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ten-day war in Slovenia in 1991.^{vii} Nevertheless, if the height advantage of surviving soldiers over fallen soldiers in the United Kingdom during World War I is generalizable to other belligerent nations in both world wars, then this can potentially solve one of the long-standing mysteries in evolutionary psychology.

—Satoshi Kanazawa
London, February 2008

Sources

- i. MacMahon, Brian and Thomas F. Pugh. 1954. "Sex Ratio of White Births in the United States during the Second World War." *American Journal of Human Genetics*. 6: 284–92.
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- Jensen, Arthur R. and S. N. Sinha. 1993. "Physical Correlates of Human Intelligence." Pp. 139–242 in *Biological Approaches to the Study of Human Intelligence*, edited by Philip A. Vernon. Norwood, NJ: Ablex.
- vi. Ansari-Lari, M. and M. Saadat. 2002. "Changing Sex Ratio in Iran 1976–2000." *Journal of Epidemiology and Community Health*. 56: 622–23.
- vii. Zorn, Branko, Veselin Sucur, Janez Stare, and Helena Meden-Vrtovec. 2002. "Decline in Sex Ratio at Birth After 10-Day War in Slovenia." *Human Reproduction*. 17: 3173–7.

Notes

Preface

- 1 Miller and Kanazawa (2000).

Introduction

- 1 Maynard Smith (1997).
- 2 Ridley (1999, pp. 54–64).
- 3 Pinker (2002).
- 4 Scarr (1995).
- [5] Wilson (2007) is a late exception.
- 6 Moore (1903).
- 7 Hume (1739).
- 8 Davis (1978).
- 9 Ridley (1996, pp. 256–8).
- 10 Alexander et al. (1979); Kanazawa and Novak (2005).
- 11 Calden, Lundy, and Schlafer (1959); Gillis and Avis (1980); Sheppard and Strathman (1989).
- 12 Davis et al. (1993); Rand and Kuldau (1990).

Chapter 1

- 1 Buss (1989); Daly and Wilson (1988).
- 2 Barkow, Cosmides, and Tooby (1992).
- 3 Ellis and Bjorklund (2005, p. x).
- 4 Barkow (2006); Tooby and Cosmides (1992, pp. 24–49).
- 5 Ellis (1996); Daly and Wilson (1988, pp. 152–6).
- 6 Campbell (1999, p. 243).
- 7 Pinker (2002).
- 8 Ellis (1996).
- 9 Cornwell, Palmer, and Davis (2000); Cornwell et al. (2001); Machalek and Martin (2004).

[10] In this section we present a brief introduction to the field of evolutionary psychology. Nonacademic readers who would like a more extensive introduction may consult David M. Buss's *The Evolution of Desire: Strategies of Human Mating* (Buss 1994), Matt Ridley's *The Red Queen: Sex and the Evolution of Human Nature* (Ridley 1993), and Robert Wright's *The Moral Animal: The New Science of Evolutionary Psychology* (Wright 1994). Academic readers might want to consult Barkow, Cosmides, and Tooby (1992); Buss (1995, 1999); Cartwright (2000); Daly and Wilson (1988); and Kanazawa (2001a).

[11] We must define natural and sexual selection explicitly, because our usage may appear a bit unorthodox to anyone with some background in evolutionary biology. We define *natural selection* as the process whereby some individuals live longer than others, and *sexual selection* as the process whereby some individuals leave more offspring (or copies of their genes) than others. Natural selection is a matter of survival; sexual selection is a matter of reproductive success. This is how Darwin originally defined natural and sexual selection—as two separate processes. That is why he wrote two separate books—*On the Origin of Species by Means of Natural Selection* (1859) to explain natural selection, and *The Descent of Man, and Selection in Relation to Sex* (1871) to explain sexual selection. In the 1930s, however, biologists redefined natural selection to subsume sexual selection and began to contend that differential reproductive success was the currency of natural selection. This is now the orthodoxy in all biological textbooks, which claims that sexual selection is but one branch of natural selection (Cronin 1991, pp. 231–43).

