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ROBIN I. M. DUNBAR
WHY ARE GOOD WRITERS SO RARE?
AN EVOLUTIONARY PERSPECTIVE ON LITERATURE

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Abstract. Evolutionary approaches to literature can take one of two directions. One is to ask what functions story-telling serves. The second is to ask what role cognitive mechanisms play in the production of story-telling. I argue that story-telling evolved as part of the group-bonding processes that are concerned primarily with limiting the freedom of movement of freeriders within society. I then examine the extent to which stories reflect the author’s intuitive grasp of the evolutionary principles that underpin human behaviour. Finally, I examine the extent to which human social cognitive capacities constrain both audience and composer in the production of stories. I argue that, to be successful, story-tellers have to work at cognitive levels beyond the norm for adult humans, and this may explain why good story-tellers are rare even though the ability to appreciate stories is universal. I suggest that an author’s success may be determined both by his/her intuitive understanding of the evolutionary factors that ultimately drive human behaviour and by the extent to which he/she is able to work at the cognitive limits of the target audience.

Keywords: behavioural ecology, theory of mind, social bonding, story-tellers

INTRODUCTION

Story-telling is a major part of human life. Indeed, it probably ranks as one of the most intellectually challenging and, at the same time, enriching of all the activities in which we engage. Yet, it has received surprisingly little attention from evolutionary biologists or psychologists. To some extent, this may reflect the fact that it has been viewed as something of an epiphenomenon, a by-product of other evolutionary processes (such as the evolution of a large brain) that has no adaptive function of its own. However, given the time and effort – not to say cost – that we put into producing, buying and reading (or listening to) stories in all their myriad forms, this is at best an odd conclusion from an evolutionary point of view. The high cost of this investment makes any suggestion that story-telling is an epiphenomenon rather implausible. Anything that costly in real life almost certainly has a biological function.

As always with the biological approach, there are four broad kinds of questions (known as Tinbergen’s Four Whys) that we can ask about story-telling as a phenom-
enon. One concerns function: what purpose does this phenomenon serve in an individual’s lifehistory. Ostensibly, such questions are answered by showing that individuals who engage in more of the activity (or do it better) have higher fitness (more offspring or, since fitness is better measured by later generations, more grandchildren). A second is to ask about the mechanisms that make story-telling possible. Language is, of course, a prerequisite, but that is not an especially interesting observation to make. A more interesting question at the mechanisms level is to ask about the cognitive processes that make story-telling possible. A third is to ask about the phenomenon’s evolutionary history: when did story-telling first evolve? Finally, we can ask about the developmental sequence whereby the capacity to appreciate and tell stories arises in children. Again, language is of course a prerequisite, but the more interesting questions are probably about the development of the cognitive mechanisms that make story-telling possible.

In this article, I will focus on the first two of these questions (function and mechanisms). This is mainly because what little we can at present say about story-telling from an evolutionary point of view is really limited to these two components. Even so, I will have much less to say about function. This is partly because we know less about function in this respect, but also because much of what I have to say about function will actually focus on the social and cognitive mechanisms that underpin these functions – the reasons why these functions work. This will be the focus of the first section below. In the last two sections, I will concentrate more on what it takes to be a good story-teller – in effect, I will ask: why are good story-tellers so rare? I want to distinguish two separate approaches that an evolutionarily-minded inquiry might adopt to this question. One is to ask the obvious (and well tried) question of how well the author mirrors the natural events and processes of the human social world, but I will give it a new evolutionary twist. The other is to ask about the cognitive demands that story-telling makes on both the creator and the audience.

THE ADAPTIVE FUNCTIONS OF STORY-TELLING

Story-telling is, above all else, a communal activity. Its functions must thus be seen in the context of why humans live in groups and the demands that group-living makes on us. I do not intend to consider the first of these here. Suffice it to say that, like all primates, humans live in social groups in order to solve some of the problems of successful survival and reproduction that beset us at the individual level (see, for example, Dunbar 1988). Social groups are communal solutions to these problems – implicit social contracts that individuals make with each other in order to facilitate cooperative solutions that benefit all members of the group individually. In short, we are an intensely social species because sociality is the principal means that primates
have evolved to solve the ecological problems with which they have to contend. What those problems are does not affect our analysis of story-telling in any substantive way, and we do not therefore need to consider this issue further.

