As a factual statement, this may appear unconnected with performative invocation or communal pretend-play. Yet in reality, a constellation of ritual assumptions and expectations underpins its force. Faced with scepticism, the speaker might preface the statement with an oath: *I swear by the Great Spirit that... .* This could involve taking a knife and drawing blood. If listeners need no such costly demonstration, such swearing may be abbreviated or left implicit. But in that case, the speaker must already have paid the ritual costs of getting to a position where his or her utterances have such weight.

According to anthropologist Pierre Bourdieu (1991: 107): 'The power of words is nothing other than the delegated power of the spokesperson, and his speech… is no more than a testimony, and one among others, of the guarantee of delegation which is vested in him.' The words of some derided 'nobody' have no weight; we may accuse such a person of 'talking through his hat' or 'talking off the top of his head'. Words emanating from such a source lack what Austin (1978) calls 'illocutionary force' — that efficacy which attaches to words when they are accepted as trusted, authorized. If a known liar says 'I promise', it is not just that no-one believes; rather, no promise is in fact made. To promise is to enter into a communally sanctioned contract; one individual cannot do this alone. To 'do things with words' is to *play by the rules of the whole congregation*, as if mandated by 'the gods'; only thus authorized does any utterance work (Bourdieu 1991).

Speech-act theorists (Austin 1978; Grice 1969; Searle 1969, 1983) have established that all effective speech works on this basis. Utterances have force only through collusion with a wider system of ritual or ceremonial. It is this wider system which sustains the communal fictions (gods, spirits, etc.) upon whose authority oaths, promises and comparable declarations depend. The relevant 'morally' authoritative intangibles are products of communal ritual (Durkheim 1965): they are ingroup

self-representations, frequently 'misrecognised' (Bourdieu 1991) as other-worldly beings. Deployed to certify statements as reliable, they reflect communal resistance to deception. In the final analysis, people are on speaking terms only with those who 'share the same gods'. The magic of words is the collusion of a ritual ingroup. Withdraw the collusion and nothing happens — the speaker's words are empty sound.

Unlike Machiavellian primates, whose creative fictions prompt countermeasures from those around them, human conversationalists routinely *encourage* that very resort to imaginative story-telling which in primates is socially resisted. Humans reward one another in the currency of status, conferred by listeners in proportion as utterances appear relevant in addressing some shared concern (Dessalles, this volume). Such status-seeking may appear individualistic and competitive (Burling 1986), but we should remember that there are limits to this. Speakers, whatever their differences, must remain in effect co-religionists — those 'in the know' must be trusted to use the discourse for shared purposes, concealing it where necessary from outsiders. Where these conditions are not met, then the relationship of status to relevance may be reversed. When conspiring to rob a bank, for example, the important thing is not to divulge the plan to the authorities. Preparations for war, or for a ritual contest against the enemy team, equally demand discretion. Such cases remind us that 'relevance' is defined by a problem shared, and that social boundaries are likely to be decisive. Far from raising one's ingroup status, being relevant to the wrong people will lower it.

A status-conferring ingroup admits members only at a price. Traditionally — as in the case of Aboriginal Australian male secret societies — the initiatory ordeals tend to be bloody and painful (Knight 1991). Willingness to pay the costs displays commitment; in principle, the heavier the costs, the better. Ritual is the one signal which, in being visibly costly, carries its own authentication — requiring no external corroboration because in principle it cannot deceive (Aunger 1995; Rappaport 1979). Ingroup confidence in other signals, such as cheap vocal ones, can now be based on this ultimate 'gold standard'. Effective speakers are those who, having paid the costs, are authorized to act 'in God's name' (Bourdieu 1991). Such authority can at any time be with drawn. Under such circumstances, only an incompetent Machiavellian would be tempted to lie.