In this book, we argue against this orthodoxy. We concur with Geoffrey F. Miller (2000, pp. 8–12), Anne Campbell (2002, pp. 34–5), and others in the current generation of evolutionary psychologists and believe that we should return to Darwin's original definitions and treat natural and sexual selection as two distinct processes. This is still controversial and of the minority, but we firmly believe that the conceptual separation of natural and sexual selection will bring clarity in evolutionary biology and psychology.

- 12 Williams (1966).
- 13 Barash (1982, pp. 144–7).
- 14 Daly, Wilson, and Weghorst (1982).
- 15 Gaulin, McBurney, and Brakeman-Wartell (1997).
- 16 Cerda-Flores et al. (1999).
- 17 Baker and Bellis (1995, p. 200, box 8.4).
- 18 Buss (1988, 2000); Buss and Shackelford (1997).
- 19 White (1981); Buunk and Hupka (1987).

- 20 Buss, Larsen, and Westen (1992); Buss et al. (1999).
- 21 Harris (2003); DeSteno et al. (2002).
- [22] Pietrzak et al. (2002). As one of the deans of modern evolutionary psychology, David M. Buss, points out (Buss, Larsen, and Western 1996), evolutionary psychologists (Daly, Wilson, and Weghorst 1982; Symons 1979, pp. 226–46) *predicted* the existence of these sex differences in romantic jealousy on the basis of evolutionary logic alone more than a decade before any systematic data existed.
- 23 Betzig (1997a).
- 24 van den Berghe (1990, p. 428).
- 25 Endorsement on the cover of Betzig (1997b).
- 26 Bowlby (1969).
- 27 Kanazawa (2002, 2004b).
- 28 Kanazawa (2002).
- 29 Buss (1988).
- 30 Crawford (1993); Symons (1990); Tooby and Cosmides (1990).
- 31 Kanazawa (2004a).

Chapter 2

- 1 Blum (1997); Mealy (2000); Moir and Jessel (1989); Pinker (2002, pp. 337–71).
- 2 Connellan et al. (2000).
- 3 Alexander and Hines (2002).
- 4 Brown (1991); Pinker (2002, appendix, pp. 435–9).
- 5 Alexander et al. (1979); Daly and Wilson (1988, pp. 140–2).
- [6] Actually, as we argue in chapter 4, all human societies at all times are polygynous. They practice either simultaneous polygyny, allowing some men to have multiple wives simultaneously, as happens in Muslim and African tribal societies; or serial polygyny, allowing some men to have multiple wives sequentially through divorce and remarriage. The only truly and strictly monogamous societies prohibit simultaneous polygyny, divorce and remarriage, or extramarital affairs. No human societies known to anthropologists belong to this category (Betzig 1989) and thus more men than women always remain mateless in every society, given a roughly 50–50 sex ratio.
- [7] The figure most often cited for the total number of children sired by Moulay Ismail the Bloodthirsty, taken from the 1976 edition of the *Guinness Book of World Records* (McWhirter and McWhirter 1975), is 888. However, according to the 1995 edition of the same book (Young 1994, p. 10), it is at least 1,042.

- 8 Betzig (1986).
- 9 Campbell (1999, 2002).
- 10 Clutton-Brock and Vincent (1991).
- 11 Trivers (1972).
- 12 Harris (1974).
- 13 Chomsky (1957).
- 14 Pinker (1994).
- 15 van den Berghe (1990, p. 428).
- 16 Freeman (1983, 1999).
- 17 Chagnon (1968).
- 18 Nance (1975).
- 19 Hemley (2003).
- 20 Ridley (1996, pp. 213-5).

Chapter 3

- 1 Buss (1989).
- 2 Bloch (1994, pp. 1-13).
- 3 Abdollahi and Mann (2001).
- 4 Crawford, Salter, and Jang (1989).
- 5 Kanazawa and Still (2000b).
- 6 Etcoff (1999, pp. 89-129); Mesko and Bereczkei (2004).
- 7 Etcoff (1999, pp. 122-6).
- 8 Singh (1993); Singh and Young (1995); Singh and Luis (1995).
- 9 Jasienska et al. (2004).
- 10 Symons (1995, p. 93).
- 11 Cartwright (2000, pp. 153-4).
- 12 Marlowe (1998).
- 13 Jasienska et al. (2004).
- 14 Rich and Cash (1993).
- 15 Bloch (1994, pp. 1-13).
- 16 Wall (1961).
- 17 Ramachandran (1997).
- 18 Feinman and Gill (1978).
- 19 van den Berghe and Frost (1986).
- 20 Wong and Ellis (1984).
- 21 Feinman and Gill (1978).
- 22 Ridley (1993, pp. 293-5).
- 23 Feinman and Gill (1978).

