Survival of the *wittiest* (not *friendliest*): The art and science of human evolution

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Research on language evolution has largely neglected the artistic dimension of language, including eloquence and wittiness, and yet the fitness in humans has been found to be correlated with linguistic prowess, and human mate choice even today is often influenced by displays of cognitive abilities through the creatives use of language. My argument is that selection for quick-wittedness ("using *words* in a clever and funny way"), *specific to language and unique to humans*, needs to be added to the complex picture of human evolution, relevant from the earliest stages of language. Wittiness is that kind of trait which allows competition (by 'outwitting' others) while at the same time favoring "friendliness" in the sense that it provides an excellent platform for replacing physical aggression with verbal behavior. There are several previous findings, both theoretical and experimental, that have paved the way toward the view of human evolution as the "survival of the wittiest," offering better explanatory power than the "survival of the friendliest."

1. Survival of the fittest?

Much of linguistic research on language evolution has focused on human analytical abilities to form sentences with which to express (complex) propositions and thoughts. While this is certainly an important function of language(s), this is not the only function, and cannot be expected to have been a major function in the earliest stages of language. Understanding the motivation behind evolving language at these earliest stages is at the heart of understanding how language took off, and how we humans as a species evolved. While some approaches deny the role of sexual selection in the evolution of language, or the possibility of gradual, adaptive evolution (e.g. Berwick and Chomsky 2016), several others have found it advantageous to invoke adaptation and sexual selection for specifically language skills (e.g. Miller 2000; Franks and Rigby 2005; Locke 2009; Progovac and Locke 2009; Progovac 2015). Here I show that some of these latter approaches have paved the way toward a scenario favoring

the "survival of the wittiest," in these earliest steps, but also beyond. But what about the survival of the fittest, or the survival of the friendliest?

Charles Darwin's work (e.g. 1859, 1872, 1874) has been associated with the "survival of the fittest," which is often (inaccurately) interpreted to be limited to the survival of the strongest, or the healthiest, physically speaking, perhaps fittest in the modern (gym) sense of the word "fitness." But "fitness" in the biological sense is a much broader concept, in that it does not single out any one specific trait. Instead, it can refer to any trait which happens to provide a better survival rate in the immediate environment, whatever that may be in that specific time or place, such as the camouflage adaptations of many species, which simply adapt to the color or shape of their environment. Having said that, adaptation in the physical sense of fitness (stronger, healthier) has certainly played an important role in the evolution of humans (and other species), and continues to do so, but see below regarding reduced physical aggression in humans.

2. **Survival of the friendliest?**

As a seeming counterproposal to supposedly ruthless physical competition, "survival of the friendliest" has recently garnered a lot of support, i.e. the view that *Homo sapiens* evolved via selection for prosociality, associated with a reduction in reactive aggression (e.g. Hare, 2017; Hare and Woods, 2020). It would appear at first sight that this is a more benevolent view of the human species, considering that it now does not seem to matter who is strong and ruthless, but who is friendly (see e.g. the *Washington Post* interview with Brian Hare (Cimons 2020), titled "'Friendliest,' not fittest, is key to evolutionary survival, scientists argue in book," implying (wrongly) that the two views are distinct (see the discussion below). However, in the scenario of the selection for "friendliness," what one might consider as "friendly" types had to have competed (ruthlessly) against "unfriendly" types. In fact, as discussed in e.g. Wrangham (2021), this would have included teaming up to kill alpha males, not a particularly friendly gesture. In the interview mentioned above, Brian Hare is quoted as saying: "We are the friendliest human species that ever evolved, which has allowed us to outcompete other human species that are now extinct … When [the mechanism] is turned on, it allows us to win. We win by cooperation and teamwork." For all our friendliness, we seem quite content with driving other species/populations to extinction, and we seem quite preoccupied with "winning" (this short quote has the word "win" in it twice).

There is no doubt that the ability to form alliances (to defeat common enemies) can be adaptive, but the term "friendliness" does not seem particularly

suited for this trait. In this respect, Wrangham refers to this trait as "groupishness," characterizable as the ability to form groups and to cooperate *within* those groups, often in order to be stronger together, and better able to outcompete *other* groups or individuals. In this sense, the proposal of the survival of the friendliest (i.e. the most groupish) is not distinct from the original notion of the survival of the fittest, and it certainly does not do away with human ruthlessness. Just like physical strength, groupishness/friendliness may also be subject to sexual selection (e.g. Hare et al. 2012; Gleeson, 2018). But, crucially, and most relevant for this paper, these two aspects, selection for physical fitness, and selection for friendliness/groupishness, while both relevant for human evolution to some extent, do not begin to capture the essence of what it means to be human, specifically in relation to language. We may like physical strength in our mates, and we may like their friendly demeanor, but these are not necessarily traits that have to do with language directly, and neither are these traits unique to humans (close to home, consider e.g. bonobos, as discussed in Hare 2017). There is thus a need to supplement these general approaches to human evolution with the ones that directly and causally implicate human language.

