Chapter 9
The Roots and Fruits of Social Status in Small-Scale Human Societies

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Introduction

Since humans have lived in small-scale societies for the majority of their existence, investigation of the determinants and reproductive outcomes of status acquisition in these societies can help elucidate the origins of status psychology. In this chapter, I argue that in even the most egalitarian foragers and horticulturalists, interindividual differences in physical size, production skill, generosity, or social support produce disparity in men's political influence and mating opportunity. The reproductive advantages of status not only include higher fertility from privileged access to marriage partners and extramarital affairs but also better survival of offspring. These benefits to status in small-scale societies have become more apparent over the past several decades, as quantitative ethnography has challenged prior conceptions about the extent of human egalitarianism.

Small-scale societies have often been caricatured to suit particular political philosophies. In *Leviathan* (1651), Thomas Hobbes described the lives of humans without formal government as "nasty, brutish, and short". He contrasted human nature with the harmonious behavior of bees and ants: "men are continually in competition for Honour and Dignity, which these creatures are not". Anthropologist Lewis Henry Morgan countered the Hobbesian view, claiming that many hunter-gatherer societies are noncompetitive and nonhierarchical to the point that even spouses are communally shared (1877). Friedrich Engels was happy to agree, writing that hunter-gatherer societies exhibit a primitive communism (1884). In the 1960s, nomadic hunter-gatherers were declared the "original, affluent society" (Sahlins 1968), based in part on the egalitarianism and short working day observed by Richard Lee among the !Kung of the Kalahari (1968). In academia and in the public eye, the !Kung were heralded as a foil to the conflict, capitalism, and social injustices of the Vietnam War era.

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The Dobe !Kung of the 1960s certainly were one of the most egalitarian societies studied by anthropologists, but in no small-scale society do children and women have equal status, on average, with adult men. Formal political influence of women across societies is rare, due to subjugation, the sexual division of labor (including care of multiple dependents), and sex differences in coalition-building (Low 1992). By "egalitarian", anthropologists generally mean equal rights and privileges among adult men. In his comparison of human political systems, Fried (1967) argued that in most small-scale societies lacking formalized hierarchy, men may be able to coerce women and children, but adult male status is neither differentially ascribed nor achieved through competition. Based on his reading of the existing ethnographies, Fried famously wrote of egalitarian societies: "there are as many positions of prestige in any given age-sex grade as there are persons capable of filling them." (p. 33). According to Fried and others (e.g. Knauft 1991), differences in strength, skill, or knowledge do not typically cause certain men in these societies to gain greater favor or deference from group members.

Both ecological and institutional forces help maintain the egalitarianism common to many hunter-gatherer societies. In the absence of storable or predictable food packages, widespread resource sharing emerges to buffer risk in production and creates interdependence among families (Cashdan 1980; Winterhalder 1986; Wiessner 1996; Kaplan and Gurven 2005). In some societies, such as the Ache of Paraguay and Hadza of Tanzania, it was often taboo for hunters to consume portions of their own kills (Clastres 1972; Woodburn 1982). To express commitment to food sharing, individuals criticize those who brag and successful hunters deprecate their own achievements (Lee 1969). Humility is not optional but is normative. There are also checks on individuals acquiring coercive influence over others. Coalitions of subordinates will ostracize or, more rarely, execute individuals who display aggrandizing behavior (Boehm 1999). These leveling coalitions (i.e. coalitions in which all partners rank below the target of aggression) are sometimes observed in nonhuman primates (Pandit and van Schaik 2003), but in comparison with small-scale human societies they are generally risky, of small size, less effective, and short-lived (Boehm 1999). Additionally, communities within egalitarian societies often exhibit fluid membership, preventing larger kin groups from dominating other community residents, who can "vote with their feet" in the face of oppression (Knauft 1991). Since the major input into production in most hunter-gatherer societies is voluntary skilled labor rather than monopolizable material resources or land, the opportunities for coercion are limited (Boone 1992; Kaplan et al. 2009).

However, egalitarianism does not preclude hierarchy among adult men. Boehm (1999) has described small-scale, egalitarian societies as "reverse dominance hierarchies" where those who would be dominant have the least power relative to the subordinates allied against them. But this description is misleading. The ability of certain men to dominate others via greater physical size or coalitional support may be limited or suppressed, but status-leveling is better characterized as "counter-dominant" behavior than an actual reversal in hierarchy (Erdal and Whiten 1994). Furthermore, the focus on dominance ignores prestige as an alternate route to social status. Status hierarchies result from both the relative power of individuals to inflict

costs (i.e. dominance) and to confer benefits (i.e. prestige) on other group members (Russell 1938; Hamilton 1976; Henrich and Gil-White 2001; see Cheng and Tracy, Chap. 1, this volume). Group members acquiesce to higher-status individuals because they believe they will avoid harm and/or gain some benefit from their deference. For example, dominance and prestige jointly promoted increased social influence among North American undergraduates interacting in a lab (Cheng et al. 2013). Humans have greater scope for prestige-based hierarchies due to their extensive sharing of food, information, and labor (Kaplan and Gurven 2005) and the technology and material wealth made available by cumulative cultural evolution, i.e., learned improvements that accumulate across generations (Boyd and Richerson 1996; Tomasello 1999).