All this is far removed from primate-style 'Machiavellian' politics. Chimpanzees may play, but their playful fictions are not collectively

shared. Given such isolation on the imaginative level, intangibles such as 'promises' stand no chance of emerging as publicly available fictional representations — no chimp ever swore on oath. Note, moreover, that for a chimp to freely broadcast relevant information would be maladaptive: opponents would simply take advantage and status would be lost. Chimps, not surprisingly, are as concerned to conceal relevant information as to reveal it. Experts at being poker-faced, they have no interest in having their minds read too easily (De Waal 1982).

6   The origins of ritual

How and why, then, did social life change so dramatically in the human case? Current models (e.g. Dunbar 1993) associate the rapid evolutionary expansion of the hominid brain with increasingly Machiavellian cognitive demands. Darwinian strategies of 'Machiavellian status escalation' — coalitionary resistance against physical or sexual dominance by individuals — may account for the emergence of egalitarian social norms of the kind characteristic of modern human hunter-gatherers. Recall the obsequious sexual and other submission-displays central to the signalling repertoire of the social great apes; these contrast sharply with the 'don't mess with me' norms of human hunter-gatherers. If everyone is king, then no-one is. Hunter-gatherer females as well as males show strong aversion to submission (Knauft 1994: 182). Hunter-gatherer egalitarianism, in this Darwinian perspective, becomes established as the capacities of dominant individuals to exploit subordinates become increasingly matched by group members' 'counterdominance' capacities. Under such conditions, a strategy of 'playing fair' — resisting dominance by others while not attempting dominance oneself — becomes evolutionarily stable (Erdal & Whiten 1994).

A more detailed speculative model (Knight *et al*. 1995; Power & Aiello 1997) locates the emergence of symbolic behaviour in counter-dominance strategies driven by the needs of females undergoing reproductive stress as brain-size underwent rapid expansion between 400,000 and 100,000 years ago. Unable to afford monopolization by dominant male philanderers, child-burdened mothers were increasingly driven to meet the costs of encephalization by making use of all available males, mobilizing coalitionary support from male kin in extracting from *out-group* males increasing levels of mating-effort in the form of provisioning.

Kin-coalitions of females, backed by male kin, brought to a head such strategies by periodically refusing sex to all outgroup males except those prepared to hunt at a distance and bring 'home' the meat. Periodic collective withdrawal of sexual access, prompted whenever provisions run low, is conceptualized by Knight (1991) in terms of 'strike'-action. One way of testing this model is to ask what kinds of signalling behaviour it would predict. Courtship 'ritual' in the animal world is central to a species' mate recognition system; the basic pattern is one in which females signal to prospective male partners: *I am of the same species as you; of the opposite sex; and it is my fertile time*. On this basis, we would predict sexually defiant females to reverse the signals to *Wrong species/sex/time*. This, then, is the predicted signature of 'sex strike'. On Darwinian grounds, we would not expect such a message to be transmissible in whispers or in code. For human females to indicate *We are males!, We are animals! and Anyway, we are all menstruating!* is on one level absurd and implausible. The target audience of outgroup males will have no interest in collusion with such a collective fantasy. To overcome listener-resistance, signallers will therefore have to resort to the most explicit, loud and spectacular body-language possible. A costly, multimedia, deceptive display is now being staged by an ingroup to impress and exploit outsiders.

We now have a Darwinian model of the origins of collective deception through symbolic ritual. Although speculative, it is detailed and specific enough to be testable in the light of archaeological and ethnographic symbolic data. An extremely conservative level of cultural tradition is that of magico-religious symbolism. Southern African archaeologists widely agree that significant continuities in San hunter-gatherer material culture extend back about 25,000 years — the duration of the Later Stone Age (Knight *et al*. 1995). Checking the model's predictions against the data on ritual, we find that during the 'Eland Bull Dance' of the Kalahari San, held to celebrate a girl's first menstruation, women motivate males to hunt by defiantly signalling 'maleness' and 'animality'. Specifically, women signal *We are Eland!* This explains why linguistic reference to this antelope embraces meanings which include 'people', 'dance', 'fertility', 'gender-ambivalence' and 'menstruating maiden' (Lewis-Williams 1981; Power & Watts 1997). The 'Eland Bull' of Kalahari discourse is not a perceptible entity but a morally authoritative construct — a 'Totem' or 'God'. The gender-ambivalent, woman-loving 'Rainbow Snake' of Australian Aboriginal tradition equally matches the