- 24 Kenrick and Keefe (1992).
- 25 Hess (1975); Hess and Polt (1960).
- 26 Feinman and Gill (1978, p. 47, table 1).
- 27 Cunningham, Druen, and Barbee (1997).
- 28 Wagatsuma and Kleinke (1979).
- 29 Bernstein, Tsai-Ding, and McClellan (1982); Cross and Cross (1971).
- 30 Cunningham et al. (1995).
- 31 Jones (1996); Jones and Hill (1993).
- 32 Maret and Harling (1985).
- 33 Morse and Gruzen (1976).
- 34 Thakerar and Iwawaki (1979).
- 35 Langlois et al. (1987); Samuels and Ewy (1985).
- 36 Slater et al. (1998).
- 37 Langlois, Roggman, and Rieser-Danner (1990).
- 38 Symons (1995).
- 39 Little et al. (2002).
- 40 Gangestad, Thornhill, and Yeo (1994); Mealey, Bridgstock, and Townsend (1999); Perrett et al. (1999).
- 41 Bailit et al. (1970); Møller (1990, 1992); Parsons (1992).
- 42 Parsons (1990).
- 43 Gangestad and Buss (1993).
- 44 Langlois and Roggman (1990); Rubenstein, Langlois, and Roggman (2002).
- 45 Langlois and Roggman (1990).
- 46 Thornhill and Gangestad (1993).
- 47 Thornhill and Møller (1997, pp. 528-33).
- 48 Langlois et al. (2000); Shackelford and Larsen (1999).
- 49 Hönekopp, Bartholomé, and Jansen (2004).
- 50 Henderson and Anglin (2003).
- 51 Al-Eisa, Egan, and Wassersub (2004).
- 52 Kalick et al. (1998).
- 53 Grammer and Thornhill (1994).
- 54 Langlois et al. (1994).
- 55 Trivers (1972).
- 56 Pérusse (1993, pp. 273-4).
- 57 Pérusse (1993, p. 273).
- 58 Buss and Schmitt (1993).
- 59 Ellis and Symons (1990).
- 60 Buss and Schmitt (1993).

- 61 Salmon and Symons (2001, 2004).
- 62 Symons (1979, pp. 170-84).
- 63 Ellis and Symons (1990).
- 64 Buss and Schmitt (1993).
- 65 Hejl, Kammer, and Uhl (Forthcoming).
- 66 Carroll (1999); Gottschall et al. (2004); Thiessen and Umezawa (1998); Wilson (1998, pp. 210-37).
- 67 Buss (1989).
- 68 Kenrick and Keefe (1992).
- 69 Kenrick and Keefe (1992).
- 70 Abbey (1982).
- 71 Kanazawa (2006a); Liedtke (2000); Pate (2001); Ream (2000).
- 72 Haselton (2003); Haselton and Buss (2000).
- 73 Yamagishi, Jin, and Kiyonari (1999).
- [74] If you are familiar with elementary statistics, you recognize the false-positive and false-negative errors as "Type I" and "Type II" errors.
- 75 Haselton and Buss (2000, p. 90); Haselton and Nettle (2006).
- 76 Yamagishi et al. (Forthcoming).
- 77 Guthrie (1993).
- 78 Boyer (2001).

Chapter 4

- 1 Emlen (1995).
- 2 Smith (1984, p. 604, figure 1A).
- 3 Smith (1984, p. 609).
- 4 Cerda-Flores et al. (1999); Gaulin, McBurney, and Brakeman-Wartell (1997).
- 5 White (1988).
- 6 Chisholm and Burbank (1991).
- 7 Bellis and Baker (1990); Birkhead and Møller (1991).
- 8 Cartwright (2000, p. 222, table 8.1).
- 9 Gallup et al. (2003, p. 278).
- 10 Gallup et al. (2003, p. 278).
- 11 Gallup et al. (2003).
- 12 Baker and Bellis (1995).
- 13 Barash and Lipton (2001).
- 14 Alexander et al. (1979); Leutenegger and Kelly (1977).
- 15 Alexander et al. (1979, pp. 428-30, table 15-3).