Of much more significance, however, is the fact that social life brings with it its own peculiar problems. By their very nature, all social contracts of this kind are susceptible to exploitation by freeriders (those who take the benefits of sociality without paying all the costs, and who thus trade on the altruism and goodwill of those they exploit) (Dunbar 1999; Enquist and Leimar 1993). Enquist and Leimar used a computer simulation to demonstrate that freeriders can easily overwhelm a society founded on cooperative exchange (thereby destroying it) if they are given free rein. In order to prevent this happening, humans have evolved a number of mechanisms designed to identify and/or control freeriders. These include sensitivities to those who default on social contracts (Cosmides 1989; Mealey, Dao and Krage 1996), the use of social badges as markers of group membership (e.g., dialects: Nettle 1999; Nettle and Dunbar 1997) and the exchange of information on the activities of such individuals (social gossip: Dunbar, Duncan and Marriott; Enquist and Leimar 1993).

I want to suggest that story-telling is yet another mechanism that we have evolved to combat the corrosive and destructive effects of freeriders. However, the way storytelling works in this respect is rather different to the kinds of mechanisms mentioned above. Whereas the other mechanisms mentioned above are largely intended to mark out and exclude freeriders, story-telling works because it helps to bind the members of the community together. I suggest it does this in at least two separate ways.

One is that it provides a corpus of shared knowledge that acts like a badge of group membership. Being able to recognise individuals as being members of our community reduces the risk that we will be exploited by freeriders because of the social pressures created by intensifying the sense of belonging, of community membership. In the small communities that have dominated human history and prehistory, membership of a shared community almost certainly meant biological kinship. Being biologically related to another individual means that you can afford to be exploited: the cost that you bear when others cheat on you will be paid back in subsequent generations providing your altruism results in those genes that you share with the freerider being replicated more effectively. That, as Hamilton (1964) showed, is simply a matter of the degree of relatedness involved.

However, even without biological relatedness, membership of the same community carries an important message: it means that you and I operate under the same codes of honour and reciprocity. At least I know where I stand with you, so my behaviour can be more closely fine-tuned to take account of your likely future behaviour. In addition, community membership also carries with it layers of social obligation and peer pressure. You will repay the debt in due course because I can draw on
what amounts to a community-wide police force to bring you to book if you renege. In this sense, story-telling is somewhat analogous to creating a social badge like a dialect or, more mundanely, a particular hairstyle or design of clothing. Psychologically, however, a shared body of knowledge has a deeper meaning than simply adopting someone else’s hairstyle. A shared body of knowledge implies that we share common cultural roots, grew up in the same intellectual environment, absorbed the same culture at our respective mothers’ knees.

There is, however, a second aspect to this process. In the preceding discussion, I emphasised the intellectual aspects of the story-telling process: the shared knowledge base, whether it be of mythical characters like Snow White or real ones like Julius Caesar, remind us at once that we share a cultural history. If you know whom I mean when I mention Snow White, then it is a marker of the fact that we belong to the same cultural community. I recognise that intuitively, but it is in essence an intellectual or cognitive process.

But, story-telling also has a more visceral side to it. This comes in part from the sense of physical closeness created by sitting down with a group of people to listen to the story-teller plying his or her trade. In addition, good story-telling arouses emotions. In a well-told story, the audience’s sense of anxiety or fear is resolved at the end, and that physiological release creates a sense of communal experience. This is especially clear when story-tellers use laughter, as many do. Laughter has the peculiar property that it stimulates the release of endorphins, a class of neuro-endocrines that are important part of the body’s suite of pain control mechanisms. Endorphins (which are responsible for giving us that light-headedness and slight “high” we experience after a bout of intense laughter) make us feel rather open to and positive towards those with whom we engage in this activity. The sense of bondedness that emerges from this endocrinological activity probably plays a very critical role in enforcing a sense of community spirit. It may explain why laughter is so important to us (uniquely so, as a species), and why we devote so much of our time – both in casual conversation and in formal story-telling – to deliberately making each other laugh.

