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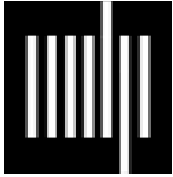
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# A Surplus of Men, A Deficit of Peace

Valerie M. Hudson  
and Andrea Den Boer

Security and Sex Ratios in  
Asia's Largest States

International security and stability rest in large measure on the internal security of nations. Analysts have long examined factors such as arms transfers and ethnic violence in this regard, but the list now includes variables that were not traditionally viewed as related to national security. Unemployment rates, water tables and river flows, infant mortality, migration patterns, infectious disease epidemiology, and a whole host of other variables that tap into the general stability of a society are now understood to affect security. To understand the long-term security dynamics of a region, one must inquire into what Thomas Homer-Dixon and others have termed the "environmental security" of the nations therein.<sup>1</sup>

Our own research is surely located in that field of inquiry, yet we contemplate a variable that has been by and large neglected even by scholars of environmental security. One overlooked wellspring of insecurity, we argue, is exaggerated gender inequality. Security scholarship is theoretically and empirically impoverished to the extent that it fails to inquire into the relationship between violence against women and violence within and between societies. We believe that our research demonstrates that the long-term security trajectory of a region is affected by this relationship.

Admittedly, there is probably no society in which women do not experience some gender inequality, meaning subordinate status or inferior treatment in political, legal, social, or economic matters. Indeed, what would constitute a perfect society between men and women is a controversial topic with which we are not concerned here. However, *exaggerated* gender inequality is hard to miss: We define it to be present when, because of gender, one child is allowed to live while another is actively or passively killed.<sup>2</sup> Offspring sex

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1. Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, N.J.: Princeton University Press, 1999).

2. "Passive killing" refers to such phenomena as withholding food from a newborn or abandoning a newborn in the wild. Though not an active killing, such as smothering a child, the intent to kill is clear, and so is termed passive killing.

selection,<sup>3</sup> almost universally used to favor male offspring, indicates that the life of a female in the society is not only not valued but actually despised. There can be no greater evidence of the extremely unequal and subordinate status of women in a society than the presence of prevalent offspring sex selection therein.

If violence against women within a society bears any relationship to violence within and between societies, then it should be possible to see that relationship at work in societies where violence against women is exaggerated—that is, where offspring sex selection is prevalent. Specifically, internal instability is heightened in nations displaying exaggerated gender inequality, leading to an altered security calculus for the state. Possibilities of meaningful democracy and peaceful foreign policy are diminished as a result.

We first quantify the scale on which sex ratios are being altered in Asia, then estimate the number of resulting surplus young adult males currently present in Asia's two largest states, China and India, as well as projected to the year 2020. Next, we discuss behavioral syndromes associated with surplus young adult male groups, and investigate the role of such groups in instability and violence within and between societies in several historical cases. Finally, we ask whether these same phenomena are beginning to be seen in China and India today, and raise broader issues of governance and foreign policy in high sex-ratio societies.

### *Modern Prevalence of Offspring Sex Selection*

The practice of offspring sex selection can be found in a large variety of historical cultures from all continents. In virtually all cases, the selection was in favor of male infants. Here we concentrate on the modern incidence of offspring sex selection and seek to quantify its scale.

Two statistics set the stage for our discussion: the birth sex ratio and the overall sex ratio. Normal birth sex ratios range between 105 and 107 male births per 100 female births. This normal range holds across racial groups, though there may be some parental age-related or diet-related variations within such groups. The overall sex ratio (i.e., the sex ratio across all ages) tends toward 1:1 or less, reflecting a combination of increased female mortality from childbearing, but longer female life span.

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3. Offspring sex selection should not be confused with the term "sex selection" as used by evolutionary biologists to refer to the calculus by which males and females choose mates; "offspring sex selection" refers to the selective rearing of children based on sex. Female infanticide and sex-selective abortion are two examples of offspring sex selection.

#### OVERALL SEX RATIOS

Ansley Coale suggests that the sex ratio for a stationary population (as determined by Western model life tables) is between 97.9 and 100.3 males per 100 females.<sup>4</sup> (In the remainder of the article, the ratio is expressed as the number of males per 100 females—that is, 105:100 is rendered as 105 and the “100” should be assumed after each such number throughout the article.) A population with a young age structure may have a slightly higher overall sex ratio than a population with an older age structure. Table 1 provides sex ratios for overall populations by continent.

As Table 1 shows, the sex ratio favors the male population only in Oceania (slightly) and in Asia. A glance at overall sex ratios and population sizes for each country in Asia indicates that the highest sex ratios are found in Afghanistan, Bangladesh, Bhutan, Brunei, China, India, the Maldives, Nepal, Pakistan, and Taiwan. The large populations found in several of these countries mean that the majority of “missing” females can be attributed to them.

Examining the seven countries listed in Table 2, we find that from 66 to 86 million of the missing females in Asia are attributable to them alone, with two countries in particular contributing the majority of missing females due to their high sex ratios and large population size: China and India together contribute between 62 and 68 million of the missing females in Asia. This is, however, but a rough estimation of the effects of sex-selective abortion, female infanticide, differential mortality rates, and other discriminatory practices against females. More than a decade ago, Amartya Sen asserted that the number of missing Asian females had already surpassed 100 million.<sup>5</sup>

#### BIRTH SEX RATIOS

Birth sex ratios are a very valuable piece of information but are sometimes difficult to obtain. They are also relatively unreliable for several reasons. First, birth registration in very large or predominantly rural countries may not be accurate because of the number of births occurring outside of a hospital. Indeed, for this very reason some nations do not even report a birth sex ratio. Second, birth sex ratios may be highly politicized and subject to bureaucratic “adjustment” in some cultures. Third, birth sex ratios may mask troubling phenomena. For example, though the 1992 overall birth sex ratio for South Korea was

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4. Ansley Coale, “Excess Female Mortality and the Balance of the Sexes in the Population: An Estimate of the Number of ‘Missing Females,’” *Population and Development Review*, Vol. 17, No. 3 (September 1991), p. 518.

