

Dear Author/Editor,

Here are the proofs of your chapter as well as the metadata sheets.

# Metadata

- Please carefully proof read the metadata, above all the names and address.
- In case there were no abstracts for this book submitted with the manuscript, the first 10-15 lines of the first paragraph were taken. In case you want to replace these default abstracts, please submit new abstracts with your proof corrections.

# Page proofs

- Please check the proofs and mark your corrections either by
  - entering your corrections online or
  - opening the PDF file in Adobe Acrobat and inserting your corrections using the tool "Comment and Markup"
    - or
  - printing the file and marking corrections on hardcopy. Please mark all corrections in dark pen in the text and in the margin at least ¼" (6 mm) from the edge.
- You can upload your annotated PDF file or your corrected printout on our Proofing Website. In case you are not able to scan the printout , send us the corrected pages via fax.
- Please note that any changes at this stage are limited to typographical errors and serious errors of fact.
- If the figures were converted to black and white, please check that the quality of such figures is sufficient and that all references to color in any text discussing the figures is changed accordingly. If the quality of some figures is judged to be insufficient, please send an improved grayscale figure.

# Metadata of the chapter that will be visualized online

Book Title		The Psychology of Social Status	
Chapter Title		Prosocial Behavior and Social Status	
Copyright		Springer Science+Business Media New York 2014	
Corresponding Author	Prefix		
	Family name	Barclay	
	Particle		
	Given name	Pat	
	Suffix		
	Division	Department of Psychology	
	Organization	University of Guelph	
	Address	N1G 2W1 Guelph, ON, Canada	
	Email	barclayp@uoguelph.ca	
Author	Prefix		
	Family name	Kafashan	
	Particle		
	Given name	Sara	
	Suffix		
	Division	Department of Psychology	
	Organization	University of Guelph	
	Address	N1G 2W1 Guelph, ON, Canada	
Author	Prefix		
	Family name	Sparks	
	Particle		
	Given name	Adam	
	Suffix		
	Division	Department of Psychology	
	Organization	University of Guelph	
	Address	N1G 2W1 Guelph, ON, Canada	
Author	Prefix		
	Family name	Griskevicius	
	Particle		
	Given name	Vladas	
	Suffix		
	Division	Carlson School of Management	
	Organization	University of Minnesota	
	Address	55455 Minneapolis, MN, USA	
Abstract		Humans are a very prosocial species, in that we often help others even at cost to ourselves. Such behavior affects—and is affected by—a person's social status. In the current chapter, we examine the interactions between social status and prosocial behavior, and we show that causation goes in both directions. On the one hand, laboratory and field evidence show that prosocial behavior can be a means of achieving, or maintaining, elevated status and accessing the accompanying material and social rewards. On the other hand, possessing status can also affect prosocial behavior (for better or worse) by altering the costs and benefits of prosociality, for example, by affecting people's dependence on others, their vested interest in others, their ability to be prosocial, and their need for status maintenance. Status thus influences the use of prosocial behavior, but can increase it or decrease it depending on the context and the specific type of prosocial behavior. By understanding this bi- directional causation and applying it, we can harness people's desire for status to promote prosocial behaviors by ensuring its visibility and by fostering competitive altruism.	
i cymorad		Vested interest - Noblesse oblige	

# Chapter 7 Prosocial Behavior and Social Status

Sara Kafashan, Adam Sparks, Vladas Griskevicius and Pat Barclay,

### **1 Prosocial Behavior and Social Status**

Among the Kwakiutl of Vancouver Island, chiefs actively compete with one another 2 for prestige by hosting elaborate feasts known as potlatches (Piddocke 1965). At 3 potlatches, items of wealth like canoes and blankets are generously donated to other 4 tribes, and "rival" chiefs must in turn host an equally elaborate or more expensive 5 feast to avoid losing prestige. This example is far from unique: people across the 6 globe use generosity as a route to social status, either directly as in the Kwakiutl or 7 indirectly as a means of acquiring the material or social capital necessary for social 8 success including status competition (reviewed by Barclay 2010a). 9

By contrast, recent research suggests that high status people are *less* likely to be generous in several situations than low status people. Compared with low status people, high status people give less in experimental games, are less endorsing of charitable donations, and are more likely to endorse a number of unethical behaviors (Piff et al. 2010, 2012). Such results seem to contradict the suggestion that prosocial behavior is positively related to social status. What's going on?

Social status and prosocial behavior are ubiquitous in human interactions, but it is not necessarily obvious how and why they should interact. Does prosocial behavior affect one's social status, and if so, when and to what extent? Or does one's social status affect one's prosocial behavior, and if so, does it increase or decrease prosociality? The current chapter examines the interactions between social status and prosocial behavior, in both directions of causation: how prosocial behavior affects the acquisition of status, and how possession of status affects prosocial behavior. We

Authors Sara Kafashan and Adam Sparks contributed equally to this work.

P. Barclay (🖂) · S. Kafashan · A. Sparks

Department of Psychology, University of Guelph, Guelph, ON N1G 2W1 Canada e-mail: barclayp@uoguelph.ca

V. Griskevicius Carlson School of Management, University of Minnesota, Minneapolis, MN 55455, USA

J. T. Cheng et al. (eds.), *The Psychology of Social Status*, DOI 10.1007/978-1-4939-0867-7\_7, 1 © Springer Science+Business Media New York 2014

will also discuss how (and why) the effects of status on prosociality depend on how
status changes the costs and benefits of prosociality by affecting factors like people's
(in)dependence, vested interest in group members, ability to be prosocial, and desire
to maintain status. Before diving into the details, we must first define "status" and
"prosociality" and explain why we should predict that they will affect each other.

# What is Status? Why Connect Social Statusand Prosociality?

Social status includes, but is not limited to, constructs such as socioeconomic status 30 (SES), social class, resource-holding potential, and social influence. Broadly de-31 fined, it refers to the influence one has over group decisions and over the distribution 32 and use of valuable resources, such as food, territories, mates, and coalition partners 33 (reviewed in Cheng et al. 2010). These resources are essential for survival and re-34 production, so controlling them results in higher-status individuals having higher 35 reproductive fitness in humans and other primates (e.g., Mealey 1985; Nettle and 36 Pollet 2008; Pusey et al. 1997). Natural selection "designs" organisms to strive 37 for and desire things that positively impact reproductive success (e.g., food, sex, 38 and safety), so it should be no surprise that the pursuit of status is pervasive in hu-39 man (and nonhuman) social life (see the other chapters in this volume). Of course, 40 people need not be aware of any link between status and reproduction: status mo-41 tives are a *proximate mechanism* that triggers behavior within the individual, but the 42 ultimate function of possessing those motives (i.e., the reason why those motives 43 evolved in primates) is because possessing high status brings survival and repro-44 ductive benefits (see Tinbergen 1963 for this distinction between proximate and 45 ultimate causes, see also Scott-Phillips et al. 2011). 46 Prosocial behavior refers to acts that increase the well-being of other individuals, 47

often at cost to oneself. Why connect this with status? There are at least two reasons. 48 Firstly, prosocial behavior can be used to help achieve status. Researchers distin-49 guish between two types of status: dominance, which typically involves the impo-50 sition of costs on others; and *prestige*, which typically involves the distribution of 51 benefits to others (Henrich and Gil-White 2001; Cheng et al. 2013; see Cheng and 52 Tracy, Chap. 1, this volume). We will argue that prosocial behaviors like generosity, 53 public service, and enforcement of group norms can be used to increase or maintain 54 status by either. (1) leading directly to prestige-based status, and (2) directly result-55 ing in material gains which will later affect how successful one is at either type of 56 status competition (dominance or prestige). Table 7.1 outlines some of these ways 57 that prosociality results in material gains. 58

A second reason to connect status and prosociality is that possessing status can change the costs and benefits of engaging in prosocial behavior. For example, some forms of cooperation can help the cooperator avoid punishment; if high status individuals are able to avoid punishment due to their status, they may have less need to engage in those forms of cooperation. One specific case of this is with tax **Table 7.1** People who help others can benefit in a number of ways, as outlined by the theoretical concepts below (reviewed by Barclay and Van Vugt in press). These can all affect the acquisition of status either directly (e.g. acquisition of prestige), or because the return benefits from helping others will put the helper in a better position later when competing over status in more traditional ways. People need not be aware of these benefits when they help. The explanations below are not mutually exclusive, because more than one concept may be involved in the explanation for a given phenomenon. For each of the theoretical rationales below, we also outline potential connections with status, especially ways in which the possession of status could change the costs and benefits for helping