model's 'wrong sex/wrong species' predictions, as do representations of ritual potency/divinity cross-culturally (Knight 1991, 1996, 1997). Ritual maintenance of such paradoxical constructs requires elaborate communal pretend-play. Imagine a group of outgroup males faced with a performance such as the 'Eland Bull' dance. The women's ritual identification with this animal of male gender will appear to them implausible — yet unanswerable in being forcibly asserted. Dancers are here asserting counterreality through counterdominance — a strategy of sexual resistance. Challenges would amount to harassment. But while the audience must neither probe nor question, literal belief is equally impossible. Consequently, 'mindreading' takes over; belief is displaced to another level. Behind the vivid, dramatic lies, listeners are invited to discern a simple idea: 'No' means 'No'. On this 'metaphorical' level, the message indicated by the dancers is certain truth.

Communal self-defence is now inseparable from maintenance of the founding ingroup fiction (cf. Hartung 1995). Such defiance/defence might logically be expected to generate intense and diffuse internal solidarity, including the extension of each coalition to embrace 'brothers' and 'sisters' across the landscape (for hunter-gatherer patterns of 'fictional kinship' interpreted in this light, see Knight (1991)).

7   The origins of speech

If we are to understand the origins of speech, it is essential to understand first the factors obstructing its evolution in other species. 'Machiavellian' primate politics, we have seen, prompts mistrustful listeners to resist all signals except those whose veracity can be instantly and directly corroborated. This immediately excludes (a) volitional conventional signals; (b) displaced reference; (c) signals literally false but metaphorically true; (d) signals meaningful not in themselves, but only in combinatorial contexts. Primate-style resistance to deception, in other words, obstructs the emergence of the characteristics of speech not just on certain fronts but on all fronts simultaneously.

Suppose that whenever I opened my mouth to begin speaking, I found myself instantly challenged, my audience demanding on-the-spot corroboration of the very first sounds, refusing to listen further until satisfied. Denied the chance to express one transparent fiction, modify it by another, modify that in turn and so on, I could hardly display any

skills I might have for handling such sequences. Faced with refusal to suspend disbelief even momentarily, I could hardly venture to refer to phenomena beyond the current context of here-and-now perceptible reality. How could I express a fantasy, elaborate a narrative or specify with precision a complex thought, if listeners demanded literal corroboration of each signal as I emitted it, refusing to wait until the end before deciding on a response? Finally, it is difficult to see how my utterance could display duality of patterning if listeners demanded literal veracity on the syllable-by-syllable level, obscuring and resisting the possibilities of meaning or patterning on any higher level.

My freedom to speak presupposes that you, the listener, are trusting enough to offer me, at least initially, the benefit of any doubt, demanding and expecting more information before checking out what I have signalled so far. I need you to be willing to internalize literal fictions, evaluating meanings not instantaneously, item by item, but only as I construct larger patterns on a higher, 'combinatorial' level (cf. Studdert Kennedy, this volume). By primate standards, such collusion with my deceits would appear disastrously maladaptive. Why place reliance on transparent fictions? Under the conditions of ordinary primate 'Machiavellian' politics, the fitness costs of such cognitive surrender would far outweigh any benefits.

Mistrust, then, sets up — simultaneously and on all fronts — selection pressures obstructing the emergence of speech. An intriguing corollary worth exploring is that by the same token, if sufficiently intense ingroup trust could be generated, it would set up reversed selection pressures simultaneously on all fronts, 'unpacking' speech-performance *on the basis of capacities already evolved*.