5. Amartya Sen, “More Than 100 Million Women Are Missing,” *New York Review of Books*, December 20, 1990, pp. 61–66.

**Table 1. Overall Sex Ratios by Continent, 2001.**

Continent	Male Population	Female Population	Overall Sex Ratio
Africa	411,253,443	411,986,267	99.8
Asia	1,907,090,382	1,829,783,975	104.2
Europe	351,404,742	377,571,861	93.1
North America	239,028,087	247,004,746	96.8
Oceania	15,563,506	15,473,003	100.6
South America	173,486,299	177,333,047	97.8

SOURCE: U.S. Bureau of the Census, *International Data Base*, IDB Aggregation, Table 094, <http://www.census.gov/ipc/www/idbnew.html/>.

reported as an abnormally high 114, the sex ratio for fourth children born in that same year was an astounding 228.6.<sup>6</sup> Another example is that birth sex ratios may be lower than the sex ratios of early childhood. In India the birth sex ratio is reported to be 111–114; however, the sex ratio for ages 0–6 has dropped precipitously in the last ten years, and in some states the early childhood sex ratio is higher than the reported birth sex ratio. In Punjab, for example, the 0–6 sex ratio is now greater than 126, while its birth sex ratio is reported to be 122.8. Despite the incomplete picture afforded by birth sex ratios, we present such information as we have on the countries of Asia in Table 3.

All of the birth sex ratios for the countries listed in Table 3 are significantly higher than the 105–107 range considered normal across racial groups. Though in times past, methods of offspring sex selection included active and passive female infanticide, for these birth sex ratios to hold, prenatal offspring sex selection favoring males must be widespread. Indeed the evidence suggests that such is the case. Even accounting for underregistration and adoption of females, the skewness of these sex ratios is very real and is worsening over time. Tradition can be a stubborn force, slow to die or change. Laws on the books may simply be ignored in favor of misogynist tradition. Although prenatal sex tests are illegal in China, and in most states in India, such testing is nevertheless ubiquitous in both nations. Sex-selective abortion is illegal in both China and India, as, of course, is infanticide. As one scholar notes, “The sudden increases in sex ratios in East Asian societies are impressive—in each country,

6. Chai Bin Park and Nam-Hoon Cho, “Consequences of Son Preference in a Low-Fertility Society: Imbalance of the Sex Ratio at Birth in Korea,” *Population and Development Review*, Vol. 21, No. 1 (March 1995), p. 66, Table 6.

**Table 2. Selected Asian Countries and Missing Female Populations, 2001.**

<b>Country</b>	<b>Male Population</b>	<b>Female Population</b>	<b>Actual Sex Ratio</b>	<b>Coale's Expected Sex Ratio</b>	<b>Calculated Missing Females Assuming Coale's Ratio</b>	<b>Modern Expected Sex Ratio</b>	<b>Calculated Missing Females Assuming Modern Expected Ratio</b>
Afghanistan	13,814,607	12,998,450	106.3	103.0	413,790	100.0	816,157
Bangladesh	67,372,369	63,897,491	105.4	102.5	1,831,649	100.0	3,474,878
China	653,550,000	612,280,000	106.7	101.0	34,799,200	100.0	40,635,000
India	508,625,036	471,516,674	107.2	102.0	27,135,322	100.0	37,108,362
Nepal	12,135,861	11,562,560	105.0	102.5	277,304	100.0	573,301
Pakistan	69,232,082	65,903,113	105.1	102.5	1,640,382	100.0	3,328,969
Taiwan	11,237,506	10,670,629	105.3	101.0	455,615	100.0	566,877
<b>Total</b>					<b>66,553,262</b>		<b>86,498,544</b>

SOURCES: All figures are from the U.S. Bureau of the Census, International Data Base, with the exception of the sex ratio figure for India, which has been taken from the 2001 census, *Provisional Population Totals: India, Census of India, 2001*, Paper 1, <http://www.censusindia.net/results> (and the number of females in the population, as well as total population, has then been determined by this sex ratio), and the sex ratio for China, which was taken from "Major Figures of the 2000 Population Census," National Bureau of Statistics, People's Republic of China, March 28, 2001.

**Table 3. Reported Birth Sex Ratios for Selected Asian Nations.**

Country	Reported Birth Sex Ratio	Year and Source of Information
China	121.0	1993 and 1994 State Family Planning Commission of China, <i>Zhongguo shengyu nianjin, 1996</i> [China birth planning yearbook, 1996]
	113.8–115.4	1989–90, Zeng et al., 1993
	115.62	1994.10.1–1995.9.30; State Statistical Bureau of China (SSB) (1.04 percent sample)
	116.57	October 1, 1995, SSB (1.04 percent sample)
	118.65	April 1, 1995, SSB (1.04 percent sample)
	120.0	1999, Chinese Academy of Social Sciences
	131–400	Anecdotal reports for particular regions/towns by journalists and scholars, 1995–2000
Taiwan	110.2	1990, Gu and Roy, 1995
South Korea	109.6	2001, National Statistical Office of South Korea, July 2001
	114.0	1990, Park and Cho, 1995
	116.9	1992, Park and Cho, 1995
	117.9	1990, first births only, Park and Cho, 1995
India	111.0	1996–98, SRS data, reported in Premi, 2001
	113.7	1993–95, Jhunjhunwala, 2001
	112.2	1981–91, hospital births, Office of the Registrar General, 1991
	123.3	1996–98, SRS data for the state of Haryana, reported in Premi, 2001
	132.0	1993, one hospital in Punjab, Booth et al., 1994
	156.0	1990, town of Rohtak near New Delhi, <i>Far Eastern Economic Review</i> , 1991

