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Adaptations for Exploitation

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Human groups contain reproductively relevant resources that differ greatly in their ease of accessibility. The authors advance a conceptual framework for the study of 2 classes of adaptations that have been virtually unexplored: (a) adaptations for exploitation designed to expropriate the resources of others through deception, manipulation, coercion, intimidation, terrorization, and force and (b) antiexploitation adaptations that evolved to prevent one from becoming a victim of exploitation. As soon as adaptations for exploitation evolved, they would immediately select for coevolved antiexploitation defenses—adaptations in target individuals, their kin, and their social allies designed to prevent their becoming a victim of exploitation. Antiexploitation defenses, in turn, created satellite adaptive problems for those pursuing a strategy of exploitation. Selection would favor the evolution of anticipatory and in situ solutions designed to circumvent the victim's defenses and minimize the costs of pursuing an exploitative strategy. Adaptations for exploitation have design features sensitive to the group dynamics in which they are deployed, including status hierarchies, social reputation, and the preferential selection of out-group victims.

Keywords: evolutionary psychology, exploitation, sexual exploitability, victimization, coevolution

There exist three fundamental classes of strategies for acquiring reproductively relevant resources. The first may be called *individual resource acquisition strategies,* in which an organism acquires resources through its own efforts. Fashioning tools, gathering berries, solo hunting, or collecting materials to build a shelter are examples of individual resource acquisition strategies. Optimal foraging theory has yielded insight into some aspects of individual resource acquisition strategies (MacArthur & Pianka, 1966). The second class consists of *cooperative resource acquisition strategies*, in which two or more individuals—dyads or coalitions—work together to acquire resources. Extensive work under the topics of gains in trade, social exchange, reciprocal altruism, and coalition formation exemplifies this second strategy (e.g., Axelrod & Hamilton, 1981; Cosmides & Tooby, 2005; Tooby, Cosmides, & Pri ce, 2006; Trivers, 1971).

A third fundamental class of strategies is to expropriate the resources of others through exploitation—*exploitative resource acquisition strategies*. This class of strategies ranges from mild, such as failing to reciprocate a minor favor in a social exchange, to extreme, such as coalitional warfare to expropriate all of an opposing group's reproductively relevant assets. Some theoretical and empirical work has explored the conditions under which individuals cheat in social exchange or free ride on group resources, but most has focused on adaptations for detecting and punishing cheaters and free riders (e.g., Cosmides & Tooby, 2005; Fehr, Fischbacher, & Gachter, 2002; Price, Cosmides, & Tooby, 2002). Astonishingly little research has focused on adaptations that are designed to pursue strategies of cheating and free riding. Moreover, cheating and free riding represent just two strategies from a broader class of exploitation strategies. Little work has been devoted to exploring the richer array of strategies

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by which individuals expropriate resources through deception, manipulation, coercion, intimidation, terrorization, or force. All exploitation strategies share the defining feature of gaining a reproductively relevant resource for the exploiter while simultaneously depriving exploited victims of reproductively relevant resources. Our goal in this article is to describe some plausible candidates for adaptations for exploitation, present a conceptual framework for exploring some of their major design features, and highlight how they unfold in the context of group dynamics. This requires introducing novel terms for concepts that are not represented in the literature, starting with the concept of *exploitability*.

We start with two nonhuman animal examples to highlight the point that adaptations for exploitation are regions in successful "design space" for all or nearly all social species, and go back deep in evolutionary time. Cheetahs on the Serengeti prey on herds of gazelle. These predators face a critical adaptive problem—selecting one from the herd to attack. Cheetahs choose those that are in the poorest physical condition—those that are small, weak, or in ill health and thus less likely to outrun them (FitzGibbon & Fanshawe, 1988). Cheetahs have evolved adaptations for prey selection specially designed to identify gazelles that display cues to *catchability*.

