

## 1 CHAPTER 8

2 Evolution, Social Influence,  
3 and Sex Ratio4 VLADAS GRISKEVICIUS, JEFFRY A. SIMPSON, KRISTINA  
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8 **O**ne of Bob Cialdini's lasting contributions to science and practice is his  
9 identification of the principles of influence. One of these principles—  
10 scarcity—states that opportunities and objects are more desirable when  
11 they are scarce or dwindling in availability. From “only one minute remain-  
12 ing!” to “a maximum of four per person!,” the scarcity principle has been  
13 applied to many products, services, or other wares peddled by merchants.

14 In this chapter, we examine a different dimension of the scarcity princi-  
15 ple by considering how scarcity applies to people. Specifically, we explore  
16 how behavior is influenced when there is a “scarcity” of men or women.  
17 Although the ratio of men to women in human populations tends to be  
18 roughly equal (James, 1987), the question of what happens when one  
19 sex becomes scarce is much more than academic. Sex ratio has begun to  
20 deviate markedly from equality (50% men and 50% women) in many  
21 populous countries (Guilmoto, 2009; Zhu, Li, & Hesketh, 2009). In the  
22 most striking case, China will soon have many millions of surplus males,  
23 producing an adult sex ratio of over 120 males to 100 females (Hesketh,  
24 2009). In addition to global demographic shifts, sex ratios can also differ  
25 within a given region. For example, in the United States, the ratio of men to  
26 women is 116 to 100 in Las Vegas, but only 88 to 100 in Birmingham,  
27 Alabama (Kruger, 2009).

28 This chapter addresses how the ratio of males to females within a  
29 population—a concept studied extensively in evolutionary biological

1 approaches to animal behavior—impacts *human* behavior. Although the  
 2 human mind is believed to use sex ratio information as a cue to adjust  
 3 mating behavior and family life (Guttentag & Secord, 1983; Hesketh &  
 4 Zhu, 2006), we consider how the ratio of men relative to women might  
 5 affect assorted human behaviors, ranging from economic decisions to career  
 6 choices. When aggregated in large populations, these effects could have sig-  
 7 nificant societal and economic consequences. We also consider links  
 8 between psychology and physiology, discussing possible hormonal mecha-  
 9 nisms that might regulate behaviors governed by sex ratio differences.

10 The scarcity of men and women—an inherently *social* aspect of the  
 11 environment—also has important implications for social influence.  
 12 Because sex ratios can differ in workplaces, classrooms, negotiation rooms,  
 13 juries, and other settings where important decisions are made, a consider-  
 14 ation of sex ratio introduces new directions for the study of social influence.

## 15 EXISTING RESEARCH ON SEX RATIO

16 Sex ratio tends to exert the strongest effects on behavior when an imbalance  
 17 exists in reproductive-aged males and females (James, 1987). This specific  
 18 sex ratio is called the *operational sex ratio*, which is the ratio of reproduc-  
 19 tively available males to females in a population (Emlen & Oring, 1977;  
 20 Fossett & Kiecolt, 1991).

21 Animal research shows that changes in sex ratio influence mating effort,  
 22 which includes mate search, courtship, and intrasexual competition  
 23 (Kvarnemo & Ahnesjö, 1996; Taylor & Bulmer, 1980). For example, as sex  
 24 ratio shifts from being female-biased (relatively more females) to male-  
 25 biased (relatively more males), male gray mouse lemurs spend more effort  
 26 on mate search (Eberle & Kappeler, 2004), and male European bitterlings  
 27 intensify intrasexual competition over mates (Mills & Reynolds, 2003).  
 28 Similarly, in the two-spotted goby, male–male competition increases as the  
 29 sex ratio moves from female-biased to male-biased across the mating season  
 30 (Forsgren, Amundsen, Borg, & Bjelvenmark, 2004).