Theoretical concept	Explanation	Why help?	Examples	Connections with status
Hamiltonian nepotism (e.g. Hamilton 1964)	Helping kin	Inclusive fitness gains: Kin are statistically likely to carry copies of rare genes, so genes that cause nepotism are benefit- ing copies of themselves	Parental care; hiring relatives	Kin support each other in status competition; high status individuals are more likely to be related to group members (i.e. more nepotistic incen- tives to help group members)
Reciprocity: direct or indirect (e.g. Trivers 1971; Nowak and Sigmund 2005)	Helping that will likely be repaid either directly by the recipient or indirectly by others in the popula- tion who observe the help	Reputational benefits: the average gains from receiv- ing help later outweigh the costs of help- ing now	Lending money; "Secret Santa" gift exchanges; exchange of coalitional support ("you scratch my back and I will scratch yours")	Gains from reciprocity can be used for status competition (e.g. coalitional sup- port); high status individuals can help at lower cost but might also need less reciprocation
Stake or vested interest (e.g. Roberts 2005; Tooby and Cosmides 1996)	Helping those whose well-being is directly valuable to you	Stake in recipient's welfare: the benefits from the ongoing relationship outweigh the costs of helping	Giving coffee to your driver at night; participating in collective defense of one's group; saving a researcher who is about to discover the cure for your disease	High status individuals benefit more from the group's existence; other group members may have greater vested interest in the well-being of prestigious individuals
Avoiding punish- ment (e.g. Yamagishi 1986)	Helping others when a failure to do so would result in punishment	The cost of help- ing can be less than the cost of being punished for not-helping	Paying taxes; tak- ing one's turn at some duty (e.g. jury, sentry)	High status individuals may be more able to evade or avoid punishment

(	/			
Theoretical	Explanation	Why help?	Examples	Connections with
concept				status
Byproduct mutu- alism, includ- ing Volunteer's Dilemma (e.g. Clutton-Brock 2009; Diek- mann 1993)	Performing actions that benefit your- self and just happen to benefit others also	The benefits to others are an indirect consequence (a.k.a. an "external- ity") of an otherwise self-benefiting action	Shoveling a sidewalk that others also use; vigilance against preda- tors or threats; fighting com- mon enemies; hunting food that others then scrounge	If one person dis- penses exter- nalities, then others confer prestige upon them in exchange for access to those externalities; high status people may pay lower costs for helping or receive a disproportion- ate share of public goods
Costly signals within bio- logical markets (Barclay 2013; Smith and Bliege Bird 2000)	Helping others will advertise a trait that is desirable to others (e.g. resources, abilities, willingness to help)	Increased likelihood of being chosen by others for valuable social partner- ships and/or avoided as enemies	Extravagant pub- lic philanthropy (to signal resources); hunting and sharing difficult-to- acquire game (to signal abili- ties); unpaid internships or volunteering (to signal willing- ness to help)	Others directly confer status on those who help; high status individuals can more easily pay the costs of extravagant help; low status individuals pay lower opportunity costs for perform- ing mundane help (see Barclay and Reeve 2012)

 Table 7.1 (continued)

avoidance: paying taxes contributes to group benefits, and failing to pay taxes can
result in fines and punishment, but for rich individuals or corporations it is more
cost-effective to avoid both taxes and punishment by hiring accountants to find tax
loopholes, lawyers to defend against legal charges, and/or lobbyists to influence tax
legislation. Table 7.1 outlines a variety of ways that status can alter the relevant costs
and benefits for different kinds of prosociality (see also Barclay and Reeve 2012).

These two links between prosociality and status—using prosociality to achieve status and status affecting the cost/benefit ratio for prosociality—can help explain the apparently discrepant findings described at the outset of this chapter. Let us examine each of these links in turn.

## 74 Helping in Order to Gain Status

Evolutionary theory identifies many ways that those who help others may benefit from doing so (see review in Barclay and Van Vugt in press). For example, those

77 who help others are more likely to receive help when in need themselves (Trivers

1971; Nowak and Sigmund 2005). Helping may also communicate information 78 about the helper's ability or willingness to confer benefits upon others, such that 79 people choose helpers as partners and allies and/or avoid them as enemies (e.g., 80 Barclay 2013; Smith and Bliege Bird 2000). Alternately, helpers may have a vested 81 interest in the well-being of those who they help, perhaps because they rely on the 82 recipients in some way (e.g., Roberts 2005; Tooby and Cosmides 1996). Table 7.1 83 outlines various ways in which helpers could benefit from their actions (for a full 84 review, see Barclay and Van Vugt in press). These returns put helpers in a better po-85 sition to compete with others over status, and sometimes directly lead to an increase 86 in prestige. Do these strategies work, and do people who help more tend to receive 87 higher status? Below we review laboratory and field data from various disciplines, 88 such as economics, psychology, and anthropology, which suggests that they do. 89

Z

### 90 Field Data

Big game hunters from diverse traditional societies receive more reproductive ben-91 efits than nonhunters (e.g., Hill and Kaplan 1988; Smith et al. 2003; Smith 2004). 92 For instance, the Ache, who hunt big game in Paraguay, share their hunted meat 93 with members of the tribe, and the best hunters have more sexual partners than 94 other men do (Hill and Kaplan 1988). Similarly, among the Meriam turtle hunt-95 ers from the Torres Strait, hunters who share turtle meat have higher reproductive 96 success: Hunters, compared to age-matched nonhunters, have earlier first mating 97 experiences, more children, and have access to more desirable females (Smith et al. 98 2003; Smith 2004). Hunters even purposefully aim their hunting efforts toward dif-99 ficult targets to advertise desirable qualities (i.e., physical and resource-acquisition 100 abilities), and compete among each other for the title of best hunter, to gain status 101 within the community (Hawkes and Bliege Bird 2002; Smith and Bliege Bird 2000). 102 Much like the Kwakiutl potlatches, various other traditional societies regularly 103 engage in ceremonies to showcase a tribe's status. Numerous New Guinean tribes, 104 such as the Metlpa, Enga, and Gawil, perform elaborate exchanges during rituals 105 known as mokas (Brown 1978). In order to signal a tribe's wealth and status, large 106 pigs are exchanged. Pigs must be in mint condition to avoid humiliation and de-107 crease in status: A tribe able to give away several large and fattened pigs effectively 108 advertises their access to highly indispensable resources. Such exchanges are ex-109 tremely important not only for the group but also for the individual (Brown 1978). 110 After the exchange, pigs are cooked and served in a large feast where males often 111 propose marriage to females of neighbouring tribes. If a male's tribe contributes too 112 few pigs, or small pigs, to the moka exchange, then the loss of a tribe's reputation 113 could result in the rejection of marriage initiations. Thus, generosity during elabo-114 rate ceremonies, such as mokas and potlatches, can serve as a means for tribes to 115 boost, or maintain high, social status. 116

The previous three examples have focused on prosocial actions signalling resources and/or physical ability as a means to status. Actions that simply signal one's good character can also result in reputational benefits. For example, the Shuar

people of Ecuador highly value helpful contributions to community engagement 120 (Price 2003). In fact, the more one gives to the community (via attendance of com-121 munity meetings, offered labour for community based needs, and years worked in 122 the community public office), the more the individual is perceived to have high so-123 cial status. These high status individuals relish in their ability to place sanctions on 124 those who fail to contribute a fair share to the community, and are deemed kind and 125 altruistic for their generous role in collective action (Price 2003). Altogether, these 126 various field examples show that people can gain status and reputational benefits by 127 signalling resources, physical abilities, or simply one's good character. 128

#### 129 Laboratory Evidence

Across the globe, generosity is not only prominent in the field but also within labo-130 ratory settings. Henrich et al. (2001), for example, conducted a cross-cultural study 131 that examined prosocial behavior in fifteen small-scale societies, including herders, 132 horticulturalists, and agriculturalists from twelve countries from five continents. 133 Participants played an anonymous one-shot ultimatum game, whereby one par-134 ticipant (a "proposer") was given a set amount of money equivalent to one or two 135 days' wages, and was asked to divide this amount with another participant (the 136 "responder"). A "proposer" could offer any amount to his/her partner, and if that 137 "recipient" were happy with the offer, he/she would accept it and both participants 138 were allowed to keep the money. If the recipient deemed the offer unfair, however, 139 he/she could reject it and both parties would leave empty handed. Instead of acting 140 out of rational self-interest, whereby the "proposer" would offer the least amount 141 possible and the recipient would accept any amount of money (because any amount 142 of money would be better than leaving with nothing), participants across societies 143 consistently made nontrivial offers to their partners. Additionally, participants in 144 some societies made hyper-generous offers. Follow-up studies have shown similar 145 results with other measures of prosocial behavior (Henrich et al. 2006, 2010). Such 146 results initially appear to be irrational, but could be expected when viewed in light 147 of evidence of the status benefits associated with prosociality (e.g., Barclay 2004; 148 Hardy and Van Vugt 2006; Price 2003; Van Vugt and Hardy 2010; Willer 2009). 149