In this chapter, I argue that status hierarchy among adult men is a human universal, found even in highly egalitarian societies with widespread food-sharing and status-leveling norms. I then evaluate (1) the determinants and (2) the reproductive consequences of male status acquisition in relatively egalitarian, small-scale foragers and horticulturalists. Forager and horticultural political systems vary tremendously, but the modal pattern of their social organization is much more egalitarian and devoid of material wealth inequality compared to pastoralists and agriculturalists (Borgerhoff Mulder et al. 2009). Most horticulturalists are best described as forager-horticulturalists because they tend to supplement their small-scale agricultural production with hunting and gathering. A minority of foragers from the ethnographic record possessed intergenerationally transmitted social class distinctions among adult men (e.g. Kwakiutl of the Pacific Northwest), and many island horticulturalists from Oceania are similarly stratified (e.g. residents of the Trobriand Islands off New Guinea). In this chapter, I also summarize ecological and institutional forces that contributed to the emergence of stratified human societies.

Status Hierarchy is a Human Universal

Social status can mean different things. Status is ego-centric when it changes from dyad to dyad, e.g. “father”, and is socio-centric when it is independent of context, e.g., Roman Catholic “Father” (Service 1962). The common usage of social status invokes its socio-centric meaning and refers to an individual’s relative access to contested resources within their social group (Weber 1922; Davis and Moore 1945; van den Berghe 1978). These resources include material goods, knowledge, and the deference or favor of peers and potential sexual partners. Social status has meaning only when the allotment of contested resources is somewhat stable. If individuals have to fight over contested resources with every social encounter, there is no status hierarchy, only moment-to-moment winners and losers. Hierarchies represent agreements, maintained by deference signals, to facilitate exchange or to avoid the costs of repeated contest competition, as modeled by the war of attrition (Maynard Smith and Price 1973).

In small-scale societies, status hierarchy is most salient with respect to political influence. Service (1975) describes the self-effacing, "first among equals" role of leaders in small-scale societies, who lack coercive authority but act as arbitrators of conflicts and who have differential influence over their peer's opinions and the group consensus-seeking process. Of the !Kung, Shostak (1981) writes:

> Each group has individuals whose opinions carry more weight than those of others—because of age, of having ancestors who have lived in the area longer, or of personal attributes such as intelligence, knowledge, or charisma. These people tend to be more prominent in group discussions, to make their opinions known and their suggestions clear, and to articulate the consensus once it is determined. Despite their lack of formal authority, they function very much as group leaders. (p. 245)

Across foragers, leadership typically emerges when multiple households must coordinate foraging and camp moves. When the Yahgan of Tierra del Fuego congregated to feast on whale, a leader emerged who coordinated the proceedings and appointed a constable to enforce order (Gusinde 1937); whaling among Inuit off the Alaskan coast required coordination among a crew overseen by a captain (Spencer 1959); and Iglulik Inuit in northern Canada identified a leader who instigated camps moves, decided when group hunts were to be started, and who oversaw the division of spoils (Weyer 1932). Leadership is also potentiated by warfare: 74% of foragers in the Standard Cross-Cultural Sample show informal leadership during war (Hooper et al. 2010).

With their influence, informal leaders can occasionally steer outcomes of collective action to favor themselves, their allies, or their kin. Betzig (1986) provides examples from small-scale societies where members of powerful coalitions differentially benefit from arbitration of conflicts (e.g. Copper Inuit: Jenness 1922).

The Determinants of Social Status in Small-Scale Foraging and Horticultural Societies

Social status is granted to those individuals widely perceived as best able to inflict costs or confer benefits on others (Henrich and Gil-White 2001). Attempts to influence these judgments of dominance or prestige often take the form of conspicuous consumption (Bourdieu 1984; Veblen 1899) or public displays of strength, skill, and generosity (Harbaugh 1998; Roberts 1998). Status acquisition strategies need not be consciously motivated; they calculate the expected gains in status based on such factors as the opportunity costs and the expected strategies of conspecifics.

I subdivide status-conferring traits into embodied, material, and relational capital. Embodied capital refers to wealth that is stored as tissue in the body, such as muscle mass or neural tissue (Kaplan 1996). In a functional sense, embodied capital may include strength, health, personality, intelligence, and knowledge. Material capital refers to tangible assets external to the body, which include land, shelter, food, tools, etc. Relational capital refers to an individual's network of social partners (Lin 1999) that includes mates, relatives, friends, followers, or cooperative

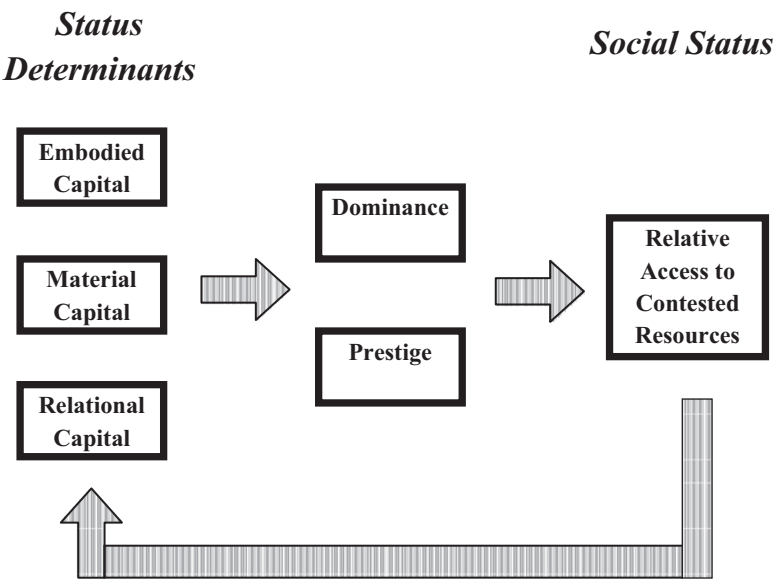

Fig. 9.1 Status and its determinants

partners. Changes in status may then feedback on individuals' wealth in these three types of capital (see Fig. 9.1).