SOURCES: State Family Planning Commission of China, *China Birth Planning Yearbook* (Beijing, 1996); Yi Zeng, Tu Ping, Gu Baochang, Xu Yi, Li Bohua, and Li Youngping, "Causes and Implications of the Recent Increase in the Reported Sex Ratio at Birth in China," *Population and Development Review*, Vol. 19, No. 2 (June 1993), pp. 283–302; State Statistical Bureau, *China Population Statistics Yearbook* (Beijing: China Statistics Press, 1996), 1.04 percent samples for October 1994, April 1995, and October 1995; personal communication with the director of the Chinese Academy of Social Sciences via e-mail based on article in the *Nando Times* entitled "China Reportedly Has 20 Percent More Males Than Females," January 7, 1999; Gu Baochang and Krishna Roy, "Sex Ratio at Birth in China, with Reference to Other Areas in Asia: What We Know," *Asia-Pacific Population Journal*, Vol. 10, No. 3 (September 1995), pp. 17–42; *2001 Report of the National Statistical Office of South Korea* (Seoul, July 2001); Chai Bin Park and Nam-Hoon Cho, "Consequences of Son Preference in a Low Fertility Society: Imbalance of the Sex Ratio At Birth in Korea," *Population and Development Review*, Vol. 21, No. 1 (March 1995), pp. 59–84; Mahendra Premi, "The Missing Girl Child," *Economic and Political Weekly*, May 26, 2001, pp. 1875–1880; Bharat Jhunjhunwala, "Sex Ratio Riddles," *Statesman* (India), June 2, 2001; Office of the Registrar General of India, *Compendium of India's Fertility and Mortality Indicators Based on the SRS* (Delhi: Controller of Publications, 1991); Beverly E. Booth, Manorama Verma, and Rajbir Singh Beri, "Fetal Sex Determination in Infants in Punjab, India: Correlations and Implications," *British Medical Journal*, Vol. 304 (1994), pp. 1259–1261; and Hamish McDonald, "Unwelcome Sex," *Far Eastern Economic Review*, December 26, 1991, pp. 18–19.



within a single year the sex ratio has jumped to a high level that has subsequently been sustained. This suggests that people have been anxiously awaiting the availability of sex-control technology . . . and that couples actively use such technology, regardless of fertility level.”<sup>7</sup>

The Chinese government has begun to address the problem of sex selection more seriously in recent years. Indeed Zeng Yi, director of the Demography Institute at Beijing University, freely admits, “The loss of female births due to illegal prenatal sex determination and sex-selective abortion and female infanticide will affect the true sex ratio at birth and at young ages, creating an unbalanced population sex structure in the future and resulting in potentially serious social problems.”<sup>8</sup> A vast demographic shift is taking place in Asia because of these new technologies. The scale on which sex ratios are being skewed in Asia is arguably unprecedented in human history. Furthermore, it is worthwhile to remember that China and India alone comprise more than 38 percent of the world’s population. This peculiarly Asian phenomenon may have ramifications beyond that region.

### *The Other Side of the Ratio: Surplus Males*

Selection against female offspring produces an excess proportion of males in society: surplus males. Given the long history of son preference in China, it is not surprising that the Chinese have a special term for such surplus males: *guang gun-er* (also transliterated as *guanggun*, *guangguer*, or *guanguen*), alternatively translated as “bare sticks” or “bare branches,” indicating those male branches of a family tree that would never bear fruit because no marriage partner might be found for them.

Given our focus on security, we are most interested in bare branches who are in the age group 15–34/35, as this is the male age group that commits the preponderance of violence within a society. How many young adult bare branches are there now, and how many are there expected to be in the next two decades in the two most populous nations on earth, China and India? Generally speaking we will be seeing 29–33 million young surplus males in China in twenty years and 28–32 million young surplus males in India at that same time (see Tables 4 and 5). (These are very conservative estimates, using birth sex ratios

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7. *Ibid.*, p. 79.

8. Zeng Yi, Tu Ping, Gu Baochang, Xu Yi, Li Bohua, and Li Youngping, “Causes and Implications of the Recent Increase in the Reported Sex Ratio at Birth in China,” *Population and Development Review*, Vol. 19, No. 2 (June 1993), p. 296.

**Table 4. Surplus Males, Aged 15–34, China.**

Year	Surplus Males	Source of Information
1990	14,857,587	U.S. Bureau of the Census, International Data Base
2020	29,207,874	Calculated using birth sex ratio of 111.3 for 1985–89; 118.2 for 1990–94; 115.4 for 1995–99; and 115.0 for 2000–04, with adjusted Life Table Survival Ratio (LTSR)
2020	33,059,694	Calculated as above, without adjusting LTSR

SOURCE: U.S. Bureau of the Census, *International Data Base*, IDB Aggregation, Table 094, <http://www.census.gov/ipc/www/idbnew.html/>.

that are lower than arguably should be used. For example, if the Chinese Academy of Social Sciences' figure of 120:100 male-to-female births were substituted, there would be closer to 40 million young surplus males in 2020 in China.)

Who are these young surplus males? First, they are not equivalent to the bachelors of the West. Single men in the West are not surplus males: Indeed they can and often do form semipermanent attachments to women and produce children in that context. Surplus males, on the other hand, do not have such possibilities. In a marriage market where women are scarce and thus able to "marry up," certain characteristics of young surplus males are easily and accurately predicted. They are liable to come from the lowest socioeconomic class, be un- or underemployed, live a fairly nomadic or transient lifestyle with few ties to the communities in which they are working, and generally live and socialize with other bachelors. In sum, these young surplus males may be considered, relatively speaking, losers in societal competition.