White-faced capuchin monkeys also prey on other species, typically the pups of coatis (Perry & Rose, 1994). Food sharing sometimes occurs following predation, particularly between a female and her offspring. Theft of the carcass is another strategy capuchins sometimes use—stealing the meat initially owned by another monkey. Theft of food and other resources from conspecifics has been observed among a variety of primate species, including capuchins, bonobos, chimpanzees, and humans (de Waal, 1989, 1992; Kanazawa & Still, 2000). Capuchin meat thieves do not choose their victims randomly. Rank differential is a key predictor; victims are almost invariably lower in dominance rank than the thief. Capuchin monkeys selectively target muggable victims—those whom they can menace, by virtue of their higher rank. These findings suggest that adaptations to detect how exploitable conspecifics are often unfold not just dyadically, but rather in the larger context of group dynamics, in this case the dominance hierarchy.

Just as gazelles differ in their ease of catchability and capuchins in their *muggability*, humans differ in exploitability—the ease with which their reproductively relevant resources can be expropriated through deception, manipulation, coercion, intimidation, or violence. An excellent example comes from empirical research on *muggability* (Grayson & Stein, 1981). Researchers videotaped 60 different individuals as they walked down the same block of a street in New York City. These tapes were then shown to 53 prison inmates convicted of violent assault. Inmates showed strong consensus about which individuals they would choose as victims. Those chosen as potential victims tended to move in an uncoordinated manner, with a stride that was too short or too long for their height. Nonvictims, in contrast, displayed a more coordinated walk, a normal stride, with foot movement and shifts of body weight showing synchrony. The muggable victims, in short, emitted nonverbal cues that indicated ease of victimization.

Another study focused on cues linked with choosing victims for sexual exploitation, such as being inappropriately touched in public in a sexual manner (Sakaguchi & Hasegawa, 2006). The researchers created short video clips of women walking and showed these to men attending the University of Tokyo. They obtained personality data on the female walkers and their reports about how frequently they had been inappropriately sexually touched in public in the past. Men displayed strong consensus about which women they would choose as potential victims for sexual exploitation. Nonverbal cues of chosen victims included walking slowly and having a short stride length. Women chosen as potential victims also tended to score high on the personality trait of neuroticism, low on extraversion, and high on shyness. Finally, Sakaguchi and Hasegawa (2006) found some correspondence between likelihood of being chosen as potential targets of sexual advances by the men and the women's self-reported frequency of having been sexually approached in their lives.

Physically attractive women were also more often chosen as the targets of unwanted sexual advances than women who were less physically attractive. Physical attractiveness, as a powerful

signal of female fertility universally valued by men (Buss, 1989), represents a cue to the magnitude of benefits to be gained from successful sexual exploitation rather than a cue to the ease of exploitability. Physically attractive women are targeted as victims not because they are easier to sexually exploit, but rather because the historical benefits of choosing fertile victims would have been higher than those of choosing alternative victims.

In sum, evolved decision rules about whether to pursue a exploitative strategy should be sensitive to inputs about (a) the ease of exploitation (in this case, cues to sexual exploitability), (b) the magnitude of benefit to be gained by exploitation (in this case, the fertility of the victim), (c) the costs associated with pursuing a exploitative strategy (in this case, a strategy of sexual exploitation), and (d) the availability and comparative cost–benefit calculus of pursuing an exploitative versus an individual or cooperative resource acquisition strategy (in this case, a strategy of honest courtship or use of a cooperative "wing man" to aid in mate attraction).

Another human example of exploitability emerges from homicide adaptation theory, which proposes that humans have evolved adaptations to kill other humans as one strategy (among several) for solving key problems of survival and reproduction (Buss, 2005; Duntley, 2005; Duntley & Buss, 2005). Killing is one strategy men have historically used to acquire a rival's food, territory, and even mates (Buss, 2005; Chagnon, 1983; Keeley, 1996). Potential victims, however, differ in *killability*. Like gazelles, some victims are stronger, faster, and in better condition than others. Some have powerful coalitions or kin; others have weak or absent coalitions and lack kin protection, a factor shown to be important in moderating spousal violence (Figueredo, 1995) by providing an individual difference cue to *abusability*. Selection would favor adaptations in potential killers to choose victims high on killability.