The traits that possess the greatest utility for imposing costs or conferring benefits on others in a particular population should best correlate with social status. Size, strength, and skill in physical combat are components of embodied capital that are valued in leaders of Amazonian societies with histories of intergroup raiding, such as the Mekranoti (Werner 1982), the Xavante (Maybury-Lewis 1974), the Yanomamo (Chagnon 1983), and the Achuar (Patton 2000). However, even in small-scale societies lacking warfare or a warrior culture, influential individuals are often taller and stronger than their peers, as among the Tsimane forager-horticulturalists of Bolivia (von Rueden et al. 2008). Dominant individuals can facilitate collective action in food production or camp moves, by more easily capturing the joint attention of group members and by discouraging defection. A responsibility that often falls to influential individuals among the Tsimane and in other small-scale societies is dispute resolution (von Rueden 2011), and dominant individuals can be more persuasive as arbitrators. Height and muscle mass also signal health, attractiveness, athletic performance, and resource production, which will all increase the value of an individual to potential mates or coalition partners. Dominance can be difficult to disentangle from prestige.

Hunting prowess is the archetypal male skill in foraging societies and is a ubiquitous correlate with social status (Gurven and von Rueden 2006; Smith 2004; Wiessner 1996). Good hunters who generously share meat signal not only their production skill but also their cooperative intent (Frank 1988; Gintis et al. 2001)

and phenotypic quality as a mating partner (Hawkes et al. 2001a; Bird and Smith 2005). Generous meat-sharing is likely to vary as a source of prestige, depending in part upon the level of group-wide sharing and the opportunity to recruit additional political allies or mates through gift giving (Patton 2005). Since the gains to generous meat-sharing can spur competition over who is the most generous, many societies implement norms to prevent conflict over the signaling of prestige via meat distribution. Among the !Kung, delineation of large game carcass ownership is usually attributed to the arrow owner irrespective of who actually killed the animal (Dowling 1968).

Other elements of embodied capital important to status acquisition include expert knowledge of healing or supernatural forces. Spiritual healing among the !Kung is practiced by approximately half of men and a third of women (Shostak 1981) while in less egalitarian small-scale societies, shamans tend to monopolize healing power. In some Amazonian societies, the village headman is also the shaman (e.g. Tapirape: Wagley 1977), while in others these roles are filled by different individuals (e.g. Pemon of Venezuela: Thomas 1982). Oratory skill is typically requisite for gaining political influence within a community, as has been noted with the !Kung (Lee 1969) and the Semai of Malaysia (Dentan 1979). Rhetoric is perhaps most useful to aspiring leaders as a means of shaping the degree to which they are perceived as sharing a common identity with group members.

Since material capital is relatively absent and is traditionally unimportant to production in many small-scale societies, it is not as frequently associated with status as is embodied capital. For example, Mekranoti chiefs of Brazil do not differ significantly from their peers in the number of personal ornaments and tools they own (Werner 1981). On the other hand, most small-scale societies are now part of a market economy, which enables conspicuous consumption of market goods. Among the Tsimane, men who earn more money from wage labor and sales of horticultural produce devote a greater percentage of their income to the purchase of conspicuous leisure items, such as watches and radios (Godoy et al. 2006). Access to novel material wealth is a source of status in both the Tsimane (von Rueden et al. 2008) and the Ache of Paraguay (Hill and Hurtado 1996). Interaction with outside political bodies has also granted influence to individuals whose linguistic skills enable them to act as culture brokers, as in the Mekranoti (Werner 1981) and Tsimane (von Rueden et al. 2008).

Influential men in small-scale societies tend to have more relational capital in the form of kin ties. Yanomamo men with larger intravillage kinship networks are more likely to gain political influence (Chagnon 1988a), and Efe men from the Congo form affiliative bonds with consanguineal male kin to generate allies in the face of competitive social situations (Bailey and Aunger 1989). Among the Martu of the Western Desert of Australia, men with coresident fathers achieved earlier initiation into manhood (Scelza 2010). Marriage is a common strategy for constructing alliances. Hughes (1988) documents several ethnographic examples, including the Nuer of Sudan and Toba of South India, where high-status men are individuals on whom both affinal and consanguineal relatedness are concentrated. Among the Coast Salish of the Pacific Northwest, a man's social status was associated with his

intervillage alliances, established through marriage (Elmendorf 1971). In Amazonian horticulturalists from Conambo, Ecuador, women occasionally broker factional disputes, and men's social support benefit from their wives' roles as mediators (Bowser and Patton 2010).