The behavior of young surplus males also follows a broadly predictable pattern. Theory suggests that compared with other males in society, bare branches will be prone to seek satisfaction through vice and violence, and will seek to capture resources that will allow them to compete on a more equal footing with others. These theoretical predictions are substantiated by empirical evidence so vast and so compelling as to approach the status of social science verity.<sup>9</sup> Cross-culturally, an overwhelming percentage of violent crime is per-

9. The literature here is immense. We cite only a few illustrative works: D. Benton, "Do Animal Studies Tell Us Anything about the Relationships between Testosterone and Human Aggression?" in Graham C.L. Davey, ed., *Animal Models of Human Behavior* (Chichester, U.K.: Wiley, 1983), pp. 281–298; Marie France Bouissou, "Androgens, Aggressive Behavior, and Social Relationships in Higher Mammals," *Hormone Research*, Vol. 18 (1983), pp. 43–61; John M.W. Bradford and D. McLean, "Sexual Offenders, Violence, and Testosterone: A Clinical Study," *Canadian Journal of*

**Table 5. Surplus Males, Aged 15–35, India.**

Year	Surplus Males	Source of Information
1991	7,267,923	<i>Census of India, 1991</i>
2006	16,509,449	Calculated using <i>Census of India, 1991</i>
2020	28,326,000	Calculated using birth sex ratio of 109.65 M:F
2020	31,671,000	Calculated using birth sex ratio of 112.23 M:F

SOURCE: Office of the Registrar General, *Census of India, 1991* (New Delhi, 1994).

petrated by young, unmarried, low-status males. As Margo Wilson and Martin Daly note, “Men are not poorer than women, but they help themselves to other people’s property more often, and they are evidently readier to use violence to do so.”<sup>10</sup>

Some may question whether marital status plays an important role in such behavioral dispositions, but this is another widely confirmed research finding.<sup>11</sup> David Courtwright notes, “It is when young men cannot or do

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*Psychiatry*, Vol. 29, No. 4 (June 1984), pp. 335–343; Kerrin Christiansen and Rainier Knussmann, “Androgen Levels and Components of Aggressive Behavior in Men,” *Hormones and Behavior*, Vol. 21, No. 2 (June 1987), pp. 170–180; James M. Dabbs Jr. and Robin Morris, “Testosterone, Social Class, and Antisocial Behavior in a Sample of 4,462 Men,” *Psychological Science*, Vol. 1 (1990), pp. 209–211; Bruce B. Svare, ed., *Hormones and Aggressive Behavior* (New York: Plenum, 1983); Jane Shibley Hyde, “Gender Differences in Aggression,” in Jane Shibley Hyde and Marcia C. Linn, eds., *The Psychology of Gender: Advances through Meta-Analysis* (Baltimore, Md.: Johns Hopkins University Press, 1986); Kenneth E. Moyer, “Sex Differences in Aggression,” in Richard C. Friedman, Ralph M. Richart, and Raymond L. Vande Wiele, eds., *Sex Differences in Behavior* (New York: Wiley, 1974), pp. 335–372; and Dolf Zillmann, *Connections between Sex and Aggression* (Hillsdale, N.J.: Erlbaum, 1984).

Regarding the youthfulness of these aggressors, see, for example, Dan Olweus, Ake Mattsson, Daisy Schalling, and Hans Loew, “Circulating Testosterone Levels and Aggression in Adolescent Males: A Causal Analysis,” *Psychosomatic Medicine*, Vol. 50, No. 3 (May–June 1988), pp. 261–272; Margo Wilson and Martin Daly, “Competitiveness, Risk Taking, and Violence: The Young Male Syndrome,” *Ethology and Sociobiology*, Vol. 6, No. 1 (1985), pp. 59–73; Derral Cheatwood and Kathleen J. Block, “Youth and Homicide,” *Justice Quarterly*, Vol. 7, No. 2 (1990), pp. 265–292; and Christian G. Mesquida and Neil I. Wiener, “Human Collective Aggression: A Behavioral Ecology Perspective,” *Ethology and Sociobiology*, Vol. 17, No. 4 (1996), pp. 247–262. The vast majority of homicides are committed by males aged 15–35. Within that age group, males aged 20–29 commit most of the homicides. See Wilson and Daly, “Competitiveness, Risk Taking, and Violence.”

10. Wilson and Daly, “Competitiveness, Risk Taking, and Violence,” p. 66.

11. See Mesquida and Wiener, “Human Collective Aggression”; Martin Daly and Margo Wilson, *Sex, Evolution, and Behavior* (North Scituate, Mass.: Duxbury Press, 1978); David T. Courtwright, *Violent Land: Single Men and Social Disorder from the Frontier to the Inner City* (Cambridge, Mass.: Harvard University Press, 1996); Theodore D. Kemper, *Social Structure and Testosterone: Explorations of the Socio-Bio-Social Chain* (New Brunswick, N.J.: Rutgers University Press, 1990); Robert Wright, *The Moral Animal* (New York: Pantheon, 1994); Laura Betzig, “Despotism and Differential Reproduction: A Cross-Cultural Correlation of Conflict Asymmetry, Hierarchy, and Degree of Polygyny,”

not marry that socially disruptive behavior is intensified.”<sup>12</sup> Robert Wright explains:

An unmarried man between 24 and 35 years of age is about three times as likely to murder another male as is a married man the same age. Some of this difference no doubt reflects the kinds of men that do and don’t get married to begin with, but . . . a good part of the difference may lie in “the pacifying effect” of marriage. Murder isn’t the only thing an “unpacified” man is more likely to do. He is also more likely to incur various risks—committing robbery, for example—to gain the resources that may attract women. He is more likely to rape. Abuse of drugs and alcohol . . . compound the problem by further diminishing his chances of ever earning enough money to attract women by legitimate means.<sup>13</sup>

Why should this be so? Allan Mazur and his coauthors have determined that T (serum testosterone) levels in men who court and then marry drop relative to men who do not: “T levels fall during the years surrounding marriage. Changing T levels may explain the low criminality found among married men. . . . Married men, living stably with their wives, are less prone to crime than unmarried men. Married men are less likely than single men of the same age to kill an unrelated male.”<sup>14</sup> According to Mazur, T has been found to be significantly related to a variety of antisocial behaviors, including trouble with the law, alcohol and substance abuse, violent behavior, and other types of rebellion and rule breaking. When T falls, so does the propensity to engage in these behaviors.<sup>15</sup> According to Mazur’s analysis, the more men in the society

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*Ethology and Sociobiology*, Vol. 3, No. 4 (1982), pp. 209–221; Martin Daly and Margo Wilson, *Homicide* (Hawthorne, N.Y.: Aldine de Gruyter, 1988); Martin Daly and Margo Wilson, “Killing the Competition: Female/Female and Male/Male Homicide,” *Human Nature*, Vol. 1, No. 1 (1990), pp. 81–107; Napoleon Chagnon, “Is Reproductive Success Equal in Egalitarian Societies?” in Chagnon and William Irons, eds., *Evolutionary Biology and Human Social Behavior: An Anthropological Perspective* (North Scituate, Mass.: Duxbury Press, 1979); David Buss, *The Evolution of Desire: Strategies of Human Mating* (New York: Basic Books, 1994); Frank A. Pedersen, “Secular Trends in Human Sex Ratios: Their Influence on Individual and Family Behavior,” *Human Nature*, Vol. 2, No. 3 (1991), pp. 271–291; and Randy Thornhill and Nancy Thornhill, “Human Rape: An Evolutionary Analysis,” *Ethology and Sociobiology*, Vol. 4, No. 3 (1983), pp. 137–173.