- 16 Mealey (2000, p. 306).
- 17 Alexander et al. (1979); Leutenegger and Kelly (1977).
- 18 Kanazawa and Novak (2005).
- 19 Silventoinen et al. (2001).
- 20 Biro et al. (2001); Frisch and Revelle (1970); Helm, Münster, and Schmidt (1995); Jaruratanasirikul, Mo-suwan, and Lebel (1997); Nettle (2002); Oka-sha et al. (2001).
- [21] There is a third, even newer explanation of the evolution of sexual dimorphism in size (Kanazawa 2005a), although not of the relationship between polygyny and sexual dimorphism. The application of the generalized Trivers-Willard hypothesis (see "Boy or Girl? What Influences the Sex of Your Child?" in chapter 5) suggests that tall and heavy parents (both mothers and fathers) are more likely to have sons, and short and light parents are more likely to have daughters, because large body size is more adaptive for men than for women. Available empirical evidence supports this prediction of the generalized Trivers-Willard hypothesis. Body size (height and weight) are substantially heritable. Sexual dimorphism in size may therefore have evolved through this mechanism *in addition to* the effect of polygyny on the age of puberty.
- 22 Kirkpatrick (1987); Small (1993); Trivers (1972).
- 23 Kanazawa and Still (1999).
- 24 Shaw (1957, p. 254).
- 25 Dawkins (1986).
- [26] Davies (1989); Orians (1969); Searcy and Yasukawa (1989); Verner (1964); Verner and Willson (1966). Borgerhoff Mulder (1990) is an earlier application of the polygyny threshold model to human society.
- 27 Lenski (1966, pp. 308-18).
- 28 Kanazawa and Still (2001).
- 29 Betzig (1986).
- 30 Kanazawa (2003a); Pérusse (1993, 1994).
- 31 Kanazawa and Still (1999).
- 32 Katzev, Warner, and Acock (1994); Morgan, Lye, and Condran (1988).
- 33 Draper and Harpending (1982).
- 34 Thornhill (1976).
- 35 Sozou and Seymour (2005).
- 36 Gangestad and Simpson (2000).
- 37 Draper and Harpending (1982).
- 38 Trivers (1972).
- 39 Gangestad and Thornhill (1997).

- 40 Rhodes, Simmons, and Peters (2005).
 41 Gangestad and Simpson (2000, p. 583).

Chapter 5

- 1 Daly and Wilson (1985).
 2 Daly and Wilson (1999).
 3 Trivers and Willard (1973).
 4 Betzig (1986).
 5 Betzig and Weber (1995).
 6 Cronk (1989).
 7 Voland (1984).
 8 Moore (1990, pp. 326–7, figures 1–2).
 9 Mueller (1993).
 10 Kanazawa (2006c).
 11 Ellis and Bonin (2002); Freese and Powell (1999); Keller, Nesse, and Hof-ferth (2001).
 12 Cronk (1991); Gaulin and Robbins (1991); Kanazawa (2001d); Trivers (2002, pp. 120–2).
 13 Kanazawa (2005a, 2006b, 2007); Kanazawa and Vandermassen (2005).
 14 Baron-Cohen (1999, 2002, 2003); Baron-Cohen and Hammer (1997); Baron-Cohen, Lutchmaya, and Knickmeyer (2004).
 15 Kanazawa and Vandermassen (2005).
 [16] The regression equations in Kanazawa and Vandermassen (2005, p. 595, table 1) include control variables for the respondent's education and income (to control for the effect of parental social class predicted in the original Trivers-Willard hypothesis), as well as age, age at first marriage, race, and current marital status. Then, controlling for the number of children of the opposite sex, having a systemizing occupation increases the number of sons by 0.3498 ($p < 0.01$), and having an empathizing occupation increases the number of daughters by 0.3981 ($p < 0.01$).

Let S_O = the mean number of sons among the general population, D_O = the mean number of daughters among the general population, S_E = the mean number of sons among engineers and other systemizers, and D_N = the mean number of daughters among nurses and other empathizers.