Such a model would allow us to break with the tradition in which language appears as a bundle of separate components or features, each requiring its own evolutionary explanation. We could instead treat metaphor (Lakoff & Johnson 1980), displaced reference, duality of patterning (both in Hockett (1960)) and syntax (Chomsky 1965) as logically interrelated. Moreover, we could discern a connection with symbolic behaviour more generally, reconceptualizing reliance on speech as a modality of 'faith' — reliance on second-hand information, based on faith in the signalling intentions of others.

We may now begin putting all this together. As modelled in the previous section, imagine a broad, stable coalition of females allied to male kin, targeting deceptive sexual signals at outsiders for the purpose

of exploiting their muscle-power. The loud, repetitive signals are patent fictions. Not only do they fail to match reality — they systematically reverse it, point by point. But if all are deploying the same fictions, and if this signalling is *internally* co-operative, then between group members there is no reason to expect resistance. Those colluding in emitting the fictions now have an opportunity to understand one another 'through' them. When deployed internally, moreover, pretend-play routines may be abbreviated and conventionalized. Shorthand portions of pretend-play will now act as referents, not directly to anything in the external world, but to recurrent representations within the domain of pretend-play held in common. 'Displaced' reference — reference to points in a domain of communal imagination — has now come into being. Note that the condition of this was the emergence, thanks to sexual counter-dominance, of a shared domain of reality-defying deception/fantasy in the first place. In what follows, I address some problems in evolutionary linguistics which this approach may help to explain.

7.1   *Conventionalization*

Speech — if this model is accepted — is a special case of 'conspiratorial whispering'. In communicating within an already-established ritual ingroup, there is no need to waste time or energy. There will be minimal resistance to signals, hence no need to repeat, amplify or display. Signallers can abbreviate their pretend-play routines — which, before long, will be so cryptic and conventionalized as to have become, to an outsider, unrecognizable. Convention alone will now link the shorthand gesture to its referent. We need not postulate conscious decision-making to arrive at such 'arbitrary' agreements. Instead, given sufficient ingroup trust, a tendency for all signals to begin as 'song-and-dance' and gradually to become conventionalized will be an inevitable, automatic and continuous process (cf. Heine, Claudi & Hünnemeyer 1991; Klima & Bellugi 1979).

7.2   *Metaphor*

Metaphor — a kind of pretend-play — is central to linguistic creativity and renewal. A metaphor 'is, literally, a false statement' (Davidson 1979). React on a literal level, and the signaller will be rebuffed, denied the freedom to 'lie'. By contrast, where listeners are willing to mindread *through* such fictions, metaphorical usage will flower. Metaphor counters a process of decay intrinsic to conventionalization. As pretend-play

sequences get abbreviated and routinized, so listeners become habituated to them, processing them quickly and almost unthinkingly, the whole mind hardly engaged. This does not matter where purely digital, on/off indications of case, tense or other grammatical properties are concerned: all will have standardized, stereotypical 'concepts' on this purely grammatical level, making it immaterial whether communication fully engages the imagination. Conventionalization on this level becomes in fact the secret of speech's astonishing efficiency. Yet genuine, novel human thoughts arise from the whole mind, and, to communicate these, we correspondingly need to engage the imagination of listeners. To this end, speakers counteract conventionalization, exploring the domain of ritual fantasy in search of fresh and dramatic fictions which can be applied in novel contexts. Metaphors are such fictions. Being literally false, they demand full cognitive involvement on the part of listeners if they are not to be mistaken for deceits.

7.3   *Tense/case markers*

Pressures to develop markers indicating tense, case and other such properties will now be felt. Note that primates are under no such pres sure. Embedded in the currently perceptible world, their gestures and calls allow listeners to gain all the supplementary information they need simply by checking out the perceptible context of each signal. Metaphorical fictions such as Gods, Unicorns or Eland Bulls have no existence in space or time; listeners wishing to check out the propositional value of any such symbolic usage will therefore need further information. Pressure to connect back to some verifiable position in space/time will drive signallers to find new metaphors capable of specifying such relationships.