These examples highlight five key points. First, in addition to evolved strategies for individual and cooperative resource acquisition, humans, like many other species, have evolved an array of exploitation strategies that are designed to expropriate the resources of others through force, deception, intimidation, and coercion, most of which have remained entirely unstudied by scientists. Second, individuals differ in their exploitability cues—observable signs linked with the likelihood of being victimized, be it through a strategy of cheating, mugging, sexual assault, predation, or murder.

Third, decisions about whether to pursue an exploitative strategy should be a function of evolved algorithms that are sensitive to at least four dimensions—exploitability cues, the on-average benefits of exploitation if successful, the costs of pursuing an exploitative strategy, and the availability and comparative costs and benefits of pursuing exploitative versus individual or cooperative resource acquisition strategies.

Fourth, there exists overlap in the cues associated with becoming a victim of different forms of exploitation (e.g., mugging, sexual victimization, or murder), such as the ease with which individuals can be physically overpowered. Dimensions of group dynamics such as the strength or weakness of coalitional allies, presence or absence of close kin in proximity, and position within the group's status hierarchy also provide exploitability cues—cues that serve as inputs to decision rules about whether to pursue a strategy of exploitation.

Fifth, despite some shared exploitability cues, it is reasonable to propose that others differ in some respects across exploitation strategies. A man who relaxed the intensity of his mate guarding, for example, might provide a good cue to *cuckoldability* (e.g., his wife's securing superior genes through an affair partner, depriving him of a valuable reproductive opportunity), but this cuckoldability cue would not necessarily make him more muggable (see Table 1).

Antiexploitation Defenses

As soon as strategies for exploitation evolved, they would immediately select for (a) coevolved defenses to prevent becoming a victim of an exploiter and (b) coevolved defenses to minimize the costs of being exploited if being exploited is inevitable or has already occurred. To return to the example of cheetahs predating on gazelles, predator selection pressure has fashioned an adaptation for a defense in gazelle species known as "stotting" (FitzGibbon & Fanshawe, 1988). Stotting is a behavior in which the gazelle bounces up in the air several times in quick succession, keeping all four legs straight. Stotting may function to signal to the cheetah that the gazelle is in excellent physical

Table 1
Some Hypothesized Domains and Associated Cues of Exploitability

Domain	Hypothesized cues to exploitability
Cheatable	Gullible, trusting, lack of allies to aid with retaliation
Free-ridable	Relative anonymity within larger group
Muggable	Uncoordinated gait, hesitant manner
Sexually assaultable	Shy, low self-confidence, lack of "bodyguards" in group
Sexually deceivable	Seems "ditzy" or "airheaded"
Abusable	Lacking kin in close proximity
Cuckoldable	Relaxation of mate guarding by partner
Stalkable	High on agreeableness and extraversion
Killable	Unmuscular, lacking strong coalition, low in status

Note. These exploitability cues are hypothesized to provide one set of inputs into evolved decision rules about whether to pursue a strategy of exploitation. Other key inputs include benefits to be reaped by exploitation, the costs of pursuing an exploitative strategy, and the availability and comparative merits of the individual and cooperative resource acquisition strategies. The list of exploitation strategies is meant to be illustrative of those that are either most common or most fitness relevant, but it is not exhaustive.

condition, can outrun the cheetah, and hence the cheetah would be better off choosing another victim. Alternatively, stotting could signal to the cheetah that it has been spotted by a particular gazelle and hence has lost the element of surprise. Either way, stotting is clearly an antipredator defense. Gazelles stott primarily in the presence of predators (FitzGibbon & Fanshawe, 1988), and cheetahs rarely attempt to predate a particular gazelle after observing its stotting, relinquishing targeting unpromising prey to concentrate on more catchable prey.

Just as predators' behavior selects for coevolved prey defenses, evolved strategies for exploiting other people will select for coevolved defenses designed to prevent exploitation and to minimize costs when it occurs. Consider those who pursue a short-term mating strategy of targeting a subset of women who are "cognitively disadvantaged" by deceiving them about the depths of their feelings to secure sexual access—a strategy of sexual deception (Buss, 2003; Haselton, Buss, Oubaid, & Angleitner, 2005). Given the severity of the costs of being sexually deceived, it would be astonishing if women had not evolved defenses designed to prevent falling victim to the deception. The emotions of anger and fear, specifically linked to these forms of strategic interference, are examples of such defense mechanisms (Buss, 1989, 2001). Women, far more than men, report that they would be extremely upset if they were deceived by men who feigned feelings or exaggerated commitment to have sex with them (Haselton et al., 2005). These content-specific emotional responses presumably cause women to encode these events in memory, motivate action to reduce the damage, and motivate avoidance of future instances of sexual exploitation (Buss, 1989, 2001).