Multiple laboratory studies show that prosocial people tend to receive social 150 benefits from others. One way to demonstrate this is to give people the opportunity 151 to act positively or negatively toward helpers. For example, Barclay (2004, 2006) 152 had participants play a cooperative game where people could contribute money 153 toward a group fund which benefited all group members, and then allowed partici-154 pants to entrust money to other participants based on their reputations. People who 155 contributed more to the group fund were entrusted with more money than people 156 who contributed less. Similar results have been found by other researchers (e.g., 157 Clark 2002; Milinski et al. 2002a; Semmann et al. 2004; van Soest and Vyrastekova 158 2004). People who contribute toward their groups are also chosen more often as in-159 teraction partners (Barclay and Willer 2007; Sylwester and Roberts 2010), preferred 160 as leaders (Milinski et al. 2002b), rated as more desirable partners for long-term 161

relationships (Barclay 2010b), and are perceived to be trustworthy and have high
social status (e.g., Barclay 2004; Hardy and Van Vugt 2006; Price 2003; Van Vugt
and Hardy 2010; Willer 2009). Uncooperative people tend to receive verbal criticism or even more tangible punishment (e.g., Barr 2001; Fehr and Gächter 2002;
Yamagishi 1986).

For helping to be a useful means of acquiring status, other people must be aware 167 of the help. If status motives underlie helping behavior, we should expect people to 168 be more cooperative when information about their actions will be available to oth-169 ers. Indeed, the tendency for generosity or cooperativeness to decline as anonymity 170 increases is well established by theory and evidence from economics (Hoffman 171 et al. 1994; Andreoni and Petrie 2004; Rege and Telle 2004), psychology (Kurzban 172 2001; Barclay 2004), biology (Barclay and Willer 2007; Milinski et al. 2002a, b; 173 Sylwester and Roberts 2010; Wedekind and Milinski 2000), and political science 174 (Bixenstine et al. 1966). 175

Even exposure to a subtle cue of observation, an image of watching eves, has 176 been shown to increase generosity (Haley and Fessler 2005; Mifune et al. 2010; 177 AQ1 Oda et al. 2011; Rigdon et al. 2009; Nettle et al. 2013), contributions to publicly shared resources (Burnham and Hare 2007), and condemnation of theft and decep-179 tion (Bourrat et al. 2011). This "eyes effect" seems to be motivated by a concern 180 for reputation (Oda et al. 2011) and has also been shown to affect various forms 181 of real world cooperation, including charitable donations (Ekström 2011; Powell 182 et al. 2012), garbage clean-up (Ernest-Jones et al. 2011; Francey and Bergmüller 183 2012), and donations to a public good (Bateson et al. 1997). The eyes effect emerges 184 most reliably when there are fewer real observers around (Ernest-Jones et al. 2011; 185 Ekström 2011, Nettle et al. 2013) and may not last very long (Sparks and Barclay 186 in press). Despite these limits, strategic placement of reputation cues may be an ef-187 fective way to increase cooperation in otherwise anonymous settings (see Barclay 188 2012 for a discussion). 189

People can gain status not only by giving or helping others but by enforcing 190 norms of cooperation. Many researchers have noted that people contribute more 191 to their groups when noncontributors can receive punishment. But why expend the 192 cost and effort to punish others? Barclay (2006) used a cooperative group game 193 to show that people readily paid to punish those who do not contribute toward a 194 group fund that benefited all group members, and that the people who paid such 195 costs were perceived by other participants as being more respected, trustworthy, and 196 group-focused than nonpunishers. Those who punished noncontributors were also 197 entrusted with more money, demonstrating a tangible benefit for enforcing norms 198 (see also Nelissen 2008). 199

With the benefits gained from a prosocial reputation, it is not surprising that re-200 cent evidence has shown individuals actively competing to be more generous than 201 others, a notion known as competitive altruism (e.g., Barclay and Willer 2007; Rob-202 erts 1998; Sylwester and Roberts 2010). Barclay and Willer (2007) found evidence 203 of competitive altruism by having participants complete a prisoner's dilemma game 204 in groups of three. In the first round, two of the three participants (i.e., participant 205 A and B) engaged in a one-time cooperative task where each could donate money 206 to the other at a cost to oneself, with any donations increasing in value (a "simul-207

taneous gift-exchange"). In the second round, the third participant (i.e., participant 208 C) did this same cooperative task with one of the other two (i.e., with either par-209 ticipant A or B) in one of three experimental conditions: Participant C was either 210 (1) randomly assigned a partner and given no information of the partner's behavior 211 in the previous round, (2) randomly assigned a partner and informed of the part-212 ner's behavior in the first round, or (3) allowed to choose a partner after gaining 213 knowledge of the behaviors of potential partners in the previous round. Barclay and 214 Willer (2007) showed that participants A and B escalated their levels of prosocial 215 behaviors when participants C were able to choose partners. Using an almost identi-216 cal experimental design, Sylwester and Roberts (2010) found similar results in that 217 participants were less prosocial when individuals were randomly assigned partners, 218 and most generous when interaction partners were explicitly chosen. These studies 219 show that individuals will compete to be more generous than others whenever it 220 will affect their reputation and their access to social partnerships (for a review, see 221

222 Barclay 2013).

#### 223 Priming Status Motives

Some research has also examined how people behave when status motives are ac-224 tivated experimentally (e.g., Griskevicius et al. 2009). Consistent with the idea of 225 competitive altruism, this research finds that a desire for status can lead people to 226 become more prosocial and self-sacrificing, such as by choosing pro-social prod-227 ucts (Griskevicius et al. 2010). For example, consider the reason why over a million 228 Americans have bought a Toyota Prius, a popular Hybrid gas-electric car. In one 229 study Prius owners were asked "What was your primary motivation for buying the 230 Prius?", and the overwhelming majority—66%—said they bought a Prius because 231 they wanted to be environmentally friendly (Topline 2007). But while many people 232 say they purchase green products such as the Prius to do good for the environment. 233 a consideration of competitive altruism suggests that rather than seeking to help 234 Mother Nature, consumers might instead be seeking to help themselves—by going 235 green to be seen. 236

To test this idea, researchers had people choose between two cars—a luxurious 237 nongreen model and an equivalently priced but less luxurious green Hybrid; the 238 latter sported an enticing "H" (for Hybrid) to publicly proclaim the owner's pro-en-239 vironmental concern and awareness. Before people made their choices, though, the 240 researchers activated status motives in half of the participants. These subjects read a 241 short story in which they imagined arriving for their first day at a high-powered job, 242 where they would be competing with several others for an opportunity to move up 243 into a prestigious corner office; this story had been used in previous experiments to 244 cause people to seek the things that would get them status (Griskevicius et al. 2009). 245 The study revealed that status motives had a dramatic influence on people's car 246 choices (Griskevicius et al. 2010). Without a desire for status (in the control condi-247 tion), most people chose the top-of-the-line combustion car model over the dinkier 248 Hybrid. But when status was activated, people's choices reversed. More than half of 249

the status-minded people chose the Hybrid. In fact, these go-getters also preferred
other green products such as ecologically friendly dishwashers and recycled backpacks over their conventional counterparts.