12. Courtwright, *Violent Land*, p. 202.

13. Wright, *The Moral Animal*, p. 100.

14. Allan Mazur and Joel Michalek, “Marriage, Divorce, and Male Testosterone,” *Social Forces*, Vol. 77, No. 1 (September 1998), p. 1.

15. See Allan Mazur and Alan Booth, “Testosterone and Dominance in Men,” *Behavioral and Brain Science*, Vol. 21, No. 3 (June 1998), pp. 353–397. There have been numerous debates over the effects of testosterone on behavior. Some suggest that it is testosterone’s transformation into estradiol that provides these effects. Others dispute that any effect exists at all. See, for example, David France, “Testosterone, the Rogue Hormone, Is Getting a Makeover,” *New York Times*, February 17, 1999, p. G3.

who are unable to marry, even though they would be willing to marry, the higher their circulating T and the greater amount of antisocial, violent, and criminal behavior they will exhibit, generally speaking, than if they were able to marry.

When bare branches congregate, the potential for more organized aggression increases substantially. For example, experiments have shown that the “risky shift” is more pronounced in groups of males than in groups of females.<sup>16</sup> The advocacy of risky choices by men in group situations appears to enhance their social prestige. As Courtwright puts it, “Men who congregate with men tend to be more sensitive about status and reputation. Even if they are not intoxicated with drink or enraged by insult, they instinctively test one another, probing for signs of weakness. . . . Disreputable, lower-class males . . . exercised much greater influence in bachelor communities like bunkhouses and mining camps. They both tempted and punished, for to fail to emulate their vices was to fail, in their own terms, to be a man.”<sup>17</sup>

In this “least common denominator” theory, the behavior of men in groups—most particularly young, single, low-status males—will not rise above the behavior of the worst-behaved individual. Together, they will take larger risks and be more violent than they otherwise would individually.

The sheer number of bare branches, coupled with the distinctive outcast subculture that binds them together and their lack of “stake” in the existing social order, predispose them to organized social banditry. The potential for intrasocietal violence is increased when society selects for bare branches, as certain Asian societies do. It is possible that this intrasocietal violence may have intersocietal consequences as well.

It is important to note that we are not claiming that the presence of significant numbers of bare branches *causes* violence; violence can be found in all societies, regardless of sex ratio. Indeed, to give but one example, the sex ratio of Rwanda in 1994 was normal. Rather the opportunity for such violence to emerge and become relatively large-scale is heightened by socially prevalent selection for bare branches. We see this factor as having an amplifying or aggravating effect. To use a natural metaphor, the presence of dry, bare branches

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16. Norris R. Johnson, James G. Stemler, and Deborah Hunter, “Crowd Behavior as “Risky Shift”: A Laboratory Experiment,” *Sociometry*, Vol. 40, No. 2 (June 1977), pp. 183–187. Playing off Irving Janis’s seminal work on groupthink, it has been noted that individuals in a cohesive group take greater risks than any one of them would individually. This has been repeatedly confirmed in experimental research.

17. Courtwright, *Violent Land*, pp. 42–43.

cannot cause fire in and of itself, but when the sparks begin to fly, those bare branches provide kindling sufficient to turn the sparks into a fire larger and more dangerous than otherwise.

### *Three Illustrative Historical Cases*

One useful way of examining this relationship between young adult surplus males and societal violence is to see how it developed in certain historical episodes where the presence of large numbers of young surplus males can be documented. The cases that follow are meant to be suggestive, not exhaustive, for we are not historians. However, because historians generally have not classified social conflict according to the involvement of bare branches, we have had to probe source material ourselves to detect their presence.

#### THE NIEN REBELLION

The Nien Rebellion of 1851–63, finally quelled in 1868, originated with an organized group of bandits from the poor area of Huai-pei in northern China.<sup>18</sup> This region has a very harsh environment, and during the first half of the nineteenth century, experienced flood, drought, or locust invasion on an average of every three to four years. Many died of starvation. The response of the people of Huai-pei to this period of famine and stress was female infanticide. Nineteenth-century statistics for the Huai-pei region reveal that there was an overall average of 129 men for every 100 women,<sup>19</sup> an extremely high sex ratio.

A significant number of Huai-pei males may have gone unmarried and had no hope of marrying. The best scholarly estimates suggest that in this period, “poorer men had to delay their marriages by six years in comparison with richer men, and that *twenty-five percent of men were unable to marry at all.*”<sup>20</sup> This accords with estimates of female infanticide in the late imperial period reaching levels of approximately 300 per 1,000.<sup>21</sup> James Lee and Wang Feng concur: “Among peasant families in north-eastern China in the century after 1774, be-

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18. This account of the Nien is adapted from the work of Elizabeth Perry, specifically Perry, *Rebels and Revolutionaries in North China, 1845–1945* (Stanford, Calif.: Stanford University Press, 1980).

19. *Ibid.*, p. 51. For purposes of comparison, the sex ratio in Dodge City, Kansas, in 1880 was “only” 124. Courtwright, *Violent Land*, p. 58.