For our computation of S_E , assume $D_O = D_E = 1$. Then, $S_O = 1.0500$, and $S_E = 1.0500 + .3498 = 1.3998$. For our computation of D_N , assume $S_O = S_E = 1$. Then, $D_O = 0.9524$, and $D_N = 0.9524 + 0.3981 = 1.3505$. We thank Jouni Kuha for help with these computations.

- 17 Kanazawa (2005a).
 18 Chagnon (1997).
 19 de Waal (1982).
 20 Kanazawa (2006b).
 21 Kanazawa (2007).
 22 Kanazawa (2007); Takahashi et al. (2006).
 23 Christenfeld and Hill (1995).
 24 McLain et al. (2000).
 25 Brédart and French (1999); Bressan and Grassi (2004).
 26 Daly and Wilson (1982); McLain et al. (2000); Regalski and Gaulin (1993).
 27 McLain et al. (2000).
 28 Kanazawa and Still (2000a, p. 25, appendix).
 29 Liss (1987, p. 781).
 30 US Bureau of the Census (1995, p. 7, table B).
 31 Bellis et al. (2005).
 32 Kanazawa and Still (2000a).
 33 Daly and Wilson (1988, pp. 62–3).
 34 Campbell (1988); Fischer and Olicker (1983); Marsden (1987).
 35 Smith-Lovin and McPherson (1993); Munch, McPherson, and Smith-Lovin (1997).
 36 Smith-Lovin and McPherson (1993, pp. 234–5).
 37 Kanazawa (2001b).
 38 Draper and Harpending (1982, 1988); Ellis et al. (1999).
 39 Ellis et al. (2003); Quinlan (2003).
 40 Ellis (2004, pp. 922–4).
 41 Kaprio et al. (1995); Rowe (2002).
 42 Ellis (2004).
 43 Draper and Harpending (1982, 1988).
 44 Quinlan (2003).
 45 Bailey et al. (2000); Kanazawa (2001c).
 46 Kanazawa (2001c).
 47 Herman-Giddens et al. (1997); Lemonick (2000).
 48 Ellis (2002).

Chapter 6

- 1 Daly and Wilson (1988).
 2 Brown (1991).
 3 Pinker (2002, pp. 435–9, appendix).

- 4 Kanazawa (2006c).
- 5 International Criminal Police Organization (various years).
- 6 Daly and Wilson (1988, pp. 137-61).
- 7 Daly and Wilson (1988, pp. 123-36).
- 8 Wolfgang (1958).
- 9 Buss (1994, pp. 19-48).
- 10 Thornhill and Palmer (2000); Thornhill and Thornhill (1983).
- 11 Ellis (1998).
- 12 Campbell (1995, 1999).
- 13 Campbell (2002).
- 14 Campbell (1999, p. 210).
- 15 Browne (2002); Furchtgott-Roth and Stolba (1999); Kanazawa (2005b).
- 16 Greenberg (1985); Hirschi and Gottfredson (1985); Steffensmeier et al. (1989).
- 17 Blumstein (1995); Campbell (1995); Daly and Wilson (1990).
- 18 Miller (1999, p. 87; emphases added).
- 19 Kanazawa (2003c).
- 20 Kanazawa (2000); Miller (1999).
- 21 Kanazawa (2003c).
- 22 Kanazawa (2003b, 2003c); Kanazawa and Still (2000c); Miller (2000).
- 23 Kanazawa (2003c).
- 24 Trivers (1972).
- 25 Blumstein and Schwartz (1983, pp. 195-8); Laumann et al. (1994, pp. 315-6, table 8.4).
- 26 Kanazawa (2000, 2003c); Miller (1998, 1999, 2000).
- 27 Laub, Nagin and Sampson (1998); Sampson and Laub (1993).
- 28 Hirschi (1969).
- 29 Hirschi (1969).
- 30 Kanazawa (2000).
- 31 Hargens, McCann, and Reskin (1978).
- 32 Gould and Lewontin (1979).
- 33 Ketelaar and Ellis (2000); Kurzban and Haselton (2006).
- 34 Daly and Wilson (1996).
- 35 Wilson, Daly, and Wright (1993); Wilson, Johnson, and Daly (1995).
- 36 Wilson, Daly, and Wright (1993, p. 275, table 4).
- 37 Wilson, Daly, and Wright (1993, p. 276, table 5).
- 38 Kanazawa and Still (2000c, pp. 444-6).