31 Much correlational research also suggests that sex ratio is systematically  
 32 related to human mating patterns (e.g., Barber, 2001; Licher, Kephart,  
 33 McLaughlin, & Landry, 1992; Pollet & Nettle, 2008; Schmitt, 2005; Stone,  
 34 Shackelford, & Buss, 2007). Most of this work has focused on how sex ratio  
 35 relates to marriage and family outcomes, supporting predictions derived  
 36 from evolutionary biology, social psychology, and mating economics  
 37 (Baumeister & Vohs, 2004; Gangestad & Simpson, 2000; Kenrick & Luce,  
 38 2000; Pederson, 1991). For example, whereas female-biased sex ratios  
 39 (relatively more women) are historically associated with lower marriage

1 rates, more out-of-wedlock births, and lower paternal investment, male-  
 2 biased sex ratios are associated with the reverse patterns (Guttentag &  
 3 Secord, 1983; South & Trent, 1988). Sex ratio also appears to affect intra-  
 4 sexual competition in humans. As members of one sex become scarce,  
 5 members of the more abundant sex should become more intrasexually  
 6 competitive. Indeed, male aggression and violence tend to increase as pop-  
 7 ulations becomes more male-biased (Barber, 2003).

## 8 EMERGING RESEARCH ON SEX RATIO

9 Given the lack of causal evidence regarding whether sex ratio influences  
 10 human behavior (Hesketh & Zhu, 2006), we have begun conducting exper-  
 11 iments to test whether perceived sex ratio actually changes psychology  
 12 and behavior. Because sex ratio is most directly relevant to mating concerns,  
 13 we began by examining whether manipulating perceived sex ratio influ-  
 14 ences relationships (Kim, Griskevicius, & Simpson, 2010). Individuals in  
 15 committed relationships first read news articles describing the local popu-  
 16 lation as either male-biased or female-biased. Afterward, people indicated  
 17 how satisfied they were in their current relationship. We found that, when  
 18 individuals in relationships perceive that there are fewer opposite-sex indi-  
 19 viduals in their local environment, both men and women become more  
 20 satisfied with their relationships and feel psychologically closer to their  
 21 partners. However, when individuals in relationships perceive that their  
 22 partners have more romantic alternatives, men and women use different  
 23 tactics to prevent their partners from leaving the relationship. In particular,  
 24 when there is a scarcity of women, men in relationships become more vigi-  
 25 lant and intrusive, attempting to prevent their partners from engaging  
 26 in activities that might threaten the relationship. In contrast, when there is  
 27 a scarcity of men, women in relationships become less intrusive and give  
 28 their partners greater freedom, overlooking potential transgressions.

29 These experimental findings have interesting implications for how sex  
 30 ratio might influence relationships, such as by creating biases in mate  
 31 perception (Haselton & Nettle, 2006). For example, female-biased ratios  
 32 might lead women to develop positive illusions of their male partners, per-  
 33 ceiving their current mates as being better than they really are. Such posi-  
 34 tive illusions could, in turn, motivate women to retain their mates. Because  
 35 sex ratios can differ widely within different regions, these imbalances may  
 36 have interesting implications for relationships in different geographical  
 37 regions. For example, given that Las Vegas has one of the most male-biased  
 38 populations in the United States, professional gamblers living near the strip  
 39 might actually be *more* committed husbands.

## 1 Influence of Sex Ratio Beyond Romantic Relationships

2 Sex ratio might also impact many other areas of life. To begin examining  
 3 this possibility, we tested how perceived sex ratios affect financial decisions,  
 4 preferences, and expectations regarding saving, borrowing, and spending  
 5 (Griskevicius, Tybur, Ackerman, Delton, & Robertson, 2010). In one  
 6 experiment, participants viewed photo arrays indicative of the local popula-  
 7 tion that were either male-biased or female-biased. Participants then made  
 8 financial choices related to the time-value of money. For example, people  
 9 chose between actually receiving \$37 tomorrow versus receiving \$54 in  
 10 33 days. Sex ratio had a significant effect on men's (but not women's) finan-  
 11 cial choices, whereby male-biased sex ratios led men to opt for smaller,  
 12 more immediate gains. This finding is consistent with the idea that, as sex  
 13 ratio becomes more male-biased, men invest more in *current* mating effort  
 14 and intrasexual competition.