Why did a desire for status lead people to forgo luxury and go green? Is it be-253 cause these upward-bound risers were somehow inspired to be altruistic and self-254 sacrificing for the environment? Not exactly. Instead, a second study found that a 255 status motive led people to go green only if they could show off their green wares 256 to others (Griskevicius et al. 2010). If your neighbors could not easily see the sac-257 rifices you're making to help the planet, then it was not worth it. The "going green 258 to be seen" studies suggest that many choices that appear altruistic often belie a 259 deeper desire for status that comes from appearing altruistic. From this perspective, 260 a Prius is essentially a mobile billboard conspicuously advertising the owners' pro-261 social green concerns. Other studies have found similar results in different domains 262 of helping: for example, being primed with romantic motives causes women to 263 report more willingness to engage in prosocial behavior like volunteering to help 264 others, and causes men to report more willingness to engage in heroic helping such 265 as rescue others from dangerous situations, but this only appears when such acts are 266 conspicuous (Griskevicius et al. 2007). 267

#### 268 Applications

Consideration of competitive altruism suggests that people are particularly moti-269 vated to compete for status through pro-social and environmental behaviors that can 270 signal self-sacrifice. A key component of harnessing the desire for status to benefit 271 the environment (for example) is that environmental acts need to be visible to others 272 (e.g., Barclay 2012). For example, recall that status desires motivated people to seek 273 green products only when someone was around to see it. This suggests that firms or 274 organizations should provide people with visible signs or tags for choosing proso-275 cial options, so that people can clearly display their self-sacrificing acts. 276

Competitive altruism also suggests that a particularly effective strategy to 277 facilitate prosocial behavior is to publicize lists that rank the greenest or most phil-278 anthropic companies, celebrities, or ordinary citizens. Media mogul Ted Turner, for 279 example, once bemoaned the influence of the Forbes 400 list of richest Americans, 280 pointing out that this publicized list discouraged the wealthy from donating to char-281 ity for fear of slipping down in the rankings. Perhaps it was not a coincidence that 282 a public list of top philanthropists-the Slate 60-was established the very same 283 year that Turner publicly pledged 1 billion \$ to humanitarian relief. Similar types 284 of publicized lists of "least polluting companies" in India have been remarkably 285 effective at motivating firms to voluntarily reduce pollution (Powers et al. 2008), 286 suggesting that people worldwide are willing to engage in self-sacrificing behavior 287 to avoid appearing at the bottom of a status hierarchy. 288

Consideration of competitive altruism also has implications for the pricing of green and other types of pro-social products. This perspective suggests that some-

times increasing the price of a green product can lead that product to become *more* 291 desirable because it signals that purchasers are prepared to incur costs. For example, 292 after US tax credits for the pro-environmental Toyota Prius expired, sales increased 293 by 68.9% (Toyota 2008). Although this increase might have been even larger had 294 the tax incentive remained, pundits were similarly bewildered by Lexus's decision 295 to begin selling a hybrid sedan priced at more than \$ 120,000. Yet again, sales of 296 the pro-environmental and ultra-expensive Lexus LS600h exceeded projections by 297 more than 300% (Ramsey 2007). 298

When green products are cheaper than their nongreen counterparts, their desir-299 ability can decrease because such products might convey to peers that their owners 300 cannot afford more expensive alternatives (Griskevicius et al. 2010). This means 301 that making some green products cheaper, easier to buy, and more time-saving might 302 undercut their utility as a signal of environmentalist dedication. A similar argument 303 holds for all other types of socially responsible products. There is a careful balance 304 between making such products expensive enough to serve as conspicuous signals 305 of status, yet cheap enough to be usable by more than just the elite. For example, 306 companies may wish to develop two lines of green products: an expensive line to 307 appeal to the wealthy, and a cheaper line to appeal to as many others as possible (es-308 pecially for privately consumed products). When it comes to applications, the idea 309 of competitive altruism presents many fruitful directions. Whereas competition for 310 status has often been viewed as an unsavoury endeavour, the same thirst for status 311 can be channelled to facilitate socially beneficial rather than wasteful behavior. For 312 example, encouraging competition on pro-environmental outcomes might motivate 313 people and firms to voluntarily adopt more sustainable practices. 314

# 315 Helping (or Not-Helping) as a Consequence of Status

Power tends to corrupt, and absolute power corrupts absolutely. Great men are almost always bad men.—Lord Acton

The previous section described how prosocial behavior can be a means of accessing the material and social rewards that accompany elevated status, and how statusseeking can motivate prosocial behavior. Having already examined how pro-social behavior affects status, we now reverse the causal arrow and examine how status affects pro-social behavior.

Does achieving higher status change people's behavior? Experimental econo-323 mists Sheryl Ball and Catherine Eckel (1998) artificially conferred high status on 324 half of their participants by presenting them a gold star in an award ceremony. After 325 this simple manipulation, higher status players received better offers in bargaining 326 simulations. In market games, higher status buyers paid lower prices and higher sta-327 tus sellers received higher prices. Ball and Eckel (1998) concluded: "the economic 328 329 value of status is that it changes everyone's expectations about what is a reasonable outcome of an economic game... a mere star induces subjects to behave differently. 330 even when it is awarded based on transparently random criteria." (p. 511). 331

Why would a mere star change someone's behavior, let alone change behavior 332 so reliably that everyone expects it? Such a simple cue probably changes people's 333 expectations about what others will demand and will grant, and helps form a focal 334 point for people to coordinate their behavior around (a focal point is any salient 335 point that people naturally converge on when solving coordination problems; see 336 Schelling 1960). Status differentials may be a common way to solve coordination 337 problems (Eckel et al. 2010). On a deeper level, this simple manipulation is a win-338 dow onto a psychology that is powerfully designed for negotiating status relations 339 and their effects on what one can and cannot do. In this section, we discuss how 340 status changes the costs and benefits of social behaviors, and along the way we 341 review and integrate evidence from several disciplines about the effects of status 342 on prosocial behavior. The literature shows that possessing status can increase or 343 decrease prosocial behavior, depending on how it affects the costs and benefits of 344 prosociality. 345

We will discuss four examples of ways in which possessing status can affect 346 the costs and benefits of prosociality (and thus affect levels of prosociality): by af-347 fecting people's dependence on others, their vested interest in others, their ability 348 to be prosocial, and their need for status maintenance. There are many other ways, 349 however, that possessing status could change the costs and benefits and benefits 350 of prosociality. For example, unstable status hierarchies create greater opportunity 351 costs for investing in prosociality instead of status competition, and thus increase 352 high-ranking people's tendencies to manipulate group members (Barclay and Be-353 nard 2013). The costs and benefits of prosociality may also be different for status 354 based on prestige versus dominance. 355

## 356 Conceptual Links Between Status and Social Behavior

#### 357 (In) dependence

Greater resource access affords high status individuals more freedom and independence in the pursuit of their goals. By contrast, limited control of material and social resources leaves low status people more dependent on others to fulfill their needs and wants. As such, status-based differences in social dependence are associated with differences in social cognition, social emotion and social behavior, including pro-social behavior.

If someone's outcomes depend on forces outside of his/her direct control, then he/she would benefit from being more aware of social situations (and the influence of situations on behavior). Accordingly, lower-status people are more attentive to context and are more likely to favour contextual explanations of outcomes than are high-status people, who tend to endorse dispositional explanations (Krauss et al. 2009). Social context is especially important, because with heightened vulnerability to external forces and dependence on others comes a greater need to understand

Author's Proof

others' goals and feelings. Psychologists employing a variety of correlational and 371 experimental methods have shown that lower status people are better at gauging the 372 emotional and mental states of others (Snodgrass 1985, 1992; Galinsky et al. 2006; 373 Thomas et al. 1972; Rutherford 2004). Krauss et al. (2010) found that low socio-374 economic status was significantly associated with greater accuracy in identifying 375 the emotions experienced by another participant during a mock job interview. The 376 extent to which each participant used contextual explanations on an unrelated task 377 was an even better predictor of their accuracy in identifying emotions than their 378 socioeconomic status, which supports the contention that differences in empathetic 379 accuracy associated with status are caused by differential attention to the social 380 environment (Krauss et al. 2010). 381

So, material circumstances and personal control influence social cognition and 382 emotion such that higher status people tend to be more self-oriented, and lower status 383 people more other-oriented, in their thoughts and feelings (Krauss et al. 2011). Piff 384 et al. (2012) hypothesized that these tendencies would lead to predictable differences 385 in antisocial behavior as a consequence of status. A series of experimental and cor-386 relational studies confirmed that higher class individuals are more likely to perform 387 or endorse unethical behaviors including lying in negotiations, cheating to win cash, 388 cutting off other drivers in violation of traffic laws, taking candy from children, and 389 engaging in unethical business practices. Similar logic may explain why men with 390 dominant facial and vocal characteristics are more unethical and aggressive (Hasel-391 huhn and Wong 2012; Puts et al. 2012): those more capable of pursuing their goals in-392 dependently derive less benefit from considering and acting on the interests of others. 393