An alternative view of the adaptiveness of story-telling stems from Miller's (1999) Scheherazade Effect. Miller argued that cultural displays may have been exploited by sexual selection in order to provide an index of quality that members of the opposite sex could exploit when choosing prospective mates. He suggested that features like vocabulary size and verbal agility, as well as the ability to tell stories that keep a mate entertained, are direct measures of the cognitive competence of the speaker, and hence provide one important measure of the genetic quality of the individual – much as the ability to produce and maintain a spectacular tail provides an index of a peacock’s genetic quality. In a species that lives in as intellectual world as humans do, this suggestion carries some considerable plausibility, and Miller was able to adduce some evidence in support of his hypothesis.
However, while it is plausible to argue that Miller’s hypothesis is a secondary exploitation of an existing capacity (an exaptation in Steven Jay Gould’s sense), it suffers from some difficulties as a general explanation for the evolution of language and story-telling. Not only is there relatively little evidence to support the claim that humour \textit{per se} is attractive (\cite{storey2003}), but it leaves unanswered the problem of how large social groups are bonded (see \cite{barrett, dunbar, lycett2002, dunbar2003}). A more plausible account, I think, offers language and story-telling as devices that evolved to bond large social groups, but which, once in place, provided the opportunity for exploitation by sexual selection in just the way that Miller proposed. Evolutionary windows of opportunity of this kind are in fact extremely common. Moreover, sexual selection is an extremely powerful mechanism in evolution, and often operates in exactly this way (the peacock’s tail being an example of just this).

It is important to note here that the argument I have deployed should not be misinterpreted as implying some kind of group selection. Most traditional explanations in the social sciences and humanities would typically emphasise the role of cultural forms of behaviour in creating the group or community as a thing in itself. Following Durkheim, the society or culture is seen as reproducing itself and subjugating the individual to its interests. We are socialised into the ways of our culture, and we have little control of what that culture entails. While this is certainly a fair description of how culture or society influences the individual’s socialisation, it overlooks the fact that, on the longer time scale, cultures do change, and they invariably change as a result of the actions of individuals. The evolutionary perspective assumes that, ultimately, individuals can (and do) change culture, albeit slowly. The benefits of being in a social group (or culture) arise from how that fact allows the individual to solve the problems of life and successful reproduction more successfully than he or she would be able to do on their own (or in another culture or social group). Even though the individual has to sacrifice some of his or her immediate selfish desires in the interests of group cohesion, it is ultimately the benefit of the individual (or, to be more accurate, his or her genes) that is paramount. It is important not to lose sight of this fact even when we use the kind of shorthand I have used above for discussing how cultural systems work.

If the evolutionary function of story-telling is to create a sense of community and bonding, then inevitably it raises the possibility that some individuals may be able to do the job better than others. It is to this issue that I now turn.
BEHAVIOURAL ECOLOGY AND LITERATURE

If story-telling is to carry the weight I have suggested it is intended to do, then the story-teller’s success must depend not just on its entertainment value (merely telling a series of disconnected jokes will do that as well as anything), but on being able to hold a mirror up to our own behaviour. Human behaviour is essentially about the behavioural ecology of everyday life – the evolutionarily-valent behaviours that influence our inclusive fitness as individuals. That being so, we should be able to examine works of literature much as behavioural ecologists do the real behaviour of animals (including, of course, humans). We should find clear evidence for evolutionarily attuned behaviour in the characters that an author describes.

