Internet Media Screens as Evil

The psychological and social effects of this moral ambiguity and the complications of good and evil on all screens is uncertain. Video games, for example, do not seem to breed violence according to research and counter to popular opinion. But there is increasing discussion about screen encounters that offer the contradictory experience of greater connection, with other electronic users, and the simultaneous experience of physical, emotional, and social isolation. Despite the internet's ability to connect the world, users are feeling more and more alone.

Consequently, researchers are examining the effects of the internet on humans and human behavior. Nicholas Carr's *What the Internet is Doing to Our Brains* argues that our computer usage rewires our brains in negative ways (2011). Others discuss the possibility that internet use can lead to addiction. Cash et al. claim that it is an addiction and is characterized by excessive use outside work, mood changes, the need for "more or new" games, withdrawal symptoms, and "diminishing social life" (2012). Even those behind social media admit that they, like Dr. Frankenstein, may have created a monster. Series such as *Silicon Valley* and the film *The Social Network* (2010) interrogate social media and screen usage through the screens themselves.

In terms of socialization, Twnege and Campbell attribute internet and social media platforms the causes of what they call a "narcissism epidemic" (2010). Given the descriptions of this behavior and the context of this entry, the characteristics of narcissism, an overdeveloped sense of self to the detriment of others, mimics the behavior of one of evil's greatest celebrities, Satan. And, given our knowledge of on-screen evil, we all know where that got us. Will screens be contemporary culture's serpent in the garden? To be continued.

Cross-References

► Television Heroes

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Evolution of Heroism

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Synonyms

Advancement; Development; Growth; Progression; Transformation

Definition

Evolutionary processes by which humans acquired a heritable propensity to act in ways that (1) entail a meaningful risk of serious injury or death and (2) increase the likelihood that others will be spared injury and/or death.

Introduction

Heroism, the propensity to risk one's life to benefit others, has likely evolved via multilevel selection with the support of sexual selection and cultural mechanisms that promote and reward heroic acts. From an evolutionary perspective, heroism is a subcategory of altruism, a topic that has inspired substantial theorizing and research. Heroism stands out from the broader array of

evolutionarily altruistic acts by the risk of serious physical harm (including death) entailed by heroic actions. After identifying the cost–benefit requirements for an act to qualify as heroic in evolutionary terms, we explain how the outcomes of such acts can result in a net benefit at the collective level. We then review theories and evidence for how a trait that increases an individual's chances of dying prematurely could be promoted by evolutionary mechanisms.

War (lethal intergroup violence) is likely a critical context for the evolution of heroism. The high stakes of war for the survival of human groups help explain why societies promote and reward wartime heroism so prominently and also why the prototypical hero is male. Scholarship on war heroism is also relevant to understanding the human response to natural disasters and other smaller-scale threats to human life.

The Cost–Benefit Inequalities of Evolutionary Altruism and Heroism

As Sober (1988) explains, when scholars of evolution define altruism, they focus on the consequences (ultimate impact) of a person's action on their own and others' fitness, not on the proximal psychological motives that might inspire altruistic acts. What Sober calls "vernacular altruism" focuses on motives to benefit others without expectation of personal benefit, and benefits are broadly defined to include anything that is helpful to the target. Altruistic intentions (in the vernacular sense) are also not comparative; if everyone in a population donates to a disaster fund, for example, that does not negate the altruism of any individual. Evolutionary altruism, in contrast, looks at costs and benefits to self and others in the currency of relative reproductive fitness and the perpetuation of one's genes in future generations. Motives do not count. Acts with no plausible impact on reproductive fitness do not count.

Evolutionary altruism involves "the donation of reproductive benefits" (Sober 1988, 79) to others. From this perspective, for example, serving as a surrogate mother for a baby conceived from the sperm and eggs of unrelated others is evolutionary altruism that benefits the genetic parents while the surrogate pays the opportunity costs of not bearing her own biological child instead. Any fees paid by the biological parents are irrelevant unless they are used to improve the chances of the surrogate mother's own biological children reaching adulthood and producing grandchildren in turn. More broadly, *generalized altruism* (Trivers 1971) includes acts that benefit other group members within a group-living species such as humans.

For scholars, the primary evolutionary puzzle of altruism is figuring out how an individual propensity to act in ways that would (on average) diminish individual fitness could be retained in a population if others acted in less altruistic and more selfish ways. Natural selection operates on a comparative basis, selecting for traits that are unevenly expressed in a population and that convey a relative advantage or disadvantage for survival and reproduction.