7.4   *Grammaticalization*

As the more costly ('ritualized') dimensions of the pretend-play domain become set aside for use against outsiders, the remaining signals — reserved for ingroup use — therefore come under novel selection pressures. Grammatical markers have been shown to be metaphorical expressions which, through a process of long-term linguistic change, have become habitual, abbreviated and formalized. If self-expression through metaphor were blocked — if listeners resisted such fictions instead of exploring the co-operative intentions 'behind' them — grammar could not even begin to evolve. The initial raw material for construction of a

linguistic form is recurrently an imaginative and dramatic metaphor, potent in proportion as it is 'displaced' — uprooted from its original setting and reinserted into a novel, unexpected context. All the morphemes comprising a natural language, including even grammatical items such as prefixes or suffixes marking tense or case, were originally just such imaginative fictions. But in being conventionally accepted and circulated, each has become gradually transformed into an increasingly cryptic signal conveying a more and more well-worn, conventional message (Heine *et al*. 1991; Kurylowicz 1975).

7.5   *Productivity/generativity*

While ritual signals are one-way — targeted repetitively, stereotypically and insistently at the outgroup — ingroup communication is intrinsically two-way, with contradiction, questioning and qualification inevitable. With signallers pressed to reveal the contents of their minds, any single pretend-play routine is likely to be deemed insufficient; listeners will demand one such abbreviated signal followed by another and then another, each narrowing the range of possible interpretations. As conventionalization proceeds, each lower-level fictional representation will now be noted and *rapidly processed* not for its intrinsic value but only as a cue to a higher, combinatorial level of meaning. Signallers are now under pressure to develop skills in assembling uniquely relevant sequences from discrete, recyclable lower-level components (cf. Studdert-Kennedy, this volume). From phonology to syntax, all levels in the emergent hierarchy coevolve.

7.6   *Status-for-relevance*

To the extent that dual loyalties, conflicts and suspicions no longer characterize *ingroup* relations, listeners are now in a position to trust *all insiders* who might potentially offer relevant information, conferring status accordingly (cf. Dessalles, this volume). Note that a *ritually organized* group may far exceed the size of a kin group or personal mutual aid network.

7.7   *Performative force*

Words are cheap, making it difficult to understand why they were ever taken seriously. The solution here suggested is that words evolved not in isolation but as part of a system. Ingroup solidarity at outgroup expense was demonstrated through costly ritual display, targeted against outsiders.

Ritual performance, in conferring authority on participants, then gave weight to those cheap vocal shorthands which members of each ingroup — having paid their admission-costs — could now safely use among themselves.

7.8   *Vocal—auditory reliance*

Within each ritual coalition, 'conspiracy' presupposes not only the trusting, group-wide divulging of relevant information but equally its concealment from outsiders. A 'mimetic' language of dance or gesture, besides being slow and costly, is vulnerable to eavesdropping: it broadcasts information, but is poorly designed for selectively concealing it. Being in conspiratorial contexts a handicap, self-explanatory gesture is therefore rapidly phased out in favour of reliance on cheap, conventionalized vocal signals permitting exclusion of outsiders through frequent switching of codes (cf. Englefield 1977: 123). The primary ingroup communication system is now fully conventional and one-sidedly vocal-auditory.

7.9   *Syntactical competence*

Within each ritual ingroup, vocal mini-routines, in being abbreviated and deprived of their former gestural/mimetic medium, assume novel form. With all former pretend-play linkages removed, linear sequences of conventional vocal signals must now bear the full syntactic load. Note that there is nothing specifically vocal about the neural linkages or skills involved: deaf children of hearing parents, *deprived of a vocal medium within which to embed and link their gestures*, are in a comparable way forced to invent de novo a discrete-combinatorial language out of manual signs (Goldin-Meadow 1993). No sudden genetic reorganization of the brain is required to introduce such novel complexity. For the human mind as already evolved to switch over to the new system, just one new operational principle may suffice (cf. Berwick, this volume). And now, as signal is placed after signal and fiction set recursively within fiction, 'syntactical complexity' — previously a property of mindreading (Worden, this volume) and communication through mimetic gesture (Armstrong, Stokoe & Wilcox 1994; Donald 1991, this volume) — floods into the vocal-auditory channel. Signallers must now use a linear stream of coded vocal shorthands to recursively embed fictions whose mutual relationships remain represented in the mind as bodily gestures (cf. Johnson 1987). Exapting neurophysiological capacities for handling

a system of calls still heavily embedded in gesture, syntactical speech explosively evolves.