3. **Survival of the wittiest**

My argument is that selection for quick-wittedness, specifically demonstrated by language and unique to humans, was relevant from the earliest stages of language evolution. Being witty is certainly a rather desirable trait in humans even today, a form of art we are not all equally good at, even though we all may strive to be. Wit and wittiness are characterizable as showing quick and inventive *verbal* humor, using *words* in a clever and funny way (Cambridge Dictionary; Merriam Webster Dictionary). Wittiness specifically refers to one's agility with words, including the ability to *outwit* others, i.e. to outcompete them with words. Regrettably, perhaps, being witty cannot be equated with being intelligent or wise, in the sense of making the best decisions, or solving problems in an optimal way. The latter skills are certainly adaptive, but may be harder to gauge in the context of sexual selection, as they take much longer to evaluate. Quick-wittedness is immediately there to observe and admire. It may seem like a shallow skill, like the colorful, imaginative structures built by bower birds during the mating season (Uy 2001), but it is a form of art that appeals to some deep aesthetic and emotional aspect of human existence. If we indeed come from a series of generations that sexually selected for the art (and beauty) of quick-wittedness, then we are genetically predisposed to be attracted to it, frivolous or not.

My proposal that the "survival of the wittiest" has been one of the crucial drivers of human evolution is *not* an alternative to Darwin's notion of the survival

of the fittest, but rather just a specific rendering of this approach when applied specifically to language evolution in humans. The argument I defend here is that, since the emergence of language, and to this day, the fitness in humans has been highly correlated with their linguistic eloquence, including clever and humorous uses of language. Human mate choice even today is often influenced by displays of cognitive abilities, through the creative use of language (e.g. Miller 2000; Franks and Rigby 2005, 208). Yes, to a large extent, human race can be seen as smart and friendly, and yet, this cannot be the whole picture. We elect politicians to govern entire countries based on how witty and skillful they are at debates, and not based on how strong or friendly they are, or indeed how good they are at solving problems. We admire and replay the memorable snippets of witty exchanges at those debates. The most eloquent speakers tend to have the highest status, even in modern societies (e.g. Locke 2009). Competition with language continues to this day, whether in more subtle ways, or through outright verbal dueling attested across cultures around the world (Locke and Bogin 2006; Locke 2009). Darwin's (1874) view was that language evolved gradually through sexual selection, and for him, language is "half art, half instinct" (634), but this creative dimension has largely been neglected in the research on language evolution.

4. **The early steps**

But how is all this relevant for the earliest steps in language evolution, when human unique cognitive abilities just started to be honed? There are proposals in the literature to the effect that some of the earliest forms of grammar, such as the first verb-noun combinations, required novelty, imagination, and quick-wittedness, in order to be useful and entertaining, and to catch an audience. In addition to many other useful functions (see below), according to the proposal in Progovac and Locke (2009) and Progovac (2015, 2016), coining compounds akin to the ones illustrated below (proxies of the earliest grammars) would have been a highly adaptive way to compete for status and sex in ancient times, when words were few, and grammars rudimentary (1 is from English, mostly taken from Weekley 1916; 2 is from Serbian, mostly taken from Mihajlović, 1992).[1]

(1) kill-joy, turn-skin (traitor), hunch-back, wag-tail, tattle-tale, scatter-brain, cut-throat, mar-wood (bad carpenter), busy-body, cry-baby, break-back, catch-fly (plant), cut-finger (plant), tumble-weed, fill-belly (glutton), lick-spit,

[1] Importantly, entrenching the abilities to coin such compositions in populations would have provided an excellent scaffolding for evolving full sentences, which feature exactly nouns and verbs (see Progovac (2015, 2016) for a reconstruction of the earliest grammars based on syntactic theory).

pinch-back (miser), shuffle-wing (bird), skin-flint (miser), spit-fire, swish-tail (bird), rattle-snake, stink-bug, tangle-foot (whiskey), tumble-dung (insect), crake-bone (crack-bone), shave-tail (shove-tail), fuck-ass, fuck-head, shit-ass, shit-head