Applied to heroism, the immediate risk of a heroic act to the actor is serious injury or death. In an era before sperm and egg banks, death precludes the production of more children. Prototypical heroic acts "donate benefits" by increasing the likelihood of the beneficiaries surviving and reproducing successfully while decreasing the likelihood that the hero will do the same. Because the currency of evolution is reproductive fitness, an act is not (evolutionarily) heroic if the direct beneficiary is one's own children or grandchildren. Darwin makes this distinction in the following two examples. First, he describes how a "young and timid mother urged by the maternal instinct will, without a moment's hesitation, run the greatest danger for her infant, but not for a mere fellow-creature" (1871, 83). In this case, the mother is acting in direct service of her own reproductive fitness. The contrasting example is when "a man, or even boy, who never before risked his life for another, . . . has, disregarding the instinct of self-preservation, instantaneously plunged into a torrent to save a drowning fellow-creature" (83).

In developing and testing ideas about how a propensity for heroic action evolved, scholars have attended to multiple mechanisms of

selection. Classical natural selection – also called Darwinian selection (although Darwin also described other mechanisms) – focuses on individual-level traits and actions. The neo-Darwinian synthesis focuses on the level of genes. Sexual selection (starting with Darwin) focuses on dynamics within and between males and females in sexually reproducing species. Multilevel selection focuses on the interplay between selection among individuals within groups and selection between groups, and cultural group selection considers how cultures adjust the calculus of risks and rewards and drive cultural inheritance as opposed to biological inheritance at the genetic level. Mechanisms at all levels have shaped the nature and distribution of traits in our species, so an explanation that focuses on one mechanism does not preclude the operation of different mechanisms to promote the emergence or retention of a propensity to act heroically.

The most well-developed account explaining the emergence and persistence of this trait is multilevel selection, so we address that first. We then discuss sexual selection and cultural group selection.

Multilevel Selection for Heroic Propensities

Darwin set out the general conditions for multilevel selection in the context of intergroup conflict. He proposed that "When two tribes of primeval man ... came into competition, if the one tribe included ... a greater number of courageous, sympathetic, and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would without doubt succeed best and conquer the other.... A tribe possessing the above qualities in a high degree would spread and be victorious over other tribes" (1871, 156). Success in war thus rewards groups whose members tend to act heroically, even though this threatens individual-level fitness, as Darwin also explained: "The bravest men, who were always willing to come to the front in war, and who freely risked their lives for others, would on an average perish in larger number than other men. Therefore, it seems scarcely possible ... that the number of men gifted with such virtues ... could be increased through natural selection, that is, by the survival of the fittest" (1871, 157).

Selection pressures at the individual and group levels are thus working at cross purposes. For multilevel selection to promote heroism, the pressures at the intergroup level must therefore outweigh the selection pressure against heroism at the individual level. Genetic information about contemporary hunter–gatherer subpopulations and archeological evidence of mortality from ancestral war indicates that between-group genetic differentiation and intergroup selection pressures could have been adequate for multilevel selection to favor traits that helped groups prevail, as Darwin envisioned (Bowles 2006).

The joint operation of individual- and group-level selection has been tested using mathematical and computational models (see Fletcher and Doebeli 2009, Smirnov et al. 2007 for examples) that show how a propensity to render "suicidal aid" to other group members can evolve. Key elements in the process include conditionality and assortment. *Conditionality* highlights the distinction between a genotypic propensity to act in a certain way and the phenotypic activation of this propensity that results in a heroic act. In other words, people who are genetically predisposed to heroism will only risk their lives if the situation calls for it, and not otherwise. Falling on a live grenade to save others is a phenotypic wartime act of suicidal aid, but it is triggered only by the arrival of a live grenade. Many (and in peacetime, likely most) of the heroically inclined will not pay the ultimate price because they would not encounter a situation that warrants it.

Assortment is the tendency of those more prone to behave altruistically to selectively cluster together and shun those who are disinclined to cooperate. Effective assortment means that when a live grenade arrives in the trench, whichever random soldier is closest to the grenade has a non-zero probability of rendering suicidal aid and saving the others. If a live grenade arrives among a group of soldiers who all lack this propensity, however, they are all more likely to die or

be seriously injured. Hence, groups whose warriors are, on average, more heroically inclined will more often prevail in war. This scenario illustrates how, though an inclination toward heroism can (probabilistically) be individually lethal, it can save the lives of other similarly inclined group members.