20. David Ownby, “Approximations of Chinese Bandits: Perverse Rebels or Frustrated Bachelors?” in Jeffrey Wasserstrom and Usam Brownell, eds., *Chinese Masculinities/Femininities* (Berkeley: University of California Press, forthcoming), p. 20 (emphasis added). See also David Ownby, *Brotherhoods and Secret Societies in Early and Mid-Qing China* (Stanford, Calif.: Stanford University Press, 1996).

21. Ownby, “Approximations of Chinese Bandits,” p. 19.

tween one-fifth and one-quarter of all females were killed as children.”<sup>22</sup> The scarcity of marriageable women was deepened by polygamy and concubinage practiced by rich men, present in an estimated 10 percent of Chinese marriages of the period.<sup>23</sup> Although individual peasant families were pursuing a rational policy in preferring to rear sons who were expected to augment household income, the social impact of this policy was a serious surplus of poor, young single males. As one scholar explains, “Families adopted the practice of female infanticide to increase family income and security, but the long-term aggregate result was a skewed demography in which there was a large surplus of young men. These young men became natural recruits for bandit gangs and local militia—thus providing resources for the emergence of collective strategies of predation and protection.”<sup>24</sup>

These were the young men dubbed the “bare sticks” or “bare branches” because they would not have families: Their parents had killed the girls who should have grown up to be their wives. One Chinese official, Chen Shengshao, wrote in 1827, “Since marrying off women is hard, people raise few women. Since affording to marry is difficult, there are many bachelors.”<sup>25</sup> Chen goes on to note that it was the high price of marriage that led “homeless bandits” to “kidnap, steal, and feud.”<sup>26</sup>

James Watson of Harvard University and David Ownby of the University of Montreal have both articulated the link between permanent, involuntary bachelorhood caused by high sex ratios and violence in historical China. Watson coined the phrase “bachelor subculture” to help explain how antisocial behavior becomes the norm for these men. Ownby explains that “in the eyes of most Chinese an unmarried man is not truly an adult, not truly a man.”<sup>27</sup> He suggests that the theory of “protest masculinity,” wherein men unable to fulfill gender expectations are driven toward “hypermasculine displays in order to prove to others, as well as to themselves, that they are indeed “real men,” may apply.<sup>28</sup> Watson provides evidence for this linkage in a study of

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22. “6.3 Brides,” *Economist*, December 19, 1998, p. 57. See also James Z. Lee and Wang Feng, *One Quarter of Humanity: Malthusian Mythology and Chinese Realities, 1700–2000* (Cambridge, Mass.: Harvard University Press, 1999).

23. Ownby, *Brotherhoods and Secret Societies in Early and Mid-Qing China*.

24. Daniel Little, *Understanding Peasant China: Case Studies in the Philosophy of Social Science* (New Haven, Conn.: Yale University Press, 1989), p. 172.

25. Chen Shengshao, *Wensulu 1827*, as quoted in Ownby, “Approximations of Chinese Bandits,” p. 19.

26. Chen Shengshao, *Wensulu 1827*, as quoted in Ownby, “Approximations of Chinese Bandits,” p. 22.

27. Ownby, “Approximations of Chinese Bandits,” p. 20.

28. *Ibid.*

militias composed, he finds, of almost exclusively bare branches. He explains that

A strategy that [bare branches] sometimes use to enhance their male image is to make a regular practice of challenging the public face of other men. Face is essentially an attribute of married men who have families to protect and obligations to fulfill. Unmarried men have little face to preserve because they do not command much respect in the community. . . . By definition, therefore, bachelors remain perpetual adolescents who cannot play a full role in society. Taking this argument to its logical conclusion an unmarried youth can have no face and is therefore dangerous. . . . These “bare sticks” had nothing to lose except their reputations for violence.<sup>29</sup>

Ownby points out that the term “bare branches or “bare sticks” “refers to both violent, petty criminals as well as to bachelors” and quotes a nineteenth-century Western missionary as describing the “sublime ideal” of the “bare sticks” as making it “a sport and a matter of pride to defy the laws and the magistrates, and commit all kinds of crimes. To give and receive wounds with composure; to kill others with the most perfect coolness; and to have no fear of death for yourself.”<sup>30</sup> Ownby goes on to suggest that most bandits in historical China were, in fact, bare branches. Watson details that most bare branches in his study were semiliterate and were third, fourth, or fifth sons whose families were too poor to offer them an inheritance. In many cases, these noninheriting sons were “pushed out” (*tuei chu*) of their fathers’ houses in their teens, and came to live in bachelor houses with groups of other unmarried youths.<sup>31</sup> In their early twenties, they would move out of the bachelor house and in with a collective of men—a dormitory of workers, a monastery or religious brotherhood, or the local militia. In each case, they would spend much of their leisure time learning and practicing the martial arts. These collectives, whatever their character, often led to the formation of bandit gangs, by means of which bare branches could gain a measure of face and wealth that would otherwise be unobtainable in a society where marriage was the mark of maturity.

In the case of the bare branches of Huai-pei born in the early nineteenth century, not only were these young men never going to settle down, but most of them were not able to secure labor. Eventually, enough of these “rational bachelors” began to view banditry as an alternative lifestyle that would enable

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29. James L. Watson, “Self-Defense Corps, Violence, and the Bachelor Subculture in South China: Two Case Studies,” proceedings of the Second International Conference on Sinology, Academia Sinica, Taipei, Republic of China, June 1989, p. 216.

30. Ownby, “Approximations of Chinese Bandits,” p. 22.

31. Watson, “Self-Defense Corps,” p. 213.



them to contribute to family income.<sup>32</sup> They started as salt smugglers, an activity made profitable because of the high tax placed by the government on salt. In 1815 a county magistrate classified the troublemakers of the area into three categories: bare sticks, smugglers, and bandits. The overlap between the three groups was great.<sup>33</sup> One commentator noted, "They do not fear the imperial laws, nor do they submit to the discipline of their fathers or elder brothers."<sup>34</sup>

Initially these bandits were not out to topple the Qing dynasty; they were just looting to make a living. They began as small, autonomous groups but eventually organized. Li Ji notes, "In 1855, most of the 'Nien Zi' met at Zhi Heji (a small county in An Hui province) and united to form a powerful armed force—'Nien Jun.' The goal of the army was to overthrow the Qing Dynasty."<sup>35</sup> The Nien grew in influence, and their threat expanded. At the peak of the rebellion, as many as 100,000 bare sticks were participants. Active in Hupeh, Honan, Shantung, Kiangsu, and Anhui regions, the Nien became very powerful. In 1862 the governor of Anhui "reported that there were at least two thousand Nien forts in Huai-pei, each with one to three thousand inhabitants. The Nien apparently were in at least nominal control of a population of some two to six million people."<sup>36</sup> The imperial government was compelled to adopt foreign arms and modernize its army along Western lines, which allowed the army to finally gain the advantage and defeat the Nien over a period of several years ending in 1868.