In one such study (Dunbar, Duncan and Marriott 1997), we analysed the frequencies of murders and alliances in two Icelandic Viking sagas (the Orkneyinga and Njal’s Saga) to see how well they matched up to the predictions of kin selection theory. Like many of the sagas, both are in fact histories: they purport to recount real events that took place in tenth century Viking communities (the first being a history of the Viking earls of the Orkney islands off the northernmost coast of Scotland, the other an account of a series of vendettas that beset one of the Viking communities in Iceland over a 50-year period). Indeed, both are very firmly rooted in actual history, since many of the events and individuals they describe have been confirmed by historical and archaeological research. However, all histories are in some sense fictional documents: much like Shakespeare’s historical plays, they are often explicitly intended to serve the interests of the winners in the aftermath of victory over rivals, and thus tend to twist events and circumstances to suit their particular claims. However, in describing the events they do, it is the quality of the construction that is important, not the events themselves, that makes any history a piece of literature. To make a plausible account, that construction has to dig deeply into the motivations of the characters and well as their actions: to ring true, they have to be plausible accounts of real human behaviour.

That said, how well do the creators of these two Viking sagas do? We undertook a detailed analysis of how well the events described in the two sagas match the predictions of Hamilton’s theory of kin selection. We focussed on two key predictions: first, that individuals should be less willing to murder close relatives than more distant ones, unless the payoff for doing so was proportionately greater, and, second, that alliances with relatives should be more stable than those with non-relatives.

It is important to appreciate that, like most universal rules in evolutionary biology, Hamilton’s (1964) theory of kin selection does not state that individuals will always support their relatives against non-relatives (or even more closely related individuals against less closely related individuals). Rather, it states that this will be so only when the payoffs from doing so are greater than the payoffs from the op-
posite strategy. From this, it follows that, when the payoffs are sufficiently asymmetric, non-relatives will be supported at the expense of relatives. We therefore predicted that when the benefits obtained from murder are minimal (a spontaneous bar-room brawl after a heavy night on Viking beer), relatives will be spared even when non-relatives are not), but when the benefit is high enough (an insult to one’s honour, acquisition of an entire estate or earship) then close relatives may be at as much risk as less closely related individuals. Analysis of 48 murders recorded in the *Orkneyinga* as a function of paternal kinship (the limit on kin being defined by paternal cousins) in relation to three categories of benefit showed that these predictions were upheld (Figure 1). Relatives were never murdered when the gains were low, though non-relatives were murdered with about the frequency they occurred in the population; in contrast, when the gains were high, relatives were murdered nearly three and a half times more often than would have been expected given their frequency in the population, whereas non-relatives were murdered at no more than average rate given their frequency. (For a less detailed analysis of other historical examples, see JOHNSON and JOHNSON 1991.)

*Figure 1.* The relative frequency with which individuals were murdered in the Viking *Orkneyinga* saga (indexed as observed frequency divided by frequency of category in population) as a function of relatedness to murderer (relatives defined as paternal cousins or closer) and the benefit to the murderer (in terms of the payoff acquired as a result of the murder). Reproduced with the permission of the publishers, Palgrave-Macmillan, from BARRETT, L., DUNBAR, R. I. M. andLYCETT, J. (2002) *Human Evolutionary Psychology*
Similarly, an analysis of 74 alliances described in the two sagas revealed that these were more likely to be formed (or loans made of fighting ships and men) between close relatives; moreover, when formed between relatives, such agreements were less likely to be based on guarantees of repayment or reciprocation than if the principals were unrelated. Finally, alliances were significantly more likely to be broken (or subsequently reneged on) if the principals were unrelated.

Another example of how a good writer accurately captures the natural behaviour of everyday life is provided by Still, Nettle and Dunbar (2004; see also, Still and Hudson, this volume). They showed that the number of characters in the castes and individual scenes in Shakespeare’s plays mirrors remarkably closely natural human groupings in everyday life. Caste size typically matches the size of human social networks (25–35 individuals), while the number of characters active in a scene at any one time is identical to the size of natural human conversations (a maximum of 4 individuals).

Even a cursory glance through the corpus of English literature is enough to suggest that other kinds of predictions from evolutionary theory are likely to be reflected in real fictional stories. Although few have used a quantitative approach to test specific hypotheses, a number of authors have pointed out that an evolutionary approach can offer novel insights into both the structure and characterisation of literary works of various kinds (with respect to origin stories: Knight 1991; with respect to more conventional fictional literature: Carroll 1995, 1998; Cooke 1995; Fox 1995; Whissel 1996; Thiesen and Umezawa 1998).