Because conflicts over the key reproductively relevant resources of sexual access and commitment are pervasive and recurred over deep time, it is reasonable to hypothesize that women have evolved a rich array of defenses. Defenses might include (a) prolonging the courtship process before consenting to sex to widen the window for assessing a man's true intentions; (b) specialized mind-reading abilities to infer men's desires and intentions; and (c) enlisting friends, allies, and kin for observation or analysis to obtain inferences from those who have a stake in the woman's well-being.

As women's defenses against sexual deception evolve, the on-average success of men's strategies of sexual deception decreases, selecting for more sophisticated male strategies. Men might evolve self-deception about their true desires, deluding themselves into believing that their feelings are stronger to make more convincing deceptive displays to women (see Trivers, 2000, on the evolution of self-deception). More convincing declarations of love, for example, would increase the success of the sexually exploitative strategy. As more refined exploitation adaptations evolved, however, the reproductive success of female victims would decline, creating selection pressure for more sophisticated defenses to differentiate true from false declarations of love. Sig-

naling theory suggests that individuals evolve to discount or ignore dishonest or unreliable signals (Searcy & Nowicki, 2005). The problem is that signals such as declarations of love are neither uniformly honest nor uniformly dishonest. It is precisely because such declarations sometimes do indeed signal commitment that women have evolved to attend to them.

These kinds of coevolutionary arms races, resulting in increasingly refined exploitation adaptations and counterexploitation defenses, can, in principle, be perpetual, as long as there is conflict between the sexes over sexual access.

A second type of defense against exploitation involves minimizing the costs incurred after the exploitation has occurred. A deceived and abandoned woman, for example, might conceal this information from others to minimize damage to her social reputation, analogous to the concealing behavior of rape victims. By concealing a rape, a woman minimizes at least two kinds of costs—abandonment by her regular mate and damage to her perceived mate value in the eyes of the group. In short, evolved defenses against strategies of exploitation include adaptations to prevent becoming a victim and adaptations designed to minimize the costs of being exploited once victimization has occurred.

Adaptive Biases and Error Management

The logic of error management theory (Haselton & Buss, 2000) can inform hypotheses about the design of exploitation adaptations and antiexploitation defenses. Under conditions of uncertainty, selection will favor the less costly error, which could be refraining from exploitation in some circumstances and actually favoring exploitation in others. One such bias is hypothesized to be overinferring the utility of exploitative strategies in contexts of life or death. If an individual is about to starve, for example, and there is much uncertainty about whether the person can secure food through individual effort or cooperation, a bias to exploit someone else by stealing food, if more certain to yield benefits, might be less costly in survival currencies than the social punishments the person may have to endure if caught. Folk sayings such as "a bird in the hand is worth two in the bush" may capture this sort of adaptive bias, especially if an individual is on the threshold of failing to survive.

We also propose that antiexploitation defenses will have adaptively biased design features. Specifically, potential victims of exploitation should overinfer the exploitative intentions of others in certain contexts. The strength of inferential biases of exploitation defenses should vary with the degree of uncertainty and asymmetries in the magnitude of the reproductive costs of erring in different directions. Greater uncertainty and reproductive cost asymmetry contribute to more powerful biases. This may help to explain why people walking alone down dark streets overinfer the likelihood of being mugged, because this error of inference is less costly, on average, than that of underinferring one's muggability quotient. Similarly, women overinfer the likelihood of being raped by male strangers, perhaps an adaptive bias that leads to a lower likelihood of suffering the often devastating costs of rape (Buss, 2005).