15 Consistent with the notion that a scarcity of women leads men to prefer  
 16 immediate monetary gains, a second study found that male-biased sex  
 17 ratios led men to both save less money from a paycheck and be more willing  
 18 to borrow money for immediate purchases (Griskevicius et al., 2010).  
 19 Specifically, male-biased sex ratios led men to cut their monthly savings  
 20 by an average of 44.7%, and to almost double the amount of money they  
 21 wanted to borrow each month. Supporting the idea that this money should  
 22 be spent on mating effort, a final study found that male-biased sex ratios  
 23 led both women and men to expect men to spend more money on mating-  
 24 related products. When there were relatively more men, men were expected  
 25 to spend an average of \$6.01 more for a Valentine's Day gift, \$1.51 more  
 26 on an entrée on a dinner date, and \$278 more for an engagement ring. These  
 27 male-specific findings are consistent with other research indicating that  
 28 men's mating success is linked to financial resources in many cultures (Buss,  
 29 1989 and that mammalian females become choosier when exposed to male-  
 30 biased sex ratios (Balshine-Earn, 1996; Kvarnemo & Forsgren, 2000).

31 Consideration of how sex ratio influences financial decisions suggests  
 32 that the male-biased demographic shifts currently occurring in many parts  
 33 of the world (e.g., China) could have large economic consequences.  
 34 Consider the fate of an aging generation of men who, as younger adults,  
 35 spent and borrowed money instead of saving it. Caring for such popula-  
 36 tions will require increasing government expenditures. This problem will  
 37 be exacerbated if there are fewer younger workers to support this large  
 38 population of pensioners. But our findings may also have important practi-  
 39 cal implications. Many contemporary economic and social problems  
 40 have been caused by excessive financial risk-taking that has prioritized

1 short-term rewards over long-term stability (e.g., investing in subprime  
2 mortgages, drilling for oil in delicate environments). When sex ratios  
3 become more male-biased, problems associated with financial risk-taking  
4 could become even more prevalent. Our studies, however, suggest reasons  
5 for optimism. We have found that men's preferences shift toward less impul-  
6 sive and more prudent financial choices merely by presenting them with  
7 visual images or written depictions of purported local female-biased sex  
8 ratios. This suggests that managers might be able to use sex ratio cues  
9 to create environments that facilitate more judicious financial decision-  
10 making. For example, office spaces might be assigned strategically to create  
11 a female-biased ratio of employees in a particular location of the office  
12 where risk-aversion is desired.

13 We have also begun examining how sex ratio impacts men's and women's  
14 desire to pursue a career. Consider how the number of men and women  
15 in the local environment might affect choices between investing in one's  
16 career (e.g., climbing the corporate ladder) versus settling down and  
17 starting a family. We have found that when sex ratios are female-biased,  
18 women prioritize their careers over starting a family (Durante, Griskevicius,  
19 Cantu, & Simpson, 2010). This suggests that perceptions of the availabil-  
20 ity of mates can have dramatic consequences for whether women choose  
21 a briefcase over a baby. Indeed, male-biased sex ratios led women to opt-  
22 out of the workplace and desire to start a family instead. Men's motivations  
23 for careers show similar patterns, whereby male-biased sex ratios lead men  
24 to invest more heavily in their careers, consistent with the notion that  
25 a scarcity of females motivates males to intensify intrasexual competition.  
26 These findings have important implications for how the availability of mates  
27 might also impact educational attainment, such as whether people spend  
28 many years earning a postgraduate degree or forgo college altogether.