Jane Austen’s novels, for example, provide what must surely be some of the most acute observations of real human behaviour in fictionalised form. They provide us with intense, at times cruelly accurate, at times hilariously funny, insights into the everyday lives of the “county folk” of middle England during the first decades of the nineteenth century – their aspirations, their foibles, their fears for the future. What makes them work, even today, is the acuteness of Austen’s observations of the universals of human behaviour, and particularly those concerned with courtship, marriage and inheritance – in other words, our preoccupations with the central theme of evolution, successful reproduction. Austen’s people are set in a particular time and place, and a particular social context, but their preoccupations with how to make the best arrangements for themselves and their lineages are timeless. And it is surely the acuteness of Austen’s observation in this respect that set her and writers of her stature apart from the humdrum average. Dickens, to take but one more example, provides us with similar insights into these same universal themes. The same concerns of inheritance and marriage opportunity are played out in Great Expectations and David Copperfield. Here, too, we find the importance of kinship as a motivating factor in beneficence as much as its absence fuels oppression in the small world of the step-family.
This much has been borne out by recent more detailed analyses of literary corpora. Kruger, Fisher and Jobling (2003), for example, have shown that readers' responses to different kinds of heroes in nineteenth century English novels (“proper” versus “dark” heroes) neatly matches both what evolutionary theory would predict in terms of mate choice (proper heroes [“dads”] are preferred as longterm partners, dark ones [“cads”] as short term mates) and what empirical studies of contemporary mate choice have demonstrated (Cashdan 1996; Kelly and Dunbar 2001). Similarly, Gottschall (2003) analysed a large corpus of folk tales from all around the world and demonstrated that their contents, both universally and locally within geographical regions, were in line with general predictions from evolutionary theory on patterns of altruism and sex differences in reproductive strategy and mate choice.

Many claim that Personal Ads are a form of fiction (and, indeed, they have been subjected to detailed stylistic analysis: e.g., Shalom 1997). If so, then they provide another clear example of the kinds of quantitative analyses that can be undertaken (see, among many other examples (Pawlowski and Dunbar 1999; Thiessen, Young and Burrough 1993; Waynforth and Dunbar 1995). The particular advantage of this form of literature is that it comes in neatly packaged units that can easily be quantified and counted. This makes it easy to test specific hypotheses with statistical rigor. Most analyses of Personal Ads have either counted the proportion of all ads in a sample that refer to particular categories of interest (traits offered by the advertiser or traits sought in a prospective partner) or have counted the number of words listed in the ad that refer to particular trait categories. Most of these have focused on evolutionarily-valent traits (age, physical attractiveness, wealth/status, commitment, fidelity, parenting and social skills). Studies from a variety of cultures have demonstrated close fits between the patterns of word use and expectations based on evolutionary theory in respect of sex differences in mate choice. In addition, however, many of these studies have been able to demonstrate quite subtle interplay between advertisers’ bids and what they have to offer in ways that fit nicely with expectations from optimality theory: those who have fewer of the traits that partners seek down-grade their demands on prospective partners in order to remain in the game (see, in particular, Pawlowski and Dunbar 1999; Waynforth and Dunbar 1995).

Ads (and, indeed, songs) lend themselves to such an approach precisely because they are discrete, compact units: it is easy to count the frequencies in different categories for quantitative analysis. I emphasise this here because, although quantification and the use of statistics is not widespread within the humanities (and, indeed, is often explicitly disapproved of on the grounds that it becomes an end in itself and distracts unnecessarily from the reader’s engagement with the text), its value should not be underestimated. I am not a supporter of numbers for the sake of numbers, because that is not the purpose for which statistical analysis was created. The aim is to test explicit well-formulated hypotheses in a way that is not susceptible to sleight-of-
hand, cheating or unintended obfuscation. We are not always as rigorous in our thinking as we sometimes like to assume, and statistics helps to keep us on the intellectual straight and narrow. The point is that lax protection of wrong hypotheses that we happen to be enamoured with at the time does neither the search for understanding nor the individual any good in the long run.