In sum, adaptations for exploitation and antiexploitation defenses are hypothesized to have been shaped by the degree of uncertainty of future reproductively relevant events, the magnitude of reproductive consequences of those events, and asymmetries in the reproductive consequences of erring in different directions. Selection should thus create adaptively biased design features in judging the utility of adopting an exploitation strategy as well as in estimating the likelihood of becoming a victim.

Exploiting the Exploiters

Interestingly, the tables can be turned. The exploited can become exploiters. If men have evolved adaptations to selectively target women who give off cues of sexual exploitability, women can falsely emit those cues to exploit men. Some women report intentionally acting "ditzy" or "airheaded," feigning greater sexual exploitability than is actually the case (e.g., Buss, 1988; Schmitt & Buss, 1996). These false signals of sexual exploitability could serve at least two possible functions for a woman: (a) extracting short-term resources from a man while failing to deliver the implied sexual access or (b) luring an otherwise reluctant man into a sexual encounter by presenting herself as exploitable, but then using her hidden intelligence to transform the encounter into a longer term, committed relationship. This co-evolutionary arms race is illustrated in Figure 1.

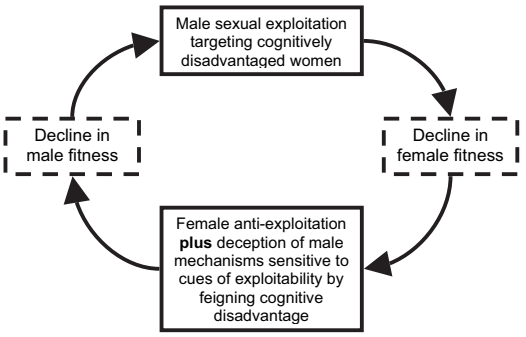

Figure 1. Sexual deceivability. The coevolution of adaptations for exploitation and defenses against exploitation can be perpetual, resulting in increasingly sophisticated offenses and defenses.

Similarly, adaptations can evolve to exploit would-be exploiters in many other domains. There is a saying that "you can't cheat an honest man." One of the key strategies of psychopaths is to appear trusting and gullible, thereby activating adaptations that make their marks believe that they are cheatable. In essence, psychopaths disarm the evolved antiexploitation defenses of their victims by activating their victims' exploitation adaptations. These spirals in coevolutionary arms races—between exploiter offenses and antiexploiter defenses—can be perpetual unless some natural limit or constraint halts the coevolutionary process.

Temporal Components of Strategies of Exploitation

Strategies of exploitation vary in a number of temporal dimensions. Some afford only a narrow time frame for enactment. Sexual assaults committed by dates or acquaintances provide an example. Sexual assault is clearly not the most beneficial solution to the problem of conflict over the timing of first sex with a new partner for most men in most circumstances (Lalumiere, Harris, Quinsey, & Rice, 2005). However, if a man believes that he has a rare opportunity with a desirable woman that is unlikely to occur again, and the costs are rendered particularly low by her exploitability cues, sexual assault may be an effective strategy for some men in that time-restricted context. Similarly, date-rape drugs such as alcohol and Rohypnol can be used to rapidly neutralize a woman's evolved defenses against sexual exploitation.

Temporally transient opportunities that put competitors at a significant fitness disadvantage, if recurrent, could also shape exploitative strategies. For example, a man who catches his wife and a rival *in flagrante delicto* is presented simultaneously with a momentous adaptive problem and a rare opportunity for exploitation. The rival is naked and distracted, making him vulnerable to attack. The husband may never again have the mate poacher at such a disadvantage. Selection plausibly has fashioned adaptations to murder in rare contexts in which a rival is temporarily rendered killable.

Some strategies of exploitation are enacted over days, months, or even years. Stalking, for example, involves the repeated infliction of costs over time. Most stalking is motivated by problems of human mating (Duntley & Buss, 2002). Mating-motivated stalking is used as a solution to conflict between two individuals—when stalkers desire greater romantic involvement than the individuals they stalk. The most frequent types are stalking to initiate a relationship with a reluctant partner and stalking to regain a lost relationship.

The cost-inflicting strategies used by stalkers—repeated phone calls, following, making threats, or acting aggressively—create aversive conditions that can plague victims for weeks, months, or years. Stalkers make it clear to their victims how they can end their victimization—by giving in to the stalker's demands. Living with the perpetual stress and fear created by stalkers can undermine victims' defenses. Roughly a third of stalking victims report giving in to some of their stalkers' demands, including sexual contact and relationship formation (Duntley & Buss, 2002).