29 Recent research also suggests that the salience of same-sex rivals, one  
30 component of sex ratio, can even influence religious beliefs (Li, Cohen,  
31 Weeden, & Kenrick, 2010). After individuals viewed dating profiles of  
32 attractive same-sex people, they became more religious and more sup-  
33 portive of stricter social mores. These findings are consistent with the prem-  
34 ise that religiosity might serve as a strategic component of one's mating  
35 strategy (Weeden, Cohen, & Kenrick, 2008). Because greater religiosity  
36 is typically associated with enforcing monogamy and relationship com-  
37 mitment, it makes adaptive sense to become more religious (and more  
38 enforcing of relationship commitment) when there is an abundance of  
39 suitors vying for one's current romantic partner. Religiosity, however, is  
40 malleable. When men viewed dating profiles of attractive women, men  
41 became less religious.

## 1 Implications for Future Research

2 Sex ratio is likely to have important effects on many areas of life, including  
 3 person perception, aggression, consumer behavior, and friendship. Con-  
 4 sider, for example, whether a scarcity of women should lead men to behave  
 5 more cooperatively or more competitively toward other men. Although  
 6 male-biased sex ratios tend to amplify intrasexual competition, this does not  
 7 necessarily mean that men will blindly act more competitively. One possi-  
 8 bility is that a scarcity of women will lead men to tighten coalitional bonds  
 9 with male allies, similar to the way in which middle-ranking chimpanzees  
 10 form coalitions to topple troop leaders (de Waal, 2000). If so, male-biased  
 11 sex ratios might lead men to be more competitive with strangers, but more  
 12 cooperative with individuals from their own coalition (see Van Vugt, De  
 13 Cremer, & Janssen, 2007). Women might behave similarly in response to  
 14 female-biased sex ratios, but future research is needed to clarify the similari-  
 15 ties and differences in men's and women's evolved affiliation psychologies.

16 Sex ratio may also have important consequences in smaller settings, such  
 17 as when the ratio of men to women differs in an office, classroom, business  
 18 negotiation, or on a jury. For example, men often vie for status by intention-  
 19 ally disagreeing with other men (Griskevicius et al., 2006). To the extent  
 20 that intrasexual competition intensifies under male-biased sex ratios, court-  
 21 room juries, which are composed of twelve strangers, might be less likely  
 22 to reach consensus when there are more men than women. Sex ratio differ-  
 23 ences might also have dramatic consequences for businesses. Most con-  
 24 sumer products, for example, are first tested extensively in focus groups,  
 25 which are used by companies to decide whether a product idea should  
 26 be pushed forward or abandoned. Sex ratio could affect the degree to which  
 27 focus groups judge products, not on their inherent qualities but on extrane-  
 28 ous factors such as the number of same-sex individuals in a focus group.  
 29 For example, a scarcity of women in a mixed-sex group is likely to make  
 30 men more competitive, leading them worry more about their own status  
 31 than the accuracy of their judgments. By understanding how the mere  
 32 number of men and women in a setting affects attitudes and behavior, real  
 33 or perceived sex ratios could be arranged strategically to facilitate desired  
 34 influence outcomes.

## 35 INDIVIDUAL DIFFERENCES AND SEX RATIO

36 Thus far, we have discussed how a skew in sex ratio can produce similar  
 37 types of responding by most people. However, sex ratio might some-  
 38 times exert different effects on different individuals. Recent animal research,

1 for example, shows that male-biased sex ratios lead different males to adopt  
 2 alternate mating tactics (Magellan & Magurran, 2007; Weir, Grant, &  
 3 Hutchings, 2010). These findings are consistent with the notion that  
 4 psychological adaptations, such as those that are sensitive to sex ratio cues,  
 5 are designed to be sensitive not only to external factors (i.e., situations),  
 6 but also to internal factors (i.e., individual differences).