More importantly, perhaps, the use of statistics also helps us to cut through the complexity of real world phenomena to focus exactly on the issue at hand. The biological (and social) world is extraordinarily complex because many factors often influence a particular phenomenon, and all these are in their turn contextualised in a particular environment, and – with the best will in the world – the human mind is simply not capable of handling that level of complexity. The intellectual rigor demanded by quantitative statistical analysis helps us to manage that complexity, as well as holding our natural intellectual laziness at bay. It’s purpose is not to obscure by resort to technicality, but to clarify and it should be used in conjunction with clear hypotheses about why we think the phenomenon of interest works the way it does. If we cannot produce such an account, we cannot use statistics to test its veracity – but, then, nor can we pretend to provide an explanation for the phenomena we seek to understand.

THE COGNITIVE DEMANDS OF STORY-TELLING

An intuitive understanding of folk psychology and the evolutionary principles that motivate human behaviour is, clearly, a sine qua non for a story-teller. But a good story-teller needs to do more than just recount a story. He or she needs to do this in such a way that the audience can follow the twists and turns of the plot easily. And doing so at the limits of what the audience can cope with may distinguish good story-tellers from mediocre narrators. There is a cognitive demand created by the audience’s own limited abilities to process and parse the events in the story, and challenging and teasing the audience in this respect may heighten the latter’s sense of enjoyment. This problem seems to be especially acute when stories become more than just factual narratives. Once they involve the minds of the characters (something that Jaynes [1982] has argued only emerged in literature around 800 BC with the appearance of Homer’s Odyssey), things became much more demanding. This is because we find parsing the mental states of other individuals extremely taxing (Kinderman, Dunbar and Bentall 1998).

The ability to imagine the contents of another individual’s mind is known in the developmental psychology literature as theory of mind (alternatively, mindreading or mentalising). Children acquire this ability in a very characteristic transition at around age 4 years (see reviews in Whiten 1991). At this point, children can imag-
ine that another individual imagines something. Philosophers of mind refer to this state as second order intentionality. Intentionality is a reflexively hierarchical sequence of mind states that involve intention or belief (the kinds of states for which we use words like believe, intend, hope, want, suppose, know, expect, etc., which philosophers refer to collectively as intentional terms). When we imagine the mind states of other individuals, the reflexive hierarchy created is, in principle, infinite: I believe that you suppose that I intend that you understand that I want you to believe that I think ... and so on. In practice, however, the human mind is limited in the number of links of this kind that it can keep track of.

In two separate tests of subjects’ abilities to think their way through the mind states of different individuals in a brief story, we have shown that there appears to be an upper limit at about fifth order (I intend that you understand that I want you to believe that I think ...). [Note that, in the original KINDERMAN, DUNBAR and BENTALL (1998) study, we stated that the limit is at fourth order; subsequently, however, we realised that we had left out of the calculation the mind state of the subject, thus yielding a correct limit at fifth order: see STILLER and DUNBAR, submitted.]

That there is a cognitive limit on our ability to understand the mind states of other individuals imposes a natural limit on the number of characters that can appear simultaneously in any real or fictional account. When the audience ponders Shakespeare’s Othello, for example, they are obliged to work at fourth order intentional levels: I (the audience) believe that Iago intends that Othello supposes that Desdemona wants [to love someone else]. When Shakespeare puts the play on stage before us, he will, in critical scenes, have four individuals interacting, thus obliging us to work at fifth order level – the very limits to which most of us can cope. But notice that Shakespeare himself is being forced to work at one level of intentionality higher, because he must intend that we (the audience) believe that Iago intends ..., etc. And when he is putting the action on the stage with his typical cluster of four interacting characters, suddenly he is being pushed beyond the limits at which most normal adult humans can cope: with four characters’ mind states, plus that of the audience and his own, he is having to work at sixth order.

In effect, a successful story-teller has to be able to work at the very limits of normal adult competence in social cognition. The significance of this is perhaps best reflected in the contrast with the fact that, in everyday social life, we probably don’t work at much beyond third order most of the time. In part, of course, this is because we are ourselves engaged in the play: we are usually one of the characters on stage, thereby reducing the cognitive load by one order of intentionality. The exceptional nature of what is involved in story composition (as well as listening/reading) suggests that these higher order capacities are perhaps rather specialised functions.