Some individuals are more stalkable than others. Women who had been victims of stalking score higher on agreeableness and extraversion than women who had not been stalked (Duntley & Buss, 2002). Perhaps agreeable individuals do not want to offend, and so either give in to their stalker's demands or inadvertently give him or her false hope. Extraverted individuals might be more likely to be socially responsive to contact from a stalker, inadvertently reinforcing the stalker's behavior.

Another temporal component to strategies of exploitation involves manipulating expectations to cre-

ate opportunities for exploitation. Rather than facing a rival group in warfare, a Yanomamö tribe invited their rivals to a great feast as a gesture of peacemaking (Chagnon, 1983). After lulling them into a false sense of security, the hosting tribe ambushed their full-bellied rivals, killing more of them than would have been possible in direct battle. This Yanomamö group, through deception, rendered a previously formidable coalitional adversary into a position of exploitability. This example illustrates that strategies of exploitation are enacted by conflicting groups as well as by conflicting individuals.

More generally, exploitative strategies that require the coordination of the efforts of multiple individuals often require more time to deploy than strategies perpetrated by one person. Examples include coalitional aggression or coalitional hierarchy negotiation. The raids of rival groups perpetrated by the Yanomamö to kidnap women and capture resources could not be successful without planning and coordination over time (Chagnon, 1983). The temporal dimension, in short, is critical to the choice and successful enactment of strategies of exploitation.

Solving Satellite Problems Produced by Strategies of Exploitation

Adaptations of exploitation activated to solve a primary adaptive problem create a cascade of satellite adaptive problems, often because of group dynamics. Examples include retribution from the victim's kin or allies, damage to the exploiter's social reputation, and ostracism from the group. Satellite problems require adaptive solutions. Some solutions are best used only after the problems they created surface—*in situ adaptive solutions*. For example, an exploiter could take steps to (a) cover up the exploitation, (b) subsequently avoid victims and their genetic relatives, (c) threaten to inflict additional costs on them, (d) actually inflict costs on them if they attempt to retaliate, or (e) marshal a formidable coalition to render the costs of avenging the victims prohibitively high.

Other solutions to satellite problems may be deployed before the primary solution of enacting exploitation takes place—*anticipatory adaptive solutions*. Exploiters, for example, sometimes drive wedges between would-be victims and their coalitional allies, individuals who might help victims to seek revenge. A man might facilitate the breakup of a mated couple, thereby depriving the woman of the use of her mate as a body guard, consequently rendering her more sexually exploitable or assaultable. Weakening the victim's social alliances as an anticipatory solution before enacting the primary exploitation strategy decreases the magnitude of the satellite problem of retribution.

Adaptations for exploitation use information about the effectiveness of anticipatory solutions as a source of input for the cost–benefit calculus that determines whether to pursue one particular strategy of exploitation over another or to pursue a nonexploitative strategy. If anticipatory solutions used before an exploitative strategy recurred over evolutionary time, selection should have operated on victims' defense adaptations to anticipate an exploitative attempt and motivate action to prevent an individual from using an exploitative strategy. A woman who has been deprived of the deterrent effects of her mate to fend off a sexual exploiter, for example, can take steps to circumvent the exploiter by calling in backup mates or strengthening her ties to close kin. Exploitative strategies, through the satellite problems they create and the defenses they mobilize, have cascading consequences for dynamics within the group, including altering the status of primary and backup mates, shifting social alliances, and activating kin-protection adaptations.

Discussion

Reproductively valuable resources are always in short supply compared with the numbers of individuals competing for them. Humans have evolved three classes of strategies for gaining access to these resources—individual resource acquisition strategies, cooperative resource acquisition strategies, and exploitative resource acquisition strategies. Among these, adaptations for exploitation have been the least explored, both theoretically and empirically.