- 39 Buss (1988); Buss and Shackelford (1997); Peters, Shackelford, and Buss (2002).
- 40 Wilson, Daly, and Wright (1993).

Chapter 7

- [1] The only other American President ever to be impeached was Andrew Johnson, who was elected Vice President and became President after Abraham Lincoln's assassination in 1865. As a result of the Watergate scandal, the House of Representatives began impeachment hearings against Richard M. Nixon in 1974. However, Nixon resigned in August 1974 before the full House had a chance to vote on the impeachment, the first (and so far the only) US President ever to resign.
- 2 Betzig (1982, 1986, 1993, 2002).
- 3 Betzig (1992, 1995).
- 4 Kanazawa (2004c).
- 5 Blau and Kahn (1992); Mueller, Kuruvilla, and Iverson (1994); Rosenfeld and Kalleberg (1990); Sørensen and Trappe (1995).
- 6 Blau and Kahn (2000).
- 7 Marini (1989).
- 8 England (1992).
- 9 Browne (1995, 1998, 2002).
- 10 Campbell (1999, 2002).
- 11 Kanazawa (2005b, p. 276, table 1).
- 12 Kanazawa (2005b, p. 284).
- 13 Moir and Jessel (1989, p. 167).
- 14 Moir and Jessel (1989, p. 159).
- 15 Kanazawa (2005b).
- 16 Eitzen (1985, p. 378); Furchtgott-Roth and Stolba (1999, p. 11).
- 17 Eitzen (1988, p. 385).
- 18 Eitzen and Zinn (1991, p. 324).
- 19 "Clinton Seeks More Money to Reduce Gap in Wages." *New York Times*, January 31, 1999.
- 20 Furchtgott-Roth and Stolba (1999).
- 21 Kanazawa (2005b).
- 22 Browne (2002).
- 23 Baron-Cohen (1999, 2002, 2003); Baron-Cohen and Hammer (1997); Baron-Cohen, Lutchmaya, and Knickmeyer (2004).

- 24 Baron-Cohen (2003, p. 3).
- 25 Baron-Cohen (2003, p. 63).
- 26 Baron-Cohen (2003, p. 2).
- 27 Baron-Cohen (2003, pp. 23-4).
- 28 Baron-Cohen (2003, p. 24).
- 29 Baron-Cohen (2003, p. 60, figure 5; p. 85, figure 7).
- 30 Baron-Cohen et al. (1997, 1998).
- 31 Browne (1997, 2002, pp. 191-214; 2006).
- 32 Franke (1995); Paludi (1996); Tangri, Burt, and Johnson (1982).
- 33 Browne (1997).
- 34 Clarke and Hatfield (1989).
- 35 Buss and Schmitt (1993).
- 36 Avner (1994); Bravo and Cassedy (1992).
- 37 Browne (2002, p. 202).
- 38 Muehlenhard and Hollabaugh (1988).
- 39 Muehlenhard and McCoy (1991).
- 40 Mealey (1992, p. 397).
- 41 Browne (1997, p. 75).

Chapter 8

- 1 Kurzban, Tooby, and Cosmides (2001).
- [2] Before we can explore the evolutionary origins of religion, we must first define our terms. The term *religion*, both in academic and general writing, tends to refer to three related yet separate things: *religious beliefs* (intraindividual cognitive processes inside the brain); *religious practices* (individual and interindividual social behavior, such as rituals); and *religious organization* (supraindividual collectivities, such as churches, synagogues, and other denominations). Psychologists mostly study religious beliefs (Allport 1950; James 1902), anthropologists usually focus on religious beliefs and practices (Durkheim 1915/1965; Evans-Pritchard 1956), and sociologists and economists tend to concentrate on religious practices and organizations (Greeley 1972; Iannaccone 1994).

In this section, we focus exclusively on the evolutionary psychological origins of *religious beliefs*. For this reason, we exclude from our discussion David Sloan Wilson's excellent book *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (2002), because it is mostly about religious organization and how different religious groups and societies evolved over history.