This probably explains one curious fact about our literary lives that is implicitly understood, but rarely attracts comment: reading, understanding and enjoying stories
is an extremely widespread, if not universal, trait in humans, but composing them is surprisingly rare. The fact that writing novels is so difficult that only a few talented people can manage it attracts special approbation. We applaud skilled writers of stories, but we do not applaud good readers (I mean private readers here, of course, not the actor’s ability to read aloud). The need to be able to work at one or more orders of magnitude higher than the reader means that the story-teller has to be a rather unusual individual: they are among the very small proportion of individuals who can successfully cope with sixth and seventh order intentionality.

It is worth reminding ourselves in this context that these additional layers of intentionality do not come for free. There is some evidence to suggest that the orders of intentionality that a species can habitually aspire to is a function of the volume of its brain’s frontal lobe (essentially, the size of its computer). Hence, to add two additional levels onto what we need in everyday life means adding a substantial additional volume to our total brain size. Since brain tissue is extremely expensive to produce and maintain (Aiello and Wheeler 1995), this adds a very significant cost that we have to be able to bear. In practice, that cost is measured in terms of the additional foraging time incurred to obtain the additional nutrients as well as in the additional exposure to predation and the other risks of foraging. Brains do not come for free: they are one of the most expensive tissues in the body (Aiello and Wheeler 1995), and mammals do not evolve larger brains without very good reason.

TOWARDS A THEORY OF THE GOOD, THE BAD AND THE MERELY MEDIocre

I have argued here that story-telling, in all its myriad forms, is a vital part of human life, that it serves a crucial function in facilitating social bonding so as to ensure that the social groups in which we live do the job that they are intended to do for us. Story-telling helps to create a sense of community that counteracts the natural tendency for freeriding to be a temptation to everyone. I have suggested that the ability to compose and – as the audience – to understand stories is cognitively taxing. Not only do stories have to mirror the realities of everyday life (and, in particular, the deep motivations that underpin these) but they are cognitively taxing to compose because interesting stories (those that involve the minds of at least three characters) push the limit at which normal human adults can perform. Finally, I suggested that the fact that the writer has to work at one level higher than the reader may explain why the ability to compose/write stories is very much rarer than the ability to read/understand them.

This last point raises an obvious question: is it the case that good writers can be distinguished from poor ones by either their intuitive understanding of the principles
of behavioural ecology or their social cognitive competences (or both)? An obvious hypothesis is that a task analysis of the writings of authors who stand the test of time (Shakespeare, Austen, Dickens, Lawrence) would yield higher orders of intentionality than the writings of authors who did not (such as Warwick Deeping or Francis Brett Young, who were widely read in the 1920s and 1930s and but are virtually unknown now). Of course, there are many factors besides literary quality that influence an individual author’s survival into future generations, not least of which is the fact that his stories and characters are locked into a particular period. The point here is a statistical one: we should be able to show that, on average, successful authors had a better intuitive understanding not just of human behaviour but of the evolutionary principles that drive human behaviour and/or were working at higher levels of intentionality than authors who did not survive so well.

On the latter point, of course, it is important to bear in mind that it is not the absolute level of intentionality at which the author works, but rather his/her ability to work at the reader’s limits, to challenge and tax the reader. When authors go beyond the readers’ capacities to manage the mind states involved in the action, no amount of authorial competence will rescue the story. Indeed, we ought to be able to show that when authors do try to work at levels beyond the competences of their audiences, they inevitably produce novels or plays that audiences consider difficult. Would a task analysis of Titus Andronicus (widely considered the most difficult of Shakespeare’s plays to perform as well as for audiences to understand) or Joyce’s Ulysses reveal that these are pitched at a level beyond what the average reader can cope with? Is the reason why postmodern novels are considered to be particularly difficult reads due to the fact that the author’s understanding of evolutionary principles (or even just everyday human behaviour) is poor or that they are trying to work at a level beyond with which the average reader can cope?

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