7 Which individual differences are likely to be most important? Consider  
 8 the mating tactics of scorpionflies (Thornhill, 1980), which use two mating  
 9 tactics: a chivalrous tactic of providing a prospective mate with a gift  
 10 (a tasty and nutritious dead insect), or a vulgar tactic that forces copulation  
 11 without a gift. Although the gift tactic is much more effective at leading to  
 12 a successful mating, it is difficult and time-consuming to find desirable gifts.  
 13 In contrast, whereas the forced mating tactic is much less effective at pro-  
 14 ducing a mating, it does not require looking for any gifts. The specific tactic  
 15 adopted by a male depends on the environment (e.g., the level of intrasex-  
 16 ual competition) and the male's *competitive ability*.

17 In environments that contain many rivals (e.g., those with male-biased  
 18 sex ratios), male scorpionflies that have high competitive ability use the gift  
 19 tactic. But the same rival-heavy environment leads males that have low  
 20 competitive ability to use the forced mating tactic. This divergent pattern  
 21 makes adaptive sense when one considers that the costs associated with the  
 22 gift tactic are not identical for all males. When there are many rivals com-  
 23 peting for mates, only the most capable males can find and secure scarce  
 24 gifts. Thus, even though the gift tactic is effective for males who are best  
 25 able to secure gifts, it is ineffective for less capable males, leaving them with  
 26 few opportunities to mate. Accordingly, it makes adaptive sense for less  
 27 capable males to switch to a different tactic, especially when intrasexual  
 28 competition is high.

## 29 **Recent Findings Highlighting Individual Differences**

30 We have started to examine whether sex ratio might produce different out-  
 31 comes depending on an individual's mate value. Mate value reflects a per-  
 32 son's general desirability as a mate, as perceived by similar-aged opposite-sex  
 33 people. Mate value correlates with a person's ability to compete for mates  
 34 because higher mate-value individuals can attract and retain higher-quality  
 35 and/or more mates. We predicted that a scarcity of mates should lead those  
 36 who have higher versus lower mate values to use different tactics to cope  
 37 with increased competition.

38 Earlier, we noted that a scarcity of the opposite sex led people to invest  
 39 more in their careers. But whereas some careers provide excellent job

1 stability (e.g., teacher, government administrator), other careers provide  
 2 better opportunities for financial rewards (e.g., stock broker, inventor).  
 3 In our research, we have found that, for higher mate-value men, increased  
 4 competition due to male-biased sex ratios leads these men to desire careers  
 5 in which they could become rich; conversely, for lower mate-value men,  
 6 male-biased sex ratios lead them to want careers that provide more stability  
 7 (Durante et al., 2010). Because most women value as long-term mates  
 8 those men who have the ability to acquire resources (Buss, 1989), men who  
 9 can compete for mates appear to be more motivated to obtain financial  
 10 status under conditions of increased competition. Conversely, a volatile  
 11 career path might be too risky for men who have lower mate value, espe-  
 12 cially when mate competition is steep. Meanwhile, women in our studies  
 13 showed the reverse pattern. Among higher mate-value women, increased  
 14 competition (i.e., female-biased sex ratio) led them to desire careers that  
 15 would provide stability, whereas for lower mate-value women, female-  
 16 biased sex ratios lead them to want careers that could result in financial  
 17 wealth. These results suggest that women who can secure a mate more easily  
 18 might forgo a high-investment career trajectory, whereas women who are  
 19 less able to compete for mates allocate effort to careers with more financial  
 20 rewards.