Whether due to kin or non-kin, men's social support is paramount to status acquisition. The contributions of embodied and material capital to status acquisition are largely due to their effects on relational capital. People seek social proximity to the strong, skilled, generous, and wealthy because of the knowledge and material goods they might acquire (Henrich and Gil-White 2001) and because of the indirect social value of association with powerful individuals. One of the first quantitative tests of the relative contributions to status of embodied, material, and relational capital is from the Tsimane. Status among the Tsimane was evaluated in different contexts, including dyadic fight outcomes, getting one's way in small groups, and influence over outcomes of community-wide meetings (von Rueden et al. 2008). Tsimane men who are larger and stronger are most likely to win dyadic fights, but influence within small groups and at the level of the community is principally due to social support from both kin and non-kin. Furthermore, social support mediates the positive effects of physical size, generosity, education, and income on influence. In other words, men who are strong, generous, skilled, or materially wealthy accrue more political influence in large part because these attributes attract allies and supporters. Longitudinal data confirms the cross-sectional result: larger and more skilled Tsimane men gained more social support over a 4-year period, and increase in social support (but not increase in size or skill per se) associated with increased political influence over that same period (von Rueden 2011). The prominence of social support to status acquisition among the Tsimane accords with other ethnographic reports. For example, Maybury-Lewis (1974) observes that Xavante men achieve higher status due to the in-group social support engendered by their athleticism, oratory skill, hunting ability, sense of humor, and other attributes. According to Barth (1959), "political action…is the art of manipulating…various dyadic relations so as to create effective and viable bodies of supporters, in other words, so as to create corporate political followings."

In most small-scale societies, older men (but not necessarily the oldest men) receive the most deference (Silverman and Maxwell 1978; Simmons 1945). Strength in male foragers peaks in the 20s (Walker et al. 2002), but older individuals retain prestige because they are more likely to be sought after for advice and they have more relational capital in the form of direct descendants. On the other hand, older males lose prestige as their production skill wanes. Hunting returns peak in the late 30s to early 40s (Walker et al. 2002; Gurven et al. 2006). In many modernizing small-scale societies like the Tsimane, older individuals have had limited access to market-related skills, which are an increasingly important predictor of prestige. Maxwell and Silverman (1970) conjecture that rapid institutional change, leading to information obsolescence, translates into reduced prestige for the elderly. Among the Tsimane, community-wide influence peaks in the late 40s in more remote communities but in the late 30s in communities closer to the market town of San Borja (von Rueden 2011).

The Fitness Payoffs to Social Status in Small-Scale Societies

The patterning of individuals' investments in embodied, material, and relational capital over their lives is the result, in part, of naturally selected physiological and behavioral strategies for status acquisition. Comparison of social status and fertility in small-scale societies can provide insight into how natural selection may have acted on status acquisition strategies in ancestral human environments. Modern small-scale societies are instrumental in understanding human evolution not because they are analogues of any original human society but because they reveal how human adaptations operate in the absence of modern healthcare and contraception, significant material wealth, and large, dense populations comprised principally of non-kin.

The reproductive gains to social status may have reached their height in premodern empires, kingdoms, and sultanates, where high social status included sexual access to a large number of women (Betzig 1986). Approximately 8 % of Asian men living between the Pacific Ocean and the Caspian Sea can trace their Y chromosome to Genghis Khan and his relatives (Zerjal et al. 2003). In small-scale societies, social status is not as clearly associated with reproductive advantages and can appear more costly than rewarding. Acquiring and maintaining status is demanding of time and resources, and not just due to generous food-sharing. For example, Yanomamo headmen are constantly involved in dispute resolution, which has the potential to drag them into others' conflicts. They also take responsibility for patrolling the village perimeter for raiders, putting themselves in frequent danger (Chagnon 1983).

Nevertheless, the relationship between status and reproductive success in small-scale societies is often positive. One of the first quantitative investigations of the status-fertility relationship in a small-scale society, among the pastoralist Yomut Turkmen of Iran, revealed that materially wealthy men have more offspring for their age (Irons 1979). Subsequent studies in other small-scale societies found similar evidence of fertility gains to status-determining traits, including hunting skill among the Ache (Kaplan and Hill 1985a) and warriorship among the Yanomamo (Chagnon 1988a).

To the best of my knowledge, Table 9.1 lists all published studies from small-scale foragers and horticulturalists that have quantitatively investigated the relationship between a measure associated with male social status (hunting ability, physical formidability, or political influence) and lifetime fitness (fertility, offspring mortality, or surviving offspring). The studies control for men's age or report completed reproductive histories. Across the societies represented, traits associated with male status correlate positively with higher lifetime fertility fourteen times out of eighteen (78 %). Of the other four relationships, three produce a near significant positive relationship and one, warriorship among the Waroani (Beckerman et al. 2009), produces a significant negative relationship. In only four populations is offspring mortality evaluated as an independent contributor to total surviving offspring. Ache men who are better hunters, taller and heavier !Kung men, and Tsimane men with more influence (but not more dominant Tsimane men) produce offspring who are