- 3 Brown (1991).

- 4 Bouchard et al. (1999); Koenig et al. (2005).
- 5 Alper (2001); Hamer (2004); Newberg, D'Aquili, and Rause (2002).
- [6] There have been a few studies that conclude that religious and spiritual people live longer than nonbelievers (Hall 2006; Miller and Thoresen 2003; McCullough et al. 2000). However, no one has yet either specified the *proximate* biochemical mechanism of *how* religiosity increases longevity or explained the *ultimate* reason *why* it does. These studies are also of limited credibility, since they are either funded by the John Templeton Foundation (Miller and Thoresen 2003; McCullough et al. 2000) or conducted by an Episcopal priest (Hall 2006).
- 7 Kirkpatrick (2005, pp. 214-39).
- 8 Atran (2002); Boyer (2001); Guthrie (1993); Kirkpatrick (2005).
- [9] Once again, if you are familiar with elementary statistics, you recognize the false-positive and false-negative errors as "Type I" and "Type II" errors.
- 10 Haselton and Nettle (2006).
- 11 Guthrie (1993).
- 12 Atran (2002).
- [13] In other words, according to these theorists, religion is the result of humans attributing an intention to, and thereby employing theory of mind for, inanimate physical objects. McNamara (2001) suggests that autistics, who lack the theory of mind module, may thus be less likely to be religious than nonautistics. To the best of our knowledge, no one has compared the levels of religiosity among autistics and nonautistics.
- 14 Haselton (2003); Haselton and Buss (2000).
- [15] Haselton and Nettle (2006). The fact that Kirkpatrick's theory of the evolution of religion has much to do with Haselton's error management theory may not be entirely coincidental. Haselton was once a student of Kirkpatrick's, although it was Haselton who originally introduced Kirkpatrick to evolutionary psychology (Kirkpatrick 2005, pp. x-xi).
- [16] In Bangladesh, very slightly more men believe in God (98.7% vs. 98.5%) and identify themselves as religious (84.1% vs. 83.7%) than women. In the Dominican Republic, more men believe in God than women (95.2% vs. 90.9%), but the sample size is small (411 respondents). In Montenegro, more men believe in God (66.3% vs. 63.9%) and identify themselves as religious (50.9% vs. 47.9%) than women, but the sample size is even smaller (209 for the first question, 225 for the second).
- 17 Miller and Stark (2002).
- 18 Mol (1985); Suziedalis and Potvin (1981).

- 19 Glock, Ringer, and Babbie (1967); Walter and Davie (1998).
 20 Azzi and Ehrenberg (1975); Iannaccone (1990); Luckmann (1967); Martin (1967).
 21 Miller and Stark (2002).
 22 de Vaus and McAllister (1987); Steggarda (1993).
 23 Cornwall (1988); de Vaus (1984); Stark (1992).
 24 Haselton and Nettle (2006).
 25 Kanazawa and Still (2000c).
 26 Campbell (1995, 1999, 2002).
 27 Miller and Hoffmann (1995); Miller and Stark (2002); Stark (2002); Sherkat (2002).
 28 Miller (2000).
 29 Gambetta (2005, pp. 259–63).
 30 Kanazawa and Still (2000c).
 [31] The top 20 most polygynous nations according to these scores are: 1. Anguilla, 1. Antigua and Barbuda, 1. Bahamas, 1. Barbados, 1. Equatorial Guinea, 1. Gabon, 1. Haiti, 1. Lesotho, 1. St. Vincent/Grenadines, 1. Swaziland (all of which have the maximum polygyny score of 3.000), 11. Morocco (2.9700), 12. Liberia (2.9000), 13. Nigeria (2.8175), 14. Congo (former Zaire) (2.8095), 15. Sierra Leone (2.8000), 16. Chad, 16. Nicaragua (both 2.7500), 18. Niger (2.7250), 19. Togo (2.6667), and 20. Mozambique (2.6664). Only Morocco and Nicaragua are outside of sub-Saharan Africa and the Caribbean.
 32 Atran (2003); Berrebi (2003).
 33 O'Hanlon and Campbell (2007).
 34 Kalyvas (2005, pp. 96–7).
 35 Coogan (1995, pp. 513–21).
 36 Atran (2003, p. 1538); Friedman (2002, pp. 144–5).
 37 Krueger and Maleckova (2003, p. 129).
 38 Friedman (2002, pp. 13–4, 19–20).
 39 Hechter (2000).
 40 Coleman (1988).
 41 Olson (1965).
 42 Kanazawa (2001a).
 43 Whitmeyer (1997).
 44 Dawkins (1976).
 45 Pinker (2002).
 46 Kurzban, Tooby, and Cosmides (2001).