## 21 Implications for Future Research

22 Sex ratio and the moderating effects of certain individual differences have  
 23 intriguing implications for voting patterns, advertising, and business prac-  
 24 tices. Each year, for example, many lawsuits are filed against companies  
 25 for using unfair or discriminatory pricing. “Fairness,” however, is a subjec-  
 26 tive concept. Many businesses use two types of pricing strategies: fixed  
 27 pricing or variable pricing (Heyman & Mellers, 2008). In fixed pricing,  
 28 prices remain constant regardless of when a purchase is made, who makes  
 29 it, or how much of the good is purchased (e.g., grocery store items, televi-  
 30 sion sets). In variable pricing, the price of the product can vary dramatically  
 31 (e.g., an airplane ticket, a movie ticket, car insurance). Sex ratio may alter  
 32 perceptions of fairness. Sometimes fairness might imply that everyone  
 33 has equal access to a product and pays the same price; at other times, fair-  
 34 ness might mean that prices ought to differ (e.g., that people who have more  
 35 money should pay more, that people who plan ahead should get a discount).  
 36 This suggests that when ratios are male-biased, men high in competitive  
 37 ability might perceive variable pricing as fair, whereas men lower in com-  
 38 petitive ability might perceive fixed pricing as fair. Future research is poised  
 39 to examine how sex ratio might influence various behaviors as a function of



- 1 individual differences relevant to competitive ability, such as mate value,  
2 intelligence, health, strength, socioeconomic status, and other differences.

### 3 SEX RATIO AND HORMONES

- 4 Certain hormones may be pivotal mediators or moderators of links  
5 between sex ratio and how individuals behave, especially in situations that  
6 evoke concerns about competition (Mehta & Josephs, 2010). We now dis-  
7 cuss the roles that three hormones—testosterone, estradiol, and cortisol—  
8 might play in these processes.

#### 9 Testosterone, Estradiol, and Cortisol

10 Testosterone (T) is a hormone responsible for producing and maintaining  
11 masculine secondary sexual characteristics. In many species, T levels are  
12 positively related to social rank and dominance (Sapolsky, 1991), decreas-  
13 ing when an individual's social status declines and increasing when it rises  
14 (Mazur & Booth, 1998). In humans, individuals who have higher basal  
15 T are more aggressive and dominant, more vigilant to dominance cues,  
16 and less aware of others' submission cues (e.g., Archer, 2006; Wirth &  
17 Schultheiss, 2006). Moreover, being in a committed relationship, marriage,  
18 or parenthood suppress T in men and women (e.g., Burnham et al., 2003).

19 Several studies have examined the role of T when an individual's status  
20 is experimentally manipulated. When men who have higher T lose status,  
21 they pay more attention to status cues, become less happy, and perform  
22 more poorly on cognitive tasks (Josephs, Sellers, Newman, & Mehta,  
23 2006). Higher T individuals also experience increases in cortisol (a marker  
24 of anxiety) after losing status, but decreases in cortisol after gaining it  
25 (Mehta, Jones, & Josephs, 2008). These findings suggest that high T moti-  
26 vates people to increase and maintain their social status. Once status is  
27 achieved, high T individuals relax and function well. Low T individuals, by  
28 comparison, are less reactive to gains or losses in status, but they become  
29 upset when they achieve higher status (Mehta & Josephs, 2010). Thus,  
30 lower T individuals may prefer and feel more comfortable in lower status  
31 positions, perhaps because they cannot compete effectively in higher-status  
32 roles.

33 Estrogen (estradiol; E) is a female hormone responsible for female fer-  
34 tility, sexual behavior, and motivation. Basal E correlates positively  
35 with basal T, and it has effects for women that parallel those of T in men  
36 (Faruzzi, Solomon, Demas, & Huhman, 2005). Women with higher E have

1 stronger implicit power motives, which are highest in single, unmated  
 2 women (e.g., Stanton & Schultheiss, 2007). Women who have stronger  
 3 power motivation also experience larger increases in E after gaining status  
 4 and larger decreases after losing it (Stanton & Schultheiss, 2007). With  
 5 regard to mating, higher E women are more attracted to masculine traits  
 6 in men (Roney & Simmons, 2008), and basal E predicts the amount of  
 7 mating effort that women exhibit (Durante & Li, 2009). E, therefore, plays  
 8 a significant role in mating, status-seeking, and cooperation in women.