Table 9.1 Male status and lifetime fitness across foragers and horticulturalists

	Population	Fitness measures[a]			References
		More surviving offspring	Higher fertility	Lower offspring mortality	
Hunting skill	Ache (forest)		Yes	Yes[d]	Hill and Hurtado (1996); Kaplan and Hill (1985b)
	Ache (reservation)	No[c]	No[c]	Yes	Kaplan and Hill (1985a); Hill and Kaplan (1988)
	Achuar		Yes		Patton (2005)
	Hadza	Yes	Yes	May be[e]	Marlowe (1999, 2000); Hawkes et al. (2001b)
	Kubo	No			Dwyer and Minnegal (1993)
	!Kung	Yes	Yes		Wiessner (2002)
	Lamalera[b]	Yes	Yes	May be[f]	Alvard and Gillespie (2004)
	Meriam	Yes	Yes		Smith et al. (2003)
	Piro	Yes	Yes		Anderson and Kaplan (2002)
	Tsimane	Yes	Yes		Gurven and von Rueden (2006)
Physical formidability	!Kung	Yes	No[c]	Yes	Kirchengast (2000)
	Tsimane	Yes	Yes	No[c]	von Rueden et al. (2011)
	Waorani	Neg	Neg	Neg	Beckerman et al. (2009)
	Yanomamo		Yes		Chagnon (1988a)
Political influence	Achuar		Yes		Patton (2005)
	Aka		No[c]		Hewlett (1988)
	Ifalukese		Yes		Turke and Betzig (1985); Betzig and Turke (1992)
	Mekranoti	Yes			Werner (1981)
	Meriam	No			Smith et al. (2003)
	Tsimane	Yes	Yes	Yes	von Rueden et al. (2011)
	Yanomamo		Yes		Chagnon (1979); Chagnon et al. (1979)
% Studies showing higher fitness:		71 *(10/14)*	78 *(14/18)*	67 *(4/6)*	

[a] Status–fitness relationship is positive if "yes," null if "no," negative if "neg," or suggestive of positive relationship if "maybe"
[b] Harpooners only
[c] But in predicted direction
[d] Ages 5–9 only
[e] Offspring show greater seasonal weight increase
[f] Offspring have higher body mass indices

less likely to die as children. There is suggestive evidence that the children of better Hadza hunters and Lamelera whale harpooners are also less likely to die, based on their growth rates and body mass indices, respectively. In contrast, children of acclaimed Waorani warriors experience higher mortality. For ten results out of fourteen (71%), traits associated with status correlate with more surviving offspring, whether the result of higher fertility, lower offspring mortality, or both. Again, the Waorani data alone indicates an opposite effect. Beckerman et al. (2009) suggest that, unlike the Yanomamo, the Waorani have no cultural restriction on the timing of raids as revenge for previous homicides. A lack of downtime between raids, they argue, precludes successful warriors from translating their status into reproductive gains. In addition, women were more likely to be killed during raids than abducted, relative to the Yanomamo.

While cross-cultural evidence from small-scale societies suggests that traits conducive to male status acquisition often experienced positive selection throughout human history, the means by which high-status men achieve higher fitness remains under-investigated. Most of the studies listed in Table 9.1 are selective in their analysis of the factors responsible for increases in fertility or offspring survivorship among high-status men. For example, few studies report extramarital affairs. Whether the fitness gains to status are concentrated within the nuclear family or within the context of extramarital affairs is important to debates about the evolution of human pair-bonding and male parental investment (Gurven and Hill 2009; Hawkes et al. 2010). Identifying the proximate pathways by which status generates current fitness sheds light on the kinds of social relationships evolution has motivated men to maintain.

Figure 9.2 illustrates the potential pathways by which status is translated into fitness gains. These pathways include: (1) the length of a man's reproductive career and his number of mates, (2) the age, fecundity, health, and productivity of his mates, (3) alliances and exchange partnerships, and (4) resources gained as a result of others' deference or acquiescence. These pathways may interact in more complex ways than depicted. For example, the quality of a wife with respect to offspring survival may depend on the allies (including affinal kin) a man expects to gain through the marriage. Alliances also facilitate mate acquisition. Humans use kin and allies to create, manipulate, or circumvent marriage rules (Chagnon 1988b), to coercively acquire women from neighboring groups (Chagnon 1983), and to acquire women via trade or tribute (Betzig 1986).

Pathways (5) and (6) in Fig. 9.2 represent alternative explanations for the status-fitness relationship. Social status may play a minimal role in a man's number of surviving offspring if they result more from his individual productivity and inherited kinship network than from his ability to procure quality mates, engender others' deference, or recruit cooperative partners. Furthermore, status may result from having more offspring, rather than the reverse, due to incentives to increase one's productivity and social support with increasing child dependency.

Pathway 1 High-status men typically have greater mating opportunity, but they accomplish this differently across small-scale societies. While polygyny is observed at low frequencies in most of the societies in Table 9.1, only four studies explicitly