We have proposed a conceptual framework for the exploration of some components of adaptations of exploitation but make no pretense that our framework is comprehensive. These adaptations include psychological mechanisms designed to detect cues to the exploitability of potential victims, much like predators are designed to detect cues to the killability of potential prey. They also include anticipatory and in situ solutions to satellite problems created as a consequence of pursuing an exploitative strat-

egy. Because exploitative strategies, unlike cooperative strategies, create victims who incur net fitness costs, selection will fashion defenses against being exploited. These defenses, in turn, will create selection pressure for the evolution of more refined, elaborate, and sophisticated strategies of exploitation. Sometimes, intended victims can turn the tables and exploit the exploiters. These cycles create perpetual within-species coevolutionary arms races that unfold within and between groups.

Different strategies of exploitation and different domains of reproductive resources create distinct adaptive problems, selecting for somewhat specialized exploitation strategies. At least some of the cues that signal that a woman is sexually exploitable differ in important ways from the cues that signal she is muggable. Although some cues may be shared across domains—physical weakness, for example, may be a cue to muggability, sexual assaultability, and killability—other cues are unique to its domain.

Another class of adaptations required for exploitable strategies to work is evolved decision rules that integrate information from many domains to select victims, choose the means of carrying out the exploitation, and solve satellite adaptive problems that follow from carrying out an exploitative strategy. In the domain of sexual deception, for example, men who adopt this strategy risk damage to their social reputation, ostracism, or retribution from the kin of the victimized woman. Conceptually, decision rules about victim selection and whether to pursue an exploitative strategy must be designed to incorporate probabilistic information about these parameters, including gauging the success of solutions to anticipated satellite problems.

Many or most of these processes occur within a group context in which social reputation—the views in which one is held by others—is paramount. Refusing to accept unfair exchanges and seeking vengeance after one has been exploited are two means by which individuals cultivate a reputation as nonexploitable. We expect that future research will document these and discover other adaptations that function specifically to create a reputation as nonexploitable. Because signaling theory suggests that perceivers tend to discount signals that are unreliable or cheap to produce (Searcy & Nowicki, 2005), we expect that selection will favor signals of nonexploitability that are difficult to fake and costly to produce. One reason why people go to great length and expense to cultivate and guard their social reputation is that it functions as a powerful antiexploitability signal.

Status and dominance hierarchies are undoubtedly central components of group structure that influence how, whether, and when strategies of exploitation will be deployed. Just as capuchin monkeys steal food primarily from lower ranked capuchins, those higher in human hierarchies will often be able to carry out exploitative strategies with greater effectiveness—a version of the golden rule that states that "he who has the gold makes the rule." Indeed, a key psychological attribute of people high in status is the belief that rules that apply to everyone else do not apply to them (Gough, 1975), a psychological design feature that facilitates the use of exploitative strategies. Kings historically sexually exploited the wives of their vassals and enslaved other humans for labor. Modern-day presidents and senators can sexually exploit interns more effectively than can the cleaners who sweep their halls and take out their trash at night. On the other hand, low status sometimes favors risky exploitative strategies—including mugging, stealing, raping, and murdering—because such individuals have less to lose, leading them to steeply discount the future (Wilson & Daly, 2006).

The discovery that someone has pursued exploitative strategies, however, can sometimes cause the person's position within a status hierarchy to plummet. A moral opprobrium clings to those who lie, cheat, steal, mug, rape, and murder—at least among their victims and among their victims' kin, friends, and coalition members. Wherever laws have been codified, these are precisely the strategies that have been singled out as crimes warranting punishment; laws are designed to prevent individuals from pursuing exploitative strategies that they would otherwise deploy without such laws. On the other hand, according to anthropologists who have studied traditional tribes such as the Ache of Paraguay, the Yanomamö of Venezuela, and the !Kung San of Botswana, precisely the same suite of exploitative strategies is not only viewed as morally acceptable when directed toward out-groups, it is often regarded as commendable (Kim Hill, personal communication, July 3, 2007). Thus, many adaptations for exploitation will have design features that lead to the preferential targeting of out-groups and their

members. These adaptations become activated in the modern world, which contains large urban jungles teaming with thousands of individuals who are neither kin nor close associates—precisely the victims on whom strategies of exploitation are most commonly unleashed.

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