- 47 Miller (2000).
 48 Townsend and Levy (1990).
 49 Dunbar, Duncan, and Marriott (1997).
 50 Kanazawa (2000, 2003c); Miller (1998, 1999).
 51 Lycett and Dunbar (2000).
 52 Low (1979).
 53 Cunningham et al. (1995); Jones (1996); Jones and Hill (1993); Maret and Harling (1985); Morse and Gruzen (1976); Thakerar and Iwawaki (1979).
 54 Langlois et al. (1987); Samuels and Ewy (1985).
 55 Buss (1999, p. 135).
 56 Kanazawa (2000, 2003c).
 57 Dugatkin (1998).
 58 Grant and Green (1998).
 59 Höglund et al. (1995).
 60 Galef and White (1998).
 61 Dugatkin (2000).
 [62] While an appealing idea, the only experimental test of this “wedding-ring effect” has not been supportive (Uller and Johansson 2003), so this must still be treated as an interesting but speculative idea.
 63 Kanazawa and Frerichs (2001).
 64 Kanazawa and Frerichs (2001, p. 327, table 2).

Conclusion

- 1 Miller (2000, pp. 217–9).
 2 Hamer et al. (1993).
 3 Hamer and Copeland (1994, pp. 183–4).
 4 Trivers (personal communication).
 5 Camperio-Ciani, Corna, and Capiluppi (2004).
 6 Hamer and Copeland (1994, pp. 182–3); Miller (2000, pp. 217–9).
 [7] Sulloway has had a truly maverick academic career. Having received a PhD in History of Science at Harvard and having been mentored by the great evolutionary biologist Ernst Mayr, Sulloway has never held a regular academic appointment, and has instead supported himself and his scientific research entirely through research grants and fellowships, including a MacArthur Prize Fellowship (i.e., “the genius award”). He has written on the history of science, psychology, and evolutionary biology, and has conducted research at Harvard, MIT, the Center for Advanced Study in the Behavioral Sciences at Stanford, and the University of California, Berkeley, where he is

Notes

currently Visiting Scholar and Professor (Sulloway, personal communication).

- [8] In 1960, Judith Rich Harris was a graduate student in psychology at Harvard. After receiving her master's degree, she was dismissed from the program by the then acting department chair, George A. Miller, who thought Harris was not smart enough to earn a PhD. Thirty-five years later, while supporting herself by writing psychology textbooks, Harris worked on her group socialization theory of development and published it in the prestigious academic journal *Psychological Review*. In 1997, her article won an award from the American Psychological Association, the George A. Miller Award for an Outstanding Recent Article in General Psychology (Harris 1998, pp. xi-xviii).
- 9 Sulloway (1996).
- 10 Harris (1995, 1998).
- 11 Rowe (1994).
- 12 Harris (1998, pp. 365-78); Sulloway (2000).
- 13 Kohler, Rodgers, and Christensen (1999); Rodgers, Kohler, Kyvik, and Christensen (2001); Rodgers et al. (2001).
- 14 Daly and Wilson (1985).
- [15] Daly and Wilson (1995). Probably the most common cause of mothers killing their biological children is mental illness. With its emphasis on universal human nature, however, evolutionary psychology is ill equipped to explain behavior caused by mental illness and other "abnormality."
- 16 Daly and Wilson (1988, pp. 37-93).
- 17 Shields and Shields (1983); Thornhill and Palmer (2000).
- 18 Yamaguchi and Ferguson (1995).
- 19 Saad and Peng (2006).
- 20 Kanazawa (2006c).
- 21 Buss (1989).
- 22 Schmitt (2003, 2004).
- 23 Wright (1994, p. 84).
- 24 Low, personal communication.

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