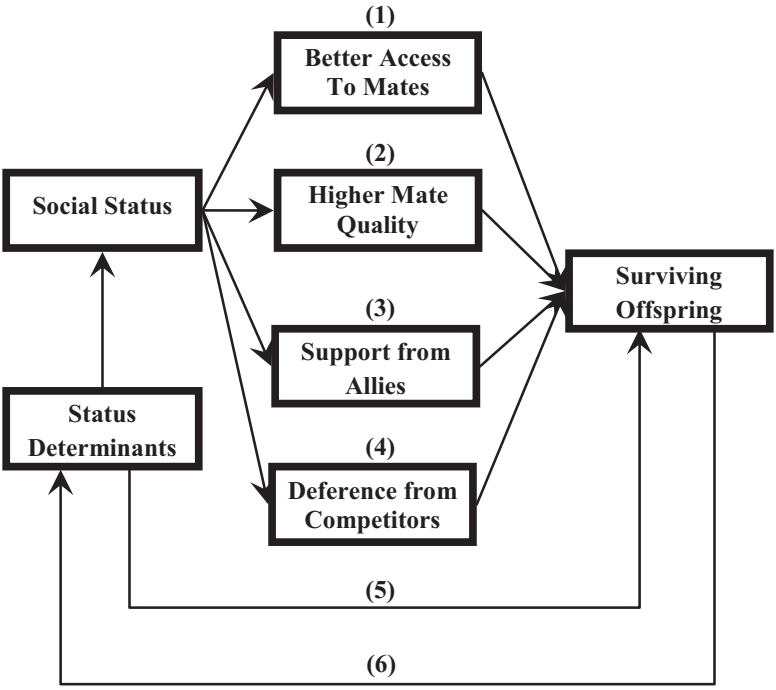

Fig. 9.2 The pathways from social status to lifetime fitness. (From von Rueden et al. 2011)

linked polygny to status. Influential Aka and Yanomamo men are more likely to be polygynous while Waorani warriors and influential Mekranoti men are not. Acclaimed Meriam hunters have more serial wives but not so for the best hunters among the Hadza or the !Kung. Age at first reproduction (AFR) is more commonly associated with status. In four of six societies, high-status men marry wives with an earlier AFR, and in the two societies where they do not, the men themselves have an earlier AFR. Among the Tsimane, a wife's first pregnancy usually follows a year or two after marriage, so a later AFR by low-status men and their wives is due more to late marriages than longer waiting time to first birth.

Men are motivated to pursue status because of fitness gains both within and outside of marital unions. Extramarital affairs are reported for three societies: the reservation Ache, Mekranoti, and Tsimane. Better Ache hunters, more influential Mekranoti men, more physically formidable Tsimane, and more influential Tsimane have higher intramarital offspring survivorship *and* more extramarital affairs. The reproductive measures reported for the other societies in Table 9.1 are not explicitly tied to within-marriage reproduction, but the fertility they report is not likely to be concentrated within extramarital liaisons. While women should prefer husbands who exhibit resource accruing power and commitment, they may place more weight on indicators of 'good genes' when considering extramarital affairs. Masculinized traits such as muscle mass may be costly signals of genetic quality in the face of

testosterone-linked immune-suppression (Folstad and Karter 1992) and other trade-offs due to increased mating effort (Gangestad and Simpson 2000). Women may prefer dominant, physically robust men as short-term mates due to the developmental stability and 'good genes' these traits signal. Women may not prefer dominant men as marital partners if dominant men are more likely to commit partner-directed aggression or provide unreliable paternal investment. A study of US undergraduate women found they preferred prestigious men over dominant men as romantic partners, particularly in the context of long-term relationships (Snyder et al. 2008).

Pathway 2 High-status men do not always marry higher quality wives, whether in terms of their fecundity (as proxied by interbirth interval) or productivity. The wives of high-status Tsimane and Lamelera men do not have lower interbirth intervals while the wives of influential Ifalukese men do. Controlling for the numbers of consumers and producers within families, wives of dominant or influential Tsimane men neither spend more time in food production nor produce more calories per day than other men's wives. These results contrast with data from the Hadza (Hawkes et al. 2001b), where the effects of male productivity and status on intramarital reproduction were mediated by wife's productivity. The wives of high-status men may not have to increase their productivity to improve offspring survivorship when their husbands are better providers and receive more social support from allies, both kin and non-kin. Wives might have better support networks themselves.

Pathway 3 Greater social support in the form of trading partners and allies is a ubiquitous covariate with measures of social status. In Table 9.1, six of six societies demonstrate this relationship. However, investment in social support is not always beneficial for men's families, at least in the short term. Sharing decisions which optimize food consumption via reciprocal altruism may trade off with sharing decisions which optimize alliance formation or mating display. Influential Tsimane men have reputations for sharing meat more widely but they do not have more food-sharing partners nor do their families receive more calories per day from other households (von Rueden et al. 2011). Likewise among the Achuar (Patton 2005), Ache (Kaplan and Hill 1985b), Meriam (Smith et al. 2003), Martu (Bird and Bird 2010), and Lamelera (Alvard and Gillespie 2004), generous food sharing or greater contribution to collective food production is not often reciprocated in kind. In only two of ten cases (from Table 9.1) are high-status men better direct providers for their families. Investments in social support via generosity may only pay off to men and their families over the long term, as a form of insurance. Generous Ache hunters are more likely to be provisioned when sick (Gurven et al. 2000), and better !Kung hunters have more *hxaro* exchange partners (Wiessner 2002), who are long-term sources of not only food but also mates and political support. The magnanimity of the best Martu hunters of western Australia gives them access to ritual power as older adults (Bird and Bird 2010). Men in one Tsimane village were interviewed concerning the help they received after occasional crop loss. Only five men, all in the top 25 % of political influence within the community, reported aid to their families from non-kin (von Rueden 2011).

Pathway 4 Exchange between higher- and lower-status men does not always involve a bidirectional flow of benefits. During disputes, physically formidable or politically influential Tsimane men receive more deference from their peers (von Rueden et al. 2011), who may be ceding resources simply to avoid the costs of contest competition.