Anti-social behavior does not necessarily imply a lack of prosocial behavior, so 394 we need to explicitly ask: do the same patterns hold for prosocial behavior as for 395 anti-social behavior? Because high status individuals are generally more indepen-396 dent, we should expect they'll be less attentive to the needs of others and thus en-397 gage in less helping behavior. Piff et al. (2010) found support for this hypothesis in a 398 series of four studies, finding (1) people reporting lower subjective SES gave more 399 money to an anonymous partner, (2) those who were experimentally made to feel of 400 a lower social rank more strongly endorsed charitable donations than those made to 401 feel higher ranking. (3) lower educational attainment and annual household income 402 was significantly associated with more egalitarian social values and more trusting 403 behavior in an economic game, and (4) people reporting lower past and current in-404 comes assigned less work to a distressed partner (taking on more of it themselves) 405 than wealthier individuals. These studies establish a clear association between high 406 status and reduced prosocial behavior. 407

# 408 Vested Interest

Being part of a social group is valuable, and so people directly benefit from efforts to preserve the existence of their groups (Barclay and Benard 2013; Kokko et al. 2001; Lahti and Weinstein 2005; Reeve and Hölldobler 2007). Within groups, those

of higher status claim a disproportionate share of group benefits by definition (Hen-412 rich and Gil-White 2001; Reeve and Shen 2006) and thus are disproportionately 413 harmed by threats to the group. As a consequence, they may benefit more than low 414 status individuals from helping behaviors that preserve group stability and viability. 415 such as vigilance, group defense, and enforcement of group norms. In addition to 416 receiving disproportionate benefits, high status individuals may have more kin in 417 their groups, either because those kin helped them to attain status (Chagnon 1997) 418 or because they used their status to produce more offspring (Mealey 1985; Nettle 419 and Pollet 2008). This higher relatedness to group members-when present-could 420 also cause high status individuals to be more prosocial than low status individuals. 421 We look forward to tests of these predictions. 422

This prediction—that greater vested interests will cause high status people to 423 help more than low status people-might seem to contradict the evidence presented 424 earlier that high status people help less because the former are more independent. 425 There is no theoretical contradiction here. Instead, we are pointing out how two 426 different forces-vested interests versus independence-can push in opposite di-427 rections (Barclay and Reeve 2012). The relative importance of vested interests and 428 independence will vary across situations and with different kinds of prosociality. If 429 cooperation is the only way to manage threats to the group, threat conditions will re-430 duce or eliminate the relative independence of goal-pursuit that higher status people 431 normally enjoy; the champ might have many more ways to feed himself or find a 432 mate than the chump, but the only way either can survive an impending massive 433 attack by their hostile neighbors is through highly coordinated collective defense. 434 Also, the tendency for high status people to be less considerate of the interests 435 of others and more self-focused is less of an obstacle to helping when everyone's 436 interests are aligned. The interaction of such forces requires more theoretical and 437 empirical investigation. 438

#### 439 Ability

By definition, people with higher status enjoy privileged access to money, educa-440 tion, and valuable social institutions. Those who control more resources can deliver 441 the same objective quantity of help at a lower personal cost (i.e., a lower percentage 442 of their total resources), which may make them more likely to provide that help 443 (Barclay and Reeve 2012). For example, if a person pays lower costs for providing 444 a public good because of a greater ability, then that person is more likely to provide 445 the public good (Diekmann 1993). Also, high status primates are more likely to 446 intervene in others' conflicts than low status primates, because the former are less 447 likely to get hurt doing so (Silk et al. 2004). We should predict that whenever pos-448 sessing status results in a greater ability to help others at a lower personal cost, we 449 should predict that high status people will provide more help (all else being equal). 450

#### 451 Status Maintenance

14

We've discussed how prosocial behavior can be a means to increase one's status. Similarly, dispensing valued help can help high status individuals maintain their privilege. Group leaders who are insufficiently generous are often criticized by group members, which can lead to a loss of status (Boehm 1999). After all, subordinates will only follow a leader if they gain by doing so (Van Vugt 2006), so if leader does not share then it will reduce others' willingness to follow him/her.

Noblesse oblige refers to a social norm obliging powerful people to act benevo-458 lently toward those less privileged. Fiddick et al. (in press) conducted a cross-cul-459 tural study investigating the noblesse oblige phenomenon. Their experiment asked 460 participants to imagine themselves in a hypothetical carpooling arrangement be-461 tween a (high status) factory boss and his (low status) employee in which one of the 462 individuals was withholding the agreed-upon fuel contribution. Participants who 463 were asked to the take the boss perspective were more tolerant of the noncompli-464 ance and more willing to continue the arrangement than those taking the employee 465 perspective. Another study paired German children attending schools of varying 466 levels of prestige for a "Dictator Game" (i.e., one person is given money and de-467 cides how much to share with a recipient). The naturally occurring status differ-468 ences were highly predictive of generosity: the students of the highest status schools 469 displayed noblesse oblige toward students of less prestigious schools; ingroup fa-470 voritism also occurred but was less evident in pairings with less pronounced status 471 differences (Liebe and Tutic 2010; Fiddick et al. in press). 472

473 Earlier we showed evidence that high status people were less generous (because their independence makes them less attentive to the needs of others). The noblesse 474 oblige phenomenon involves more generosity (e.g., tolerance of noncompliance, fi-475 nancial donations) by high-status individuals, but only in situations where status dif-476 ferentials are clearly invoked. Once again, higher status people seem to be more dis-477 478 criminating helpers. That noblesse oblige serves a status maintenance function seems 479 consistent with other anthropological findings. If this noblesse oblige only comes out when pre-existing status differentials are clearly invoked, then we should also pre-480 dict that reactions to noblesse oblige will depend on how clear the status differentials 481 are. People should resent it when others attempt to inappropriately display noblesse 482 483 oblige if there is no clear pre-existing status differential, given that one person's gain in status is someone else's loss in relative status (Barclay 2013). Refusing others' 484 generosity may be a strategy for resisting the unwarranted imposition of inferior sta-485 tus (Henrich et al. 2005; see also Nadler and Halabi 2006; Zahavi and Zahavi 1997). 486

# 487 Summary, Conclusions and Applications

We started with the question of whether prosociality affects social status, or vice versa. The evidence shows that the causation is bidirectional. Laboratory and field evidence both show that prosociality can be used to gain or maintain prestige, or

to acquire the material and social capital necessary for status competition. Once 491 acquired, possessing status then changes the costs and benefits for engaging in pro-492 social behavior, for example because possessing status will affect one's level of 493 independence and vested interests in fellow group members, one's need for recip-494 rocation from others, or one's ability to be prosocial. When we see how possessing 495 status can increase some benefits of prosociality (e.g., by increasing vested inter-496 ests) while reducing others (e.g., less dependence on others means less to gain from 497 helping), it becomes clear that status will be positively associated with prosociality 498 in some contexts and for some types of prosociality, yet negatively related with pro-499 sociality in other contexts. We should predict that when a particular type of benefit 500 is particular salient in a given context, then it will carry more weight in terms of af-501 fecting behavior. We must also remember that there are many types of prosociality. 502 each with different benefits, performance costs, and opportunity costs, so variables 503 like status can affect them all differently (Barclay and Reeve 2012). 504

How can we use this knowledge? Two possibilities are immediately obvious. 505 The first is to alter the cost-benefit ratio for prosocial behavior for all individuals, 506 not just high status persons, as possessing status is just one way to affect costs and 507 benefits. The second is to provide opportunities for people to gain a good reputa-508 tion for prosocial behavior, as this increases prosociality. For example, we can use 509 status motives to promote sustainable products and responsible consumerism. This 510 will require greater visibility and branding of such products, and finding the fine 511 balance between status symbols for the wealthy and products available to the most 512 people possible. We may even try to incite competitive altruism by explicitly com-513 paring the generosity of different individuals, giving the most recognition to the 514 most generous individuals (e.g., expanding the Slate 60 list of philanthropists), and 515 allowing opportunities for the most generous individuals to selectively assort with 516 each other. When status is based on prestige, we can demand noblesse oblige from 517 those of high status as a condition of granting them prestige. There are of course 518 risks and unknowns with harnessing the power of reputation (see Barclay 2011, 519 520 2012), and these require careful consideration and further study, but the possible gains are immense. 521

#### References 522

AQ2 Alexander, R. D. (1987). The biology of moral systems. New York: Aldine de Gruyter.