An interesting resemblance of modern China to the era of the Nien is a contemporary echo of the Chinese official noted above who stated in 1815 that the social problems of his area stemmed from bare sticks, smugglers, and bandits. Recent analysis notes, "According to figures from authoritative departments, China has an indigent population of 80 million, a migrant population of 80 million, and will soon have 80 million single men."<sup>37</sup> Our analysis tells us that the overlap between these three populations is very large. China is re-creating the vast army of bare sticks that plagued it during the nineteenth century.

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32. See James Tong, "Rational Outlaws: Rebels and Bandits in the Ming Dynasty, 1368–1644," in Michael Taylor, ed., *Rationality and Revolution* (Cambridge: Cambridge University Press, 1988).

33. Perry, *Rebels and Revolutionaries in North China*, p. 102.

34. Kung-ch'uan Hsiao, *Rural China: Imperial Control in the Nineteenth Century* (Seattle: University of Washington Press, 1967), p. 458.

35. Li Ji, "Discussions on the Gender Imbalance in China and the Entailed Social Problems," Foreign Affairs College, Beijing, 1999, p. 11.

36. Perry, *Rebels and Revolutionaries in North China*, p. 127.

37. See Meng Ren, "Confronting Three Populations of 80 Million," *Inside China Mainland*, Vol. 19, No. 1 (January 1997), pp. 78–81.

MEDIEVAL PORTUGAL

Though medieval Portugal contained certain causal factors not present in China or India,<sup>38</sup> James Boone's case study demonstrates that when governments become aware of the bare branch threat, they consciously seek to minimize that threat through foreign policy initiatives.<sup>39</sup>

Medieval Portugal invested heavily in firstborn sons to maintain familial accumulation of resources over generations. It comes as no surprise, then, that the adult sex ratio of the time was approximately 112:100. In addition to low-status bare branches, the case of medieval Portugal is interesting because it also had *high-status* bare branches—second-, third- and higher-birth-order sons of nobility ("cadet sons") who could not inherit, and thus could not marry.

As Boone notes, this confluence of factors bred extreme political instability for Portugal; the cadet sons and the lower-class bare branches began to band together in small armies. These bare-branch bands affected governmental policy in two ways: (1) in times of political upheaval, they generally backed—by force of arms—usurpers who promised to redistribute societal resources in their favor; and (2) in less turbulent times, the government consciously pursued policies to disperse them to foreign lands, usually in causes of expansionist warfare and colonization. Boone cites the case of Joao I, the illegitimate half-brother of a Portuguese monarch, who took the throne after the monarch's death with the help of the cadet sons and their bare-branch bands. But then Joao I discovered that the piracy and robbery they caused threatened his own monarchy. Having obtained Papal consent, and at great cost and deficit, Joao I sponsored the Reconquista—an attack on the North African coast. Boone cites another scholar working from primary sources: "It was above all the *cadets*, who lacked land and other sources of revenue within the country who desired war, which would permit them to accede to a situation of social and material independence."<sup>40</sup> Indeed Georges Duby notes, "It is obvious that it was the

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38. Primogeniture was not universally practiced in India—it was more prevalent among upper castes. Primogeniture was not practiced for the most part in China, although it is reported that firstborn sons were more likely to receive land as an inheritance and younger sons were more likely to receive movable property. In some cases, all sons received some land, but the firstborn received more land than his brothers. Of course, the second factor in the Portuguese case, landed nobility, is not a major factor in either modern-day China or modern-day India.

39. The case study is adapted from James L. Boone, "Noble Family Structure and Expansionist Warfare in the Late Middle Ages," in Rada Dyson-Hudson and Michael A. Little, eds., *Rethinking Human Adaptation: Biological and Cultural Models* (Boulder, Colo.: Westview, 1983); and James L. Boone, "Parental Investment and Elite Family Structure in Preindustrial States: A Case Study of Late Medieval–Early Modern Portuguese Genealogies," *American Anthropologist*, Vol. 88, No. 4 (December 1986), pp. 859–878.

40. Boone, "Noble Family Structure and Expansionist Warfare," p. 94 (emphasis in original).

bands of 'youths' excluded by so many social prohibitions from the main body of settled men, fathers of families and heads of houses, with their prolonged spells of turbulent behavior making them an unstable fringe of society, who created and sustained the crusades."<sup>41</sup>

The expansionist strategy worked, to a certain extent. Boone notes that by the mid-sixteenth century, almost 25 percent of adult noble males would die in expansionist or civil warfare. It may be useful, however, to step back and contemplate the significant cost to society and government of creating the bare branches in the first place. Political turbulence was continual, the drain on the economy due to the required expansionist warfare was seriously detrimental to both the government and the population in general, and the loss of life and property due to the bare branch bands (and the loss of life of the bare branches themselves) was considerable. The reproductive strategy chosen—that of high sex ratio—coupled with primogeniture ensured, in Boone's words, "political instability, warfare, and territorial expansion."<sup>42</sup>

#### MARTIAL RELIGIOUS BROTHERHOODS IN HISTORICAL CHINA

In Western society, monks of centuries past are stereotypically viewed as having been peaceful, generally older men who spent their time engaged in good works, or perhaps copying manuscripts. In Chinese history, monks were very much involved in worldly affairs. Indeed the life course of "monk" or "religious zealot" was one means by which bare-branch youths could seek to raise their status in society. This choice of vocation did not necessarily preclude continuance of what we have recognized as typical bare-branch behavior.<sup>43</sup> To be more specific, martial prowess and the amassing of unearned wealth were not infrequently associated with some monasteries and other quasi-religious brotherhoods, and this had political ramifications.