Pathways 5 and 6 Most studies of status and reproductive success do not test for confounding variables. Influential Tsimane men tend to be more productive and draw on a larger intravillage consanguineal kin network (pathway 5), but these variables alone do not account for their fitness gains. Better hunting ability and more numerous consanguineal kin increase Tsimane men's total surviving offspring in part because of their effects on political influence. Evidence from the Tsimane also discredits current offspring dependency as a principal motivator of status acquisition (pathway 6). The ratio of consumers to producers within men's households in 2005 is not associated with change in men's influence over the subsequent 4 years (von Rueden 2011), suggesting that status begets more surviving offspring rather than the reverse.

The Tsimane study (von Rueden et al. 2011) is the first to directly compare all the pathways from Fig. 9.2 to unravel the status-fitness relationship. Physically dominant Tsimane men produce more surviving offspring in large part because dominant men are also more likely to be influential. Political influence results in more surviving offspring because it begets social support and marriage to a younger wife. The latter result begs the question of how women or their kin discriminate among men as prospective husbands. Tsimane men's influence does not peak until two decades after marriage age. It may be that young men's future gains in community-wide influence are highly predictable based on their embodied, material, and relational capital as adolescents. In small-scale societies, adolescence is likely a critical window for acquiring status, akin to the critical period for language acquisition in early childhood. Among the Aka, the cooperative partnerships forged in adolescence are maintained into adulthood (Hewlett and Hewlett 2013). Teenage angst in industrialized, large-scale societies may be the product of a psychology, shaped in small-scale societies, that believes the social status of our middle school years determines our status as adults. Testing this hypothesis requires more study of adolescence in small-scale societies, particularly as part of longitudinal studies that assess changes in status and fitness across the lifespan.

The Origins of Stratification

A minority of hunter-gatherers from the ethnographic record are stratified by social class. Most famous are foragers from the Pacific Northwest, whose economies were based on highly productive salmon runs, whose leaders inherited their political titles, and who practiced warfare and slavery (Ames 2003). A number of ecological factors have been linked to stratification in hunter-gatherers, including

resource abundance (Gould 1982), seasonal food storage (Testart 1982), sedentism (Kelly 1995), and population density (Johnson and Earle 1987; Keeley 1988; Testart 1982). With more abundant and predictable resources, households are less dependent on sharing to buffer risk in food production. For example, Ache living on reservations have access to horticultural and store-bought goods, and they share food less widely compared to Ache on forest treks (Gurven et al. 2002). Less interdependence across families de-emphasizes status-leveling norms. In the Kalahari, access to water-storing melons and domestic animals led to wealth inequality and increased polygyny among the //Gana !Kung (Cashdan 1980). The //Gana not only tolerated resource accumulation but offered respect to the wealthy rather than ridicule. In contrast, the Dobe !Kung experienced much greater variation in their food supply and were much more egalitarian (Cashdan 1980). Egalitarianism is not to be viewed as a natural state, a baseline upon which layers of stratification are added as progressive evolutionary stages. Rather, egalitarianism is a social contract maintained by norms and sanctions and an ecology in which food production is risky and sharing necessary, even for the best hunters.

The distribution of resources across the landscape, in addition to their abundance and predictability, is integral to the emergence of stratification. Where resources are heterogeneously distributed, profitable resource patches can be defended by advantaged individuals or kin groups (Dyson-Hudson and Smith 1978). This privatization of resource patches potentiates patron-client systems (Boone 1992; Smith and Choi 2007). Clients accept their subordinate economic position due to disincentives to dispersal, including lower concentration of productive habitat elsewhere and social (e.g., unfriendly neighboring groups) or environmental (e.g., mountains, ocean, desert) circumscription (Carneiro 1970; Kennett et al. 2009). With the intergenerational transmission of property, inequality ratchets up with each generation (Bowles 2005; Borgerhoff Mulder et al. 2009).

In the Pacific Northwest, chiefs and subchiefs inherited their titles and the rights to salmon runs via primogeniture, and they determined when and how commoners conducted salmon harvests. Chiefs were also entitled to a share of their followers' harvest (Boas 1921). Control of surplus food is the lifeblood of chiefly power, enabling them to subsidize warfare and infrastructure and to build political support via generosity (Clark and Blake 1994; Hayden 1995). The potlatches of the Pacific Northwest were grandiose, ceremonial displays of chiefs' embodied, material, and relational capital, meant to shore up political support at home and endebt the neighboring chiefs who were in attendance. At the potlatch, the seating arrangement, order of distribution of food and property, and the size or worth of gifts all reflected relative positions of the assembled guests (Drucker and Heizer 1967). Among the Gitkasan, individuals would move to new settlements after potlatches where they felt their leader was not as generous, hence powerful, as others (Adams 1973).

Growing populations add fuel to stratification. Productive resource patches support large, dense populations, which foster technological innovation and occupational specialization (Henrich and Boyd 2008). Elites can underwrite and exploit new technology to expand their power. Among the Chumash of the central California coast, hereditary chiefs financed the construction of seagoing *tomal* canoes,

which they used to expand trade up and down the California coast. Chumash groups who lacked *tomals* also lacked hereditary chiefs (Arnold 2010).