Andreoni, J. (1995). Warm-glow versus cold pickle: The effects of positive and negative framing 524 525 on cooperation in experiments. Quarterly Journal of Economics, 110, 1-21.

526 Andreoni, J., & Petrie, R. (2004). Public goods experiments without confidentiality: A glimpse into fund-raising. Journal of Public Economics, 88, 1605-1623. 527

- 532 Barclay, P. (2004). Trustworthiness and competitive altruism can also solve the "tragedy of the
- commons". Evolution & Human Behavior, 25, 209-220. 533

Ball, S., & Eckel, C. C. (1998). The economic value of status. Journal of Socio-Economics, 27, 528 495-514. 529

Ball, S., Eckel, C., Grossman, P. J., & Zame, W. (2001). Status in markets. The Quarterly Journal 530 of Economics, 116, 161-188. 531

- Barclay, P. (2006). Reputational benefits for altruistic punishment. *Evolution & Human Behaviour*, 27, 344–360.
- 536 Barclay, P. (2010a). Reputation and the evolution of generous behavior. Hauppage: Nova Science.
- Barclay, P. (2010b). Altruism as a courtship display: Some effects of third-party generosity on
  audience perceptions. *British Journal of Psychology*, *101*, 123–135.
- Barclay, P. (2011). The evolution of charitable behaviour and the power of reputation. In C. Roberts
   (Ed.), *Applied evolutionary psychology* (pp. 149–172). Oxford: Oxford University Press.
- Barclay, P. (2012). Harnessing the power of reputation: strengths and limits for promoting cooperative behaviours. *Evolutionary Psychology*, *10*(5), 868–883.
- Barclay, P. (2013). Strategies for cooperation in biological markets, especially for humans. *Evolution and Human Behavior*, *34*(3), 164–175.
- Barclay, P., & Benard, S. (2013). Who cries wolf, and when: Manipulation of perceived threats to
   preserve rank in cooperative groups. *PLoS ONE*, *8*, e73863.
- 547 Barclay, P., & Reeve, H. K. (2012). The varying relationship between helping and individual quality. *Behavioural Ecology*, 23(4), 693–698.
- AQ3 Barclay, P., & Van Vugt, M. (in press). The evolutionary psychology of human pro-sociality: Adaptations, byproducts, and mistakes. In D. Schroeder & W. Graziano (Eds.), *The Oxford handbook of prosocial behavior*. Oxford: Oxford University Press.
  - Barclay, P., & Willer, R. (2007). Partner choice creates competitive altruism in humans. *Proceed- ings of the Royal Society B, 274,* 749–753.
  - Barr, A. (2001). Social dilemmas and shame-based sanctions: Experimental results from rural
     Zimbabwe. Working Paper WPS/2001-11, Centre for the Study of African Economies, Oxford,
     UK.
  - Bateson, C. D., Sager, K., Garst, E., Kang, M., Rubchinsky, K., & Dawson, K. (1997). Is empathy induced helping due to self-other merging? *Journal of Personality and Social Psychology*, *73*, 495–509.
  - Bixenstine, V., Levitt, C., & Wilson, K. (1966). Collaboration among six persons in a prisoner's
     dilemma game. *Journal of Conflict Resolution*, 10, 488–496.
  - Boehm, C. (1999). *Hierarchy in the forest: The evolution of egalitarian behavior*. Cambridge:
    Harvard University Press.
  - Bourrat, P., Baumard, N., & McKay, R. (2011). Surveillance cues enhance moral condemnation.
     *Evolutionary Psychology*, *9*, 193–199.
  - Brown, P. (1978). New Guinea: Ecology, society, and culture. *Annual Review of Anthropology*, 7, 263–291.
     263–291.
  - 568 Burley, N. (1988). The differential-allocation hypothesis: An experimental test. *The American* 569 *Naturalist, 132,* 611–628.
- Burnham, T. C., & Hare, B. (2007). Engineering human cooperation: Does involuntary neural activation increase public goods contributions? *Human Nature, 18,* 88–108.
   Chagnon N. (1997) *Yanomamö* (5th ed.) Wadsworth
  - Chagnon, N. (1997). *Yanomamö* (5th ed.). Wadsworth.
  - Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations
     of social status. *Evolution and Human Behaviour*, 31, 334–347.
  - Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top:
    Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology, 104,* 103–125.
  - Clark, J. (2002). Recognizing large donations to public goods: An experimental test. *Managerial and Decision Economics*, 23, 33–44.
  - 580 Clutton-Brock, T. (2009). Cooperation between non-kin in animal societies. *Nature, 462,* 51–57.
  - Commins, B., & Lockwood, J. (1979). The effects of status differences, favored treatment and
     equity on intergroup comparisons. *European Journal of Social Psychology*, *9*, 281–289.
  - 583 Connor, R. C. (2007). Dolphin social intelligence: Complex alliance relationships in bottlenose
  - dolphins and a consideration of selective environments for extreme brain size evolution in mammals. *Philosophical Transactions of the Royal Society B: Biological Sciences, 362,* 586 587–602.

- 7 Prosocial Behavior and Social Status
- 587 Diekmann, A. (1993). Cooperation in an asymmetric volunteer's dilemma: Theory and experimen-588 tal evidence. *International Journal of Game Theory*, 22, 75–85.
- Eckel, C. C., Fatas, E., & Wilson, R. (2010). Cooperation and status in organizations. *Journal of Public Economic Theory*, *12*, 737–762.
- Ekström, M. (2011). Do watching eyes affect charitable giving? Evidence from a field experiment.
   *Experimental Economics*, 15, 530–546.
- Ernest-Jones, M., Nettle, D., & Bateson, M. (2011). Effects of eye images on everyday cooperative
   behavior: A field experiment. *Evolution and Human Behavior*, *32*, 172–178.
- Faris, R. (2012). Aggression, exclusivity, and status attainment in interpersonal networks. *Social Forces*, 90(4), 1207–1236.
- 597 Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. Nature, 415, 137–140.
- Fiddick, L., Cummins, D. D., Janicki, M., Lee, S., Erlich, N. (in press). A cross-cultural study of
   noblesse oblige in economic decision-making. *Human Nature*.
- Francey, D., & Bergmuller, R. (2012). Images of eyes enhance investments in a real-life public
   good. *PLoS ONE*, 7, 1–7.
- Galinsky, A. D., Magee, J. C., Inesi, M. E., & Gruenfeld, D. H. (2006). Power and perspectives not
   taken. *Psychological Science*, 17, 1068–1074.
- Gangestad, S. W., & Simpson, J. A. (2000). The evolution of human mating: Trade-offs and strategic pluralism. *Behavioural and Brain Science*, *23*, 573–644.
- Gangestad, S. W., Garver-Apgar, C. E., Simpson, J. A., & Cousins, A. J. (2007). Changes in women's mate preferences across the ovulatory cycle. *Journal of Personality and Social Psychology*, *92*, 151–163.
  - Griskevicius, V., Tybur, J. M., Sundie, J. M., Cialdini, R. B., Miller, G. F., & Kenrick, D. T. (2007).
     Blatant benevolence and conspicuous consumption: When romantic motives elicit strategic
     costly signals. *Journal of Personality and Social Psychology*, *93*(1), 85–102.
  - Griskevicius, V., Tybur, J. M., Gangestad, S. W., Perea, E. F., Shapiro, J. R., & Kenrick, D. T.
    (2009). Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology*, *96*, 980–994.
  - Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, *98*,
    392–404.
  - Haley, K. J., & Fessler, D. M. T. (2005). Nobody's watching? Subtle cues affect generosity in an
     anonymous economic game. *Evolution and Human Behaviour, 26*, 245–256.
  - Hamilton, W. D. (1963). The evolution of altruistic behaviour. *The American Naturalist*, *97*, 354–356.
  - Hamilton, W. D. (1964). The genetical evolution of social behaviour II. *Journal of Theoretical Biology*, 7, 17–52.
  - Hardy, C., & Van Vugt, M. (2006). Giving for glory in social dilemmas: The competitive altruism
     hypothesis. *Personality and Social Psychology Bulletin, 32*, 1402–1413.
  - Harris, M. B. (1970). Reciprocity and generosity: Some determinants of sharing in children. *Child Development*, 41, 313–328.
  - Haselhuhn, M. P., & Wong, E. M. (2012). Bad to the bone: Facial structure predicts unethical be havior. *Proceedings of the Royal Society B: Biological Sciences, 279,* 571–576.
  - Hawkes, K., & Bliege Bird, R. (2002). Showing off, handicap signaling, and the evolution of
     men's work. *Evolutionary Anthropology*, *11*, 58–67.
  - Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a
     mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behav- ior*, 22, 165–169.
  - Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In
    search of Homo Economicus: Behavioural experiments in 15 small scale societies. *The Ameri- can Economic Review*, *91*, 73–78.
  - Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., McElreath, R., Alvard, M.,
  - 639 Barr, A., & Ensminger, J., Henrich, N. S., Hill, K., Gil-White, F., Gurven, M., Marlowe, F. W.,