(2) cepi-dlaka 'split-hair' (hair-splitter); guli-koža 'peel-skin' (who rips you off); vrti-guz 'spin-butt' (restless person, fidget); muti-voda 'muddy-water' (trouble-maker); jebi-vetar 'fuck-wind' (charlatan); vuci-guz 'drag-butt' (slow-moving person); poj-kurić 'sing-dick' (womanizer); kosi-noga 'skew-leg' (person who limps); podvi-rep 'fold-tail' (who is crestfallen); deri-muda 'rip-balls' (place name, a steep hill); kapi-kur 'drip-dick' (name of a slow water spring); plači-guz 'cry-butt' (crybaby)

It would have constituted an unprecedented cognitive leap to become fluent in this strategy of combining, on the spot, two very basic, concrete words in order to express a completely novel, abstract concept, often exhibiting stunning feats of metaphorical creativity. Not everybody was good at it at the time, perhaps only a few were, and those would have been the ones to pass on their genes through many generations. This initial stage of proto-grammar would have unmasked, and thus opened for selection, these otherwise latent cognitive abilities of our ancestors.[2] The successful use of such two-slot combinations would have enhanced one's relative status first by derogating existing rivals and placing prospective rivals on notice, and second by demonstrating verbal skill and quick-wittedness (Progovac and Locke 2009). These are exactly the two types of sexual selection scenarios identified as early as in Darwin (1874): aggressive rivalry (intrasexual selection) and mate choice (intersexual selection), both also proving to be relevant in the experiment by Franks and Rigby (2005), which found that males increase their creativity with language both in the presence of attractive females and in the presence of male competitors. The compounds illustrated above are also typically humorous, invoking concrete (body) images (e.g. *scatter-brain*; *pinch-back* for a miser; *spin-butt* for a restless person; *rip-balls* for a steep hill). Humor itself is subject to sexual selection (e.g. Vrticka et al. 2013).

It is notable that the proto-grammatical compounds (1-2), serving as approximations of the earliest grammars, are not only humorous and imageable,

[2] In this respect, and in the interest of highlighting continuity, it has been reported that other primates are in principle capable of rudimentary two-slot combinations, such as *hide peanut* and *hide Kanzi* (Greenfield and Savage-Rumbaugh 1990: 161, regarding bonobo Kanzi). According to Patterson and Gordon (1993), gorilla Koko was not only capable of producing novel two-slot metaphorical combinations (e.g. 'cookie rock,' for a stale bun), but also of playful insult.

but also tend to express (playful) insult when referring to humans, across different cultures (Progovac and Locke 2009).[3] Paradoxically, perhaps, it is exactly in this respect that the proposal of the survival-of-the-wittiest can be cross-fertilized with the survival-of-the-friendliest proposal. As proposed in Progovac and Benítez-Burraco (2019), the gradual emergence of verbal means of competition/aggression (which certainly includes wittiness) was engaged in a feedback loop with the genetic forces working toward the reduction in physical aggression, associated with self-domestication (see also Benítez-Burraco and Progovac 2021). By affording a more adaptive (less violent) way to compete for status and sex, these items of verbal competition would have reinforced the effects of self-domestication, by providing a means for gradually replacing reactive physical aggression with verbal competition. It would have also provided a means for reducing cortisol levels through the use of verbal humor. But for this to have worked, the witty in these early stages needed to be so expressive, so creative with what little language and grammar there was at that time, to be able to outdo the eons deep exchanges and displays of physical strength. Quite an astonishing cognitive feat, and not a trivial reason at all for language to take root in populations, and to gradually grow and thrive. Crucially, when these simple verb-noun combinations started to be entrenched, they would have been used and useful for many other functions as well. In addition to naming people (in imageable, often pejorative ways), they would have also been used to name plants (*tumble-weed*) and animals (*rattle-snake*), as well as to issue commands (*Kill snake! Run Kanzi!*) or to make observations (e.g. *Snake rattle. Baby cry.*)

This approach is not (meant to be) in conflict with approaches that give primacy to pragmaticsin language evolution, rather than grammar, emphasizing continuity with other species in this respect (see e.g. Arnold & Zuberbühler, 2013; Seyfarth & Cheney, 2017; Bar-On 2021). This approach in fact reveals continuity, both when it comes to specific communicative uses of early forms of language (non-propositional) and when it comesto the earliest forms of grammar, consistent with the abilities of other primates (see footnote 2; also Progovac, 2017, for a detailed discussion). But in addition to relying on continuity, this approach also provides a point of departure, a beginning of what will turn out to be uniquely human traits. This proposal provides a fertile ground for a wide variety of hypotheses to be tested, with a goal of understanding how and why (sexual) selection, specifically for agility with language, has been shaping human nature.

[3] It seems that we are still in a proto-linguistic mindset when using this kind of imageable, derogatory language, which prefers to occur in proto-linguistic frames (for reasons and findings in this respect, see Progovac et al.'s 2018 fMRI study).

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