Large, dense populations also increase intragroup conflict and the difficulty of collective action. Group members may prefer stratification when more formal leadership helps solve the problems of life in large groups and facilitates collective action in production, trade, defense, or aggression (Steward 1955; Service 1962; Hooper et al. 2010). The Paiute occupying the rich habitat of Owens Valley were more stratified than their neighbors, partly because their irrigation systems benefited from central management (Steward 1933). To coordinate production and maintain social order, Plains Indian bands elected a chief and a constable when they coalesced for the annual buffalo hunt (Lowie 1948). Among prestate indigenous North Americans in general, the number of bureaucratic tiers of decision-making and the number of leadership functions (e.g. military, religious, judicial, productive) increase with a society's maximal community size (Feinman and Neitzel 1984). A nested hierarchy of offices facilitates communication and coordination in large groups (Johnson 1982) while reducing political dissatisfaction by maintaining the face-to-face leadership of more egalitarian societies (Richerson et al. 2003).

Unsurprisingly, high status carries greater reproductive rewards in stratified foragers. Throughout western North America, the privatization of resource patches was associated with increased levels of polygyny (Sellen and Hruschka 2004). Among the Chumash, polygyny was largely restricted to chiefs (Priestley 1937). Chiefs from the Pacific Northwest were also more likely to be polygynous due to bridewealth expenses, and they obtained female slaves through trade or the spoils of war (Barnett 1938). Australian aborigines are an exception to this pattern, with gerontocracies and high levels of polygyny despite egalitarianism in access to food resources and low population density (Hiatt 1996). More than 50% of all marriages among the Tiwi were older, polygynous men marrying younger women (Hart and Pilling 1960). Hawkes (2000) has suggested that this "Australian paradox" can be tied to the extinction of megafauna in Australia with the arrival of modern humans, limiting the prestige young men can acquire as hunters. On the other hand, generous sharing of kangaroo or monitor lizard meat is key to acquiring ritual power among aborigines, such as the Martu of the Western Desert (Bird and Bird 2010).

Like foragers, horticultural societies vary tremendously in political organization. At one end of the spectrum is the relative egalitarianism of Amazonian horticulturalists like the Tsimane and at the other is the ranked lineage system of hereditary political offices found among Polynesian chiefdoms (Kirch 1984). Land is more of a limiting factor in food production in Polynesia and in other Oceanic societies, promoting property rights, greater wealth disparity, and conflict (Kaplan et al. 2009). In highland New Guinea, Big Men performed military and diplomatic leadership in the face of intra- and intergroup conflict (Meggitt 1977). Big Men of the Mt. Hagen area engaged in competitive exchanges of pigs that served a function similar to the potlatch of the Pacific Northwest (Strathern 1971). Even though Big Men did not formally inherit their positions, their offspring were more likely to become leaders themselves due to inheritance of their fathers' material capital, skill, and social contacts (Wiessner 2010). Where leadership was formally inherited, as in the Trobriand

Islands, chiefs enjoyed rights denied to other men, including the right to multiple wives (Weiner 1988).

In pastoral small-scale societies, polygyny is common and variance in male status and reproductive success is increased relative to most foragers and horticulturalists (Betzig 2012). Men's status depends primarily on their material capital, specifically the number of cattle they own. Among the Kipsigis (Borgerhoff Mulder 1987), Mukogodo (Cronk 1991), and Gabbra (Mace 1996) of East Africa, cattle wealth is the biggest determinant of men's number of wives and lifetime reproductive success. Across human societies in general, the more that defensible material capital determines men's production, the greater the status and reproductive disparities (Kaplan et al. 2009).

Conclusion

Social status is a ubiquitous motivator of human behavior. From the most egalitarian to the most hierarchical human society, individuals who acquire more dominance or prestige receive privileged access to contested resources, including greater political influence and mating opportunity. In small-scale societies, status-leveling coalitions and household mobility restrict the opportunity for physically dominant individuals to coerce their way to power. Nevertheless, greater height or weight is sometimes a characteristic of leaders in these societies, which may be due to the greater efficacy with which large leaders can arbitrate disputes, coordinate collective action, or represent their peers' interests when negotiating with outside groups. Probably for similar reasons, individuals in industrialized states prefer leaders who are taller (Ellis 1994; Murray and Schmitz 2011).

Production skill and generosity are important determinants of status across small-scale societies because they attract political allies, trading partners, and mates. Attractiveness as a husband and extramarital sex partner enable high status men in small-scale societies to produce a greater number of offspring. However, men do not pursue status simply to increase their number of mates. Support from allies, particularly during times of conflict or sickness, can be instrumental to the health of men and their families (von Rueden 2011; Gurven et al. 2012).

The frequency with which high-status men in small-scale societies achieve higher lifetime fitness suggests status conferred similar reproductive advantages in ancestral human societies. Why then is variance maintained in traits conducive to status acquisition, such as physical size or prosociality, if these traits have been subject to such long-term selection pressure? One possibility is that the genotypes of high-status individuals represent a fitness peak which mutation and sexual recombination break down in successive generations. Among Indonesian foragers, horticulturalists, and agriculturalists, high fertility along patrilines rarely persists for more than a few generations (Lansing et al. 2008). While most heritable genetic variation particular to status achievement will be associated with autosomal genes and not the few nonrecombining genes on the Y chromosome, the more polygenic

the status-conferring trait the more likely mutation will check the effects of selection and maintain genetic variation. A related possibility is that status achievement results from conditional behavioral responses to uncorrelated genetic variation (Smith 2011), such as ontogenetic calibration of one's level of extraversion in response to anticipated adult height and muscle mass (Lukaszewski and Roney 2011). Balancing selection may also operate if the fitness advantage to status-conferring traits differs by sex or depends on their frequency in the population. Future studies in small-scale societies will be instrumental in testing these theoretical possibilities.

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