- Patton, J. Q., & Tracer, D. (2005). "Economic man" in cross-cultural perspective: Behavioral
   experiments in 15 small-scale societies. *Behavioral and Brain Sciences*, 28, 795–855.
- Henrich, J., McElreath, R., Barr, A., Ensminger, J., Barrett, C., Bolyanatz, A., Cardenas, J. C.,
- Gurven, M., Gwako, E., Henrich, N., Lesogorol, C., Marlowe, F., Tracer, D., & Ziker, J. (2006).
  Costly punishment across human societies. *Science*, *312*, 1767–1770.
- Henrich, J., Ensminger, J., McElreath, R., Barr, A., Barrett, C., Bolyanatz, A., Cardenas, J. C.,
  Gurven, M., Gwako, E., Henrich, N., Lesogorol, C., Marlowe, F., Tracer, D., & Ziker, J. (2010).
  Markets, religion, community size, and the evolution of fairness and punishment. *Science*, *327*, 1480–1484.
- Hill, K., & Kaplan, H. (1988). Tradeoffs in male and female reproductive strategies among the
   Ache: Part 1. In L. Betzig, M. Borgerhoff Mulder, & P. Turke (Eds.), *Human reproductive behaviour: A Darwinian perspective* (pp. 277–289). Cambridge: Cambridge University Press.
- *behaviour: A Darwinian perspective* (pp. 277–289). Cambridge: Cambridge University Press.
   Hoffman, E., & Spitzer, M. L. (1985). Entitlements, rights, and fairness: An experimental exami-
- nation of subjects' concepts of distributive justice. Journal of Legal Studies, 14, 259–297.
- Hoffman, E., McCabe, K., Shachat, K., & Smith, V. (1994). Preferences, property rights, and ano nymity in bargaining games. *Games and Economic Behavior*, 7, 346–380.
- Holekamp, K. E., Sakai, S. T., & Lundrigan, B. L. (2007). Social intelligence in the spotted hyena
  (*Crocuta crocuta*). *Philosophical Transactions of the Royal Society B: Biological Sciences*,
  362, 523–538.
- Kokko, H., Johnstone, R. A., & Clutton-Brock, T. H. (2001). The evolution of cooperative breeding through group augmentation. *Proceedings of the Royal Society B: Biological Sciences*, 268, 187–196.
- Krauss, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology*, *97*, 992–1004.
- Krauss, M. W., Côté, S., & Keltner, D. (2010). Social class, contextualism, and empathetic accuracy. *Psychological Science*, *21*, 1716–1723.
- Krauss, M. W., Piff, P. K., & Keltner, D. (2011). Social class as culture: The convergence of re sources and rank in the social realm. *Current Directions in Psychological Science*, 20, 246–250.
- Kurzban, R. (2001). The social psychophysics of cooperation: Nonverbal communication in a
   public goods game. *Journal of Nonverbal Behavior*, 25, 241–259.
- Lahti, D. C., & Weinstein, B. S. (2005). The better angels of our nature: Group stability and the evolution of moral tension. *Evolution and Human Behavior*, *26*, 47–63.
- Liebe, U., & Tutic, A. (2010). Status groups and altruistic behaviour in dictator games. *Rationality and Society*, 22, 353–380.
- Lotem, A., Wagner, R. H., & Balshine-Earn, S. (1999). The overlooked signaling component of
   nonsignaling behavior. *Behavioral Ecology*, *10*, 209–212.
- Mealey, L. (1985). The relationship between social status and biological success: A case study of
   the Mormon religious hierarchy. *Ethology and Sociobiology*, *6*, 249–257.
- Mifune, N., Hashimoto, H., & Yamagishi, T. (2010). Altruism toward in-group members as a reputation mechanism. *Evolution and Human Behavior*, *31*, 109–117.
- Milinski, M., Semmann, D., & Krambeck, H.-J. (2002a). Reputation helps solve the "tragedy of the commons". *Nature*, 415, 424–426.
- Milinski, M., Semmann, D., & Krambeck, H. J. (2002b). Donors to charity gain in both indirect
   reciprocity and political reputation. *Proceedings of the Royal Society B: Biological Sciences,* 269, 881–883. doi:10.1098/rspb.2002.1964.
- Møller, A. P., & Thornhill, R. (1998). Male paternal care, differential parental investment by fe males and sexual selection. *Animal Behaviour*, 55, 1507–1515.
- Nadler, A., & Halabi, S. (2006). Intergroup helping as status relations: Effects of status stability,
   identification, and type of help on receptivity to high-status group's help. *Journal of Personal- ity and Social Psychology*, *91*, 97–110.
- Nelissen, R. (2008). The price you pay: Cost-dependent reputation effects of altruistic punishment.
   *Evolution & Human Behavior*, 29(4), 242–248.
- Nettle, D., & Pollet, T. V. (2008). Natural selection on male wealth in humans. *The American Naturalist*, 172(5), 658–656.

- 7 Prosocial Behavior and Social Status
- Nettle, D., Harper, Z., Kidson, A., Stone, R., Penton-Voak, I. S., & Bateson, M. (2013). The watch-694 ing eves effect in the dictator game: It's not how much you give, it's being seen to give some-695 thing. Evolution and Human Behavior, 34, 35-40. 696
- Noë, R., & Hammerstein, P. (1994). Biological markets: Supply and demand determine the effect 697 of partner choice in cooperation, mutualism, and mating. Behavioural Ecology & Sociobiol-698 ogv. 35, 1-11.
- AQ6 Noë, R., & Hammerstein, P. (1995). Biological markets. Trends in Ecology & Evolution, 10, 336-339. 701
  - Nowak, M. A., & Sigmund, K. (2005). Evolution of indirect reciprocity. *Nature*, 437, 1291–1298. 702
  - Oda, R., Niwa, Y., Honma, A., & Hiraishi, K. (2011). An eye-like painting enhances the expecta-703 tion of a good reputation. Evolution and Human Behavior, 32, 166-171. 704
  - Piddocke, S. (1965). The potlatch system of the Southern Kwakiutl: A new perspective. Southwest-705 ern Journal of Anthropology, 21, 244-264. 706
  - Piff, P. K., Krauss, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: 707 The influence of social class on prosocial behaviour. Journal of Personality and Social Psy-708 chology, 99, 771-784. 709
  - Piff, P. K., Stancato, D. M., Côté, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social 710 class predicts increased unethical behavior. Proceedings of the National Academy of Sciences 711 of the United States of America, 109, 4086–4091. 712
  - Powell, K. L., Roberts, G., & Nettle, D. (2012). Eye images increase charitable donations: Evi-713 dence from an opportunistic field experiment in a supermarket. *Ethology*, 188, 1–6. 714
  - Powers, N., Blackman, A., Lyon, T. P., & Narain, U. (2008). Does disclosure reduce pollution? 715 Evidence from India's Green Rating Project. Discussion Paper, Resources for the Future, RFF 716 08-38. http://www.rff.org/RFF/Documents/RFF-DP-08-38.pdf. Accessed 24 Oct 2010. 717
  - Price, M. E. (2003). Pro-community altruism and social status in a Shuar village. Human Nature, 718 14, 191-208. 719
  - Price, M. E., Cosmides, L., & Tooby, J. (2002). Punitive sentiment as an anti-free rider psychologi-720 cal device. Evolution and Human Behaviour, 23, 203-231. 721
  - Pusey, A., Williams, J., & Goodall, J. (1997). The influence of dominance rank on the reproductive 722 success of female chimpanzees. Science, 277, 828-831. 723
  - Puts, D. A., Apicella, C. L., & Cárdenas, R. A. (2012). Masculine voices signal men's threat poten-724 tial in forager and industrial societies. Proceedings of the Royal Society B: Biological Sciences, 725 279, 601-609.
- AQ7 Ramsey, J. (4 December 2007). Lexus exceeds LS600h sales target by three hundred percent [Web log post]. http://www.autoblog.com/2007/12/04/lexus-exceeds-ls600h-sales-target-bythree-728 hundred-percent/. 729
  - Reeve, H. K., & Hölldobler, B. (2007). The emergence of a superorganism through intergroup 730 competition. Proceedings of the National Academy of Sciences of the United States of America, 731 104, 9736-9740. 732
  - Reeve, H. K., & Shen, S.-F. (2006). A missing model in reproductive skew theory-the bordered 733 tug-of-war. Proceedings of the National Academy of Sciences of the United States of America, 734 103(22), 8430-8434. 735
  - Rege, M., & Telle, K. (2004). The impact of social approval and framing on cooperation in public 736 good situations. Journal of Public Economics, 88, 1625-1644. 737
  - Rigdon, M., Ishii, K., Watabe, M., & Kitayama, S. (2009). Minimal social cues in the dictator 738 game. Journal of Economic Psychology, 30, 358–367. 739
  - Roberts, G. (1998). Competitive altruism: From reciprocity to the handicap principle. Proceed-740 ings: Biological Sciences, 265, 427-431. 741
  - Roberts, G. (2005). Cooperation through interdependence. Animal Behaviour, 70, 901–908. 742
  - Rutherford, M. (2004). The effect of social role on theory of mind reasoning. British Journal of 743 Psychology, 95, 91–103. 744
  - Schelling, T. (1960). The strategy of conflict. Cambridge: Harvard University Press. 745
  - Schino, G. (2001). Grooming, competition and social rank among female primates: A meta-analy-746
  - sis. Animal Behaviour, 62, 265–271. 747

- Schino, G. (2007). Grooming and agnostic support: A meta-analysis of primate reciprocal altruism.
   Behavioural Ecology, 18, 115–120.
- Scott-Phillips, T. C., Dickins, T. E., & West, S. A. (2011). Evolutionary theory and the ultimate proximate distinction in the human behavioral sciences. *Perspectives on Psychological Science*, 6(1), 38–47.
- Semmann, D., Krambeck, H.-J., & Milinski, M. (2004). Strategic investment in reputation. *Behavioral Ecology and Sociobiology*, *56*, 248–252.
- Silk, J. B., Alberts, S. C., & Altmann, J. (2004). Patterns of coalition formation by adult female
   baboons in Amboseli, Kenya. *Animal Behaviour*, 67, 573–582.
- Seeley, T. D., & Visscher, P. K. (1988). Assessing the benefits of cooperation in honeybee foraging:
   Search costs, foraging quality, and competitive ability. *Behavioural Ecology and Sociobiology*,
   22, 229–237.
- Smith, E. A. (2004). Why do good hunters have higher reproductive success? *Human Nature*, 15, 343–364.
- Smith, E. A., & Bliege Bird, R. (2000). Turtle hunting and tombstone opening: Public generosity
   as costly signaling. *Evolution and Human Behavior*, 21, 245–262.
- Smith, E. A., Bliege Bird, R., & Bird, D. W. (2003). The benefits of costly signalling: Meriam turtle hunters. *Behavioural Ecology*, *14*, 116–126.
- Snodgrass, S. E. (1985). Women's intuition: The effect of subordinate role on interpersonal sensi tivity. *Journal of Personality and Social Psychology*, 49, 146–155.
- Snodgrass, S. E. (1992). Further effects of role versus gender on interpersonal sensitivity. *Journal of Personality and Social Psychology*, *62*, 154–158.
- Sparks, A., & Barclay, P. (in press). Eyes increase generosity, but not for long: The limited effect
   of a false cue. *Evolution and Human Behavior*.
- Sylwester, K., & Roberts, G. (2010). Cooperators benefit through reputation-based partner choice
   in economic games. *Biology Letters*, 6, 659–662.
- Tinbergen, N. (1963). On aims and methods of ethology. *Zeitschrift für Tierpsychologie*, 20, 410–
   433.
- Thomas, D. L., Franks, D. D., & Calonico, J. M. (1972). Role-taking and power in social psychol ogy. American Sociological Review, 37, 605–614.
- Topline Strategy Group. (2007). Study challenges idea of hybrid auto buyers as typical early
   adopters. http://www.toplinestrategy.com/pr\_4\_23\_07.htm.
- Tooby, J., & Cosmides, L. (1996). Friendship and the banker's paradox: Other pathways to the evolution of adaptations for altruism. *Proceedings of the British Academy*, 88, 119–143.
- AQ8<br/>783Toyota Reports 2007 and December Sales. (2008). http://www.toyota.com/about/news/<br/>corporate/2008/01/03-1-sales.html.
  - Trivers, R. L. (1971). The evolution of reciprocal altruism. *The Quarterly Review of Biology, 46,* 35–57.
  - Van Soest, D. P., & Vyrastekova, J. (2004). *Economic ties and social dilemmas: An economic experiment*. CentER Discussion Paper 2004-55, CentER, University of Tilburg, Netherlands.
  - Van Vugt, M. (2006). Evolutionary origins of leadership and followership. *Personality and Psy- chology Review*, 10(4), 354–371.
  - Van Vugt, M., & Hardy, C. L. (2010). Cooperation for reputation: Wasteful contributions as costly signals in public goods. *Group Processes & Intergroup Relations, 13*, 101–111.
  - Wedekind, C., & Milinski, M. (2000). Cooperation through image scoring in humans. *Science*, 288, 850–852.
- AQ9 Wiessner, P., & Schiefenhovel, W. (Eds.). (1997). Food and the status quest: An interdisciplinary perspective. Berghahn Books.
  - Willer, R. (2009). Groups reward individual sacrifice: The status solution to the collective action
     problem. *American Sociological Review*, *74*, 23–43.
  - Yamagishi, T. (1986). The provision of a sanctioning system as a public good. *Journal of Personal- ity and Social Psychology*, *51*, 110–116.
  - Yarrow, M. R., Scott, P. M., & Waxler, C. Z. (1973). Learning concern for others. *Developmental Psychology*, *8*, 240–260.

- 7 Prosocial Behavior and Social Status
- Zahavi, A. (1990). Arabian babblers: The quest for social status in a cooperative breeder. In P. B. Stacey & W. D. Koenig (Eds.), Cooperative breeding in birds (pp. 105-130). Cambridge: Cambridge University Press.
- Zahavi, A. (1995). Altruism as a handicap: The limitations of kin selection and reciprocity. Journal of Avian Biology, 26, 1-3.
- Zahavi, A., & Zahavi, A. (1997). The handicap principle: A missing piece of Darwin's puzzle. New 807
- York: Oxford University Press. 808

- AQ1. "Rigdon et al. 2010", "Nettle et al. 2012", "Bateson et al. 2005" has been changed to "Rigdon et al. 2009", "Nettle et al. 2013", "Bateson et al. 1997" respectively, to match the reference list. Please confirm.
- AQ2. The following authors are not cited in the text: "Alexander 1987", "Andreoni 1995", "Ball et al. 2001", "Burley 1988", "Commins and Lockwood 1979", "Connor 2007", "Faris 2012", "Gangestad and Simpson 2000". Please provide the citations or delete the entries from the reference list.
- AQ3. Please update the year of publication for the following references: "Barclay and Van Vugt in press", "Fiddick et al. in press", "Sparks and Barclay in press".
- AQ4. Please provide the publisher name for the reference "Chagnon 1997".
- AQ5. The following authors are not cited in the text: "Gangestad et al. 2007", "Hamilton 1963", "Harris 1970", "Hoffman and Spitzer 1985", "Holekamp et al. 2007", "Lotem et al. 1999", "Møller and Thornhill 1998". Please provide the citations or delete the entries from the reference list.
- AQ6. The following authors are not cited in the text: "Noë and Hammerstein 1994, 1995", "Price et al. 2002", "Schino 2001, 2007", "Seeley and Visscher 1988", "Wiessner and Schiefenhovel 1997", "Yarrow et al. 1973", "Zahavi 1990, 1995". Please provide the citations or delete the entries from the reference list.
- AQ7. Please provide the access dates for the following references: "Ramsey 2007" and "Topline Strategy Group 2007".
- AQ8. Please provide complete details for the reference: "Toyota Reports 2007" and "December Sales 2008".
- AQ9. Please provide the publishers main location in reference "Wiessner and Schiefenhovel 1997".