Sexual Selection

Sexual selection occurs when a sex-linked trait enhances the likelihood of successful reproduction. Traits attributed to sexual selection commonly fall into two broad categories: assets used to establish dominance in same-sex contests within species and costly ornaments that make one particularly attractive to the other sex. Although weapons and ornaments may be selected for in either males or females, they tend to predominate in males when females are pickier in their choice of mates, as is true of humans. Traits that make individuals more vulnerable to predation – such as showy plumage or loud calling – also typically appear in males, not females, if offspring are critically dependent on their mothers, which is true for human infants. For male adults, the good condition of their "risky" ornament is a *costly signal* that demonstrates genetic quality, making them more attractive as mates. In humans, moral qualities such as heroism can be promoted via sexual selection (Miller 2007).

Anthropological and historical data indicate that acts of bravery do make men attractive to women as mates and experiments in which women rate the sexual attractiveness of men with different traits (see, for example, Rusch et al. 2015 and Kelly and Dunbar 2001) also find that women rate risk-prone brave men and war heroes to be more sexually attractive than men who are otherwise altruistic but not inclined to physical bravery. Women whose children are fathered by brave men may also benefit via better protection from predators – including other dangerous men – and this directly serves the individual fitness of both parents, just like a mother's (not evolutionarily heroic) bravery in "running the greatest danger for her infant" does.

For brave men, enhanced mating opportunities can help balance out the scales a bit in the cost–benefit accounting, as those who survive their own risky acts have an improved chance of passing on their genes. While this is unlikely to fully counter the individual hazards of heroism in service to the group, it may play a supportive role in helping a population retain this trait.

Cultural Group Selection and Reproductive Leveling

The relative pressure of selection in *favor* of a trait between groups and selection *against* a trait within groups depends in part on the variability both between and within groups. If we focus on the genetic level, genetic differentiation is what matters. Selection pressures, however, operate on phenotypic differences – actual behavior. Phenotypic behavior can be similar even when genetically linked propensities differ, and it can be different among those with the same genetically linked propensity (as explained by conditionality). Human culture shapes behavior directly and provides a separate mechanism of inheritance via social learning. Culture's power to shape behavior can engineer conformity with desirable social norms. By increasing behavioral (phenotypic) differences between groups, this enhances cultural group selection (Henrich 2004). When cultural pressures reduce within-group differences relevant to individual fitness, this is called *reproductive leveling* (Bowles 2006).

In our wartime example, the similarity in heroic propensity among one group of soldiers and the contrasting tendency to flee from danger among members of an enemy group is likely due primarily to culture and training, not genetics. Evidence for reproductive leveling related to heroism is the widespread custom of initiation rites for boys that promote physical courage in the face of painful ordeals as a condition for entering into full manhood. The frequency of war that a society experiences correlates with the severity of initiation rites, which is consistent with the value of

heroism for the group's survival in war (Sosis et al. 2007). In contemporary societies that lack formal initiation rites, military boot camp serves this purpose. The result is that groups of warriors prepared in this way are more likely to behave bravely regardless of whether they are naturally more fearless. Via the cultural engineering of reproductive leveling, they have learned to counteract the natural (and individually completely sensible) impulse to abandon their foolishly heroic comrades and simply run away.

Conclusion: The Cold Equations

Myths, movies, and literature, acting in the service of reproductive leveling, help persuade us that heroism is a wonderful trait. At the same time, exhorting valued friends and colleagues to "not be a hero" is a sensible way to keep enjoying their company. We benefit collectively from the willingness of group members to perform physically risky heroic acts, and we also value the individual lives of people we care about. There is no contradiction here. Instead, it is a tacit recognition of the "cold equations" that govern evolution, which generally operates to sweep traits not conducive to individual survival and reproduction out of the population. To retain an individually risky trait that also benefits the larger collective, the cost–benefit accounting needs to work out. In human societies, culture, love, and war have likely all played a part in keeping the pressures balanced to preserve the likelihood that, when dire situations call for them, heroes will answer the call.

Cross-References

- ▶ Biology of Heroism
- ▶ Bravery
- ▶ Common Good
- ▶ Functions of Heroism
- ▶ Gender and Heroism
- ▶ Prosocial Behavior
- ▶ Sacrifice
- ▶ War Heroes

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Evolution of Peacefulness

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Definition

The evolution of peacefulness refers to evolutionary processes contributing to the development of human empathy, prosociality, altruism, and in-group cooperation.

The sophisticated social structure of modern humans creates a richly layered cultural milieu in