9 Cortisol (C), a hormone released during physical activity or psycho-  
 10 logical stress, prepares the body, so that challenges or problems that must  
 11 be resolved immediately can be dealt with. In humans, higher basal C is  
 12 associated with greater anxiety and defensiveness (Brown et al., 1996),  
 13 whereas lower C is linked to stronger social approach tendencies and  
 14 aggression (Shoal, Giancola, & Kirillova, 2003). C, therefore, is believed to  
 15 serve a behavioral inhibition function. Indeed, lower C is associated with  
 16 lower harm avoidance, less self-control, and more aggression (Shoal et al.,  
 17 2003). When presented with a mating opportunity, lower mate-value men  
 18 experience increases in C (van der Meij, Buunk, & Salvador, in press),  
 19 reflecting a stress reaction. In sum, higher levels of C are associated with  
 20 social inhibition/avoidance, whereas lower levels are related to social  
 21 approach (Mehta & Josephs, 2010).

## 22 T × C Interactions and Sex Ratio

23 Different hormones most likely operate together in guiding social behav-  
 24 ior, especially in status-relevant situations. This may be especially true  
 25 of interactions between T and C in response to social threats (Hermans,  
 26 Ramsey, & van Honk, 2008). For instance, individuals who have higher  
 27 T and lower C are most likely to behave aggressively (Dabbs, Jurkovic,  
 28 & Frady, 1991). In lab tasks, high T/low C men tend to “rechallenge” oppo-  
 29 nents following a defeat, whereas higher C men avoid rechallenges (Mehta  
 30 & Josephs, 2010). C, therefore, may modulate status-seeking behav-  
 31 ior. When status is threatened (e.g., following a loss) and C is low, status-  
 32 seeking motivation fueled by higher T should be expressed as direct  
 33 behavioral approach (fight). However, when status is threatened and C is  
 34 higher, status-seeking motivation ought to be curtailed, and individuals  
 35 should display behavioral avoidance (flight). Mehta and Josephs (2010)  
 36 suggest that high T/high C individuals may view social stressors as *threats*  
 37 (and thus avoid/flee from such situations), whereas high T/low C individ-  
 38 uals might view them as *challenges* (and thus fight/compete).

1 How might sex ratio interface with T/E and C to affect behavior? When  
2 sex ratios are male-biased, high T/low C men should be more motivated to  
3 directly engage and vigorously compete with other men, viewing them as  
4 challenges to be overcome. In contrast, high C men and especially low T/  
5 high C men should avoid, withdraw, or compete poorly in this context,  
6 viewing “too many men” as daunting threats to be averted. When sex ratios  
7 are female-biased, high E/low C women ought to directly engage and com-  
8 pete with other women, perceiving them as challenges that can be dealt  
9 with effectively. The opposite pattern should be found for high C women  
10 and especially for low E/high C women, who should perceive “too many  
11 women” as threats to be sidestepped.

## 12 CONCLUSION

13 The principles of influence identified by Bob Cialdini have powerful effects  
14 on behavior. These principles often steer behavior unconsciously, in part  
15 because all of them have evolutionary underpinnings (Sundie, Cialdini,  
16 Griskevicius, & Kenrick, 2006). In this chapter, we considered the principle  
17 of scarcity from an evolutionary perspective. We focused on how people’s  
18 behavior might be affected by a novel dimension of scarcity—the scar-  
19 city of men in relation to women. Bridging a concept studied in evolu-  
20 tionary biological approaches to animal behavior with human outcomes,  
21 we showed that sex ratio also has theoretically consistent effects on human  
22 behavior. These effects, however, are not limited to mating or parenting  
23 outcomes; they extend to other important domains, such as financial deci-  
24 sion-making and career choices. Questions of how and why sex ratio influ-  
25 ences different types of behavior have myriad implications, especially for  
26 social influence—an indispensable area of the social sciences to which Bob  
27 Cialdini devoted his illustrious career.