Probably the most famous example is the Shaolin fighting monks, who, having saved the life of the emperor Tai Tsung in the Tang era, were given land to build a monastery that eventually housed 2,500 martial monks. But later in Chinese history, the power of monasteries would grow, especially Buddhist monasteries favored by the powerful eunuchs. In the late A.D. 800s, official figures show "over a quarter of a million monastics, who controlled some 4,600 monasteries, 40,000 pagodas, and untold thousands of temples, including

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41. Georges Duby, *The Chivalrous Society*, trans. Cynthia Postan (London: Edward Arnold, 1977), p. 120, as cited in *ibid.*

42. Boone, "Parental Investment and Elite Family Structure," p. 871.

43. Indeed certain sects of monks did not practice celibacy, though they also did not marry. We have here in mind the Taoist monks.

slaves and attendants, much of the nation's best lands, and much wealth, all existing tax free."<sup>44</sup> By the late 1400s, there were more than 1.5 million monks, with one official calculating that the rice needed to feed them all "could easily supply the entire capital population for over one year."<sup>45</sup> David Robinson has found participation of martial monks as mercenaries in quelling rebellions alongside imperial troops throughout the sixteenth century.<sup>46</sup>

Monastic orders coexisted with more heterodox quasi-religious brotherhoods, many of them secret. The migratory fluidity induced by hardship and lack of opportunity led many young men, typically bare branches of Watson's "bachelor subculture," to the ranks of these brotherhoods.<sup>47</sup> Fei-ling Davis identifies those likely to belong to secret brotherhoods as dispossessed peasants, unemployed artisans, laborers and porters, disbanded soldiers, smugglers, and victims of disasters, all of whom came to be known as the "floating population" (*you-min*) due to their mobility and their poverty.<sup>48</sup>

Sometimes the practice of martial arts was an explicit element of these secret brotherhoods. Indeed boxing exhibitions were a primary way to seek recruits. Once a young man expressed a desire to become a pupil of the boxing instructor, he would be carefully groomed to become a member of the society itself. The poorer the area, the more likely young male devotees would be found. In the late 1800s, a letter by a former magistrate noted, "The road passed through Chiping. The area is bitterly poor, but in hundreds of villages they are studying United-in-Righteousness Boxing."<sup>49</sup> According to chroniclers of the time, we can identify some hallmarks of bare-branch behavior among these boxing enthusiasts: "In this area there are many vagabonds and rowdies (*wu-lai gun-tu*) who draw their swords and gather crowds. They have established societies of various names: the Obedient Swords (Shun-dao hui), Tiger-tail Whip (Hu-wei bian), the Yi-he Boxers, and Eight Trigrams sect (Ba-gua jiao). They are overbearing in the villages and oppress the good people."<sup>50</sup>

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44. Mary M. Anderson, *Hidden Power: The Palace Eunuchs of Imperial China* (Buffalo, N.Y.: Prometheus Books, 1990), p. 162.

45. *Ibid.*, p. 226.

46. David M. Robinson, "The Management of Violence in the Mid-Ming Capital Region," Colgate University, 1998.

47. Quoted in Ownby, *Brotherhoods and Secret Societies in Early and Mid-Qing China*, p. 20. See Watson, "Self-Defense Corps."

48. Fei-ling Davis, *Primitive Revolutionaries of China: A Study of Secret Societies in the Late Nineteenth Century* (Honolulu: University of Hawaii Press, 1977), p. 90.

49. Joseph Esherick, *The Origins of the Boxer Uprising* (Berkeley: University of California Press, 1987), p. 223.

50. Quoted in *ibid.*, p. 46.

Occasionally, members of these secret brotherhoods became bandits and rebels. In 1898 the governor of Shandong reported, "This year the spring rains were late and the grain prices rose. In addition it was a time of troop reduction and consolidation. Dispersed braves and habitual outlaws from elsewhere . . . combined with unemployed vagrants into a mob of several hundreds. . . . Armed with foreign rifles and weapons, they plundered neighboring villages on the pretext of borrowing grain, and extorted horses, weapons, and ammunition."<sup>51</sup> Another contemporary commentator noted, "In the provinces of Chihli, Honan, and Shantung, *chiao-fei* [religious bandits] spread their creeds one to another. . . . Once famine occurs they, relying on their numerical strength, plunder collectively in broad daylight, calling their marauding activities 'equalizing the food.'"<sup>52</sup> We propose that several major rebellions might usefully be investigated to assess the role of bare branches, including the Eight Trigrams Rebellion, the Boxer Rebellion, and the Black Flag Army's activities.

Sometimes the fate of these rebellious bare branches was not eventual defeat and violent death, but rather astounding success. Taizu, the Grand Progenitor of the Ming dynasty had, for most of his life, been "a vagrant, a beggar, a member of a millenarian sect, and a rebel."<sup>53</sup> After the Ming slashed the number of government employees in 1629, "Li Zicheng, who eventually emerged as the rebel leader who drove the Ming from Beijing, was among those unemployed workers who threw his lot in with the rebels."<sup>54</sup> Throughout Chinese history, a standing pool of marginal men were available for violent work, and they sometimes changed the destiny of the nation. According to Gensho Nishimara, most of this pool were *wulai*, meaning young male "floaters" who prided themselves on being "tough."<sup>55</sup> Ueda Makato calls the *wulai* urban vagabonds who depended on violence to make a living, often forming "enforcers guilds."<sup>56</sup> In the Ming, government reports blamed much of the crime in Beijing on the "unregistered ones"—gangs made up of bare sticks, whose members were called "fierce tigers."<sup>57</sup> The fate of these criminals was not always bleak. For example, according to Ownby, the common folk saying "If you

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51. Quoted in *ibid.*, pp. 176–177.

52. Quoted in Hsiao, *Rural China*