8   Conclusion: the 'human revolution'

Bickerton (1990, this volume) posits that speech emerged in an evolutionary quantum-jump. Archaic humans possessed 'protolanguage' — a vocal system with a substantial lexicon but lacking syntax. Vocal signs were strung together like beads on a string, in the absence of any systematic ordering principles. Then, with the emergence of anatomically modern humans, syntax appeared, caused by a genetic mutation which abruptly re-wired the brain.

In this chapter's contrasting scenario, something prefiguring 'syntax' has long been present, but not initially as a way of ordering combinatorial sequences of conventionalized, abbreviated vocal mini-routines. Pre-modern humans in this model are heavily involved in communal pretend-play or 'mimesis' — fantasy-sharing representational activity such as mime, song and dance (cf. Donald 1991); this drives selection pressures for subtle volitional control over emotionally expressive vocalizations and linked gestural representations. At this stage, generativity based on discrete/particulate structure is held back, because signallers must still combine conventional call with emotionally expressive, costly display in each signalling episode, in this respect maintaining continuity with primate 'gesture-call' systems (cf. Burling 1993).

Coalition-members during this evolutionary period have shared interests, allowing them to arrive at cost-cutting shorthands in representing food-items, predators and other things. But there is as yet no polarized binary/digital ingroup/outgroup dynamic structuring relationships across the landscape (cf. Knight 1991: 301—304). Instead, kinship-based coalitions and mutual aid networks cross-cut and overlap, with much dual membership, conflicting loyalties and hence internal flux and instability. In this context, it remains as important to withhold relevant information as to divulge it. Almost any listener is potentially a rival, even when currently an ally, blocking the emergence of a group-wide, trust-based, purely conventional system. Signallers continue to rely on their primate-derived 'hard-to-fake' signals for cajoling, seducing, threatening and so on, such emotionally convincing body-language still retaining primacy over any shared code. An element of 'song-and-dance'

therefore remains central to all communication, anchoring and connecting low-cost shorthands or abbreviations in a matrix of more costly gesture — and thereby blocking the emergence of syntax/grammar as an 'autonomous' domain. There is 'syntax', but only in the sense that there is hierarchical, recursive embedding of one pretend-play fiction within another. The hierarchical ordering central to syntax has yet to become mapped onto a *purely conventional* linear sequence of signals. Instead, as with modern children in the pregrammatical stage (Zinober & Martlew 1986), pretend-play based largely on gesture still carries the syntactic load, with any conventionalized vocalizations acting as accompaniments. The human symbolic revolution (Knight *et al.* 1995) begins to get under way from about 130,000 years ago. At this point, coalitions at last become universalistic, stable and bounded through balanced opposition, each constructing, through communal pretend-play, a shared self-representation — *'the Eland Bull 'the Rainbow Snake 'the Totem'*. This morally authoritative enactment — in essence 'wrong sex/species/ time' — now functions as the overarching sacred 'Word' (cf. Rappaport 1979), authenticating all lower-order semantic meanings and associated vocal markers. It is in this novel social and ritual context that syntactical speech emerges.

A simple ingroup/outgroup model of this kind has one major advantage. We need no longer suppose that humans evolved to become anomalously honest. Humans are dishonest, exploitative and manipulative — in many respects especially so. But this model allows us to see how a profound coalitionary restructuring could have redistributed honesty and dishonesty, co-operation and competition, such that symbolic culture was the result.

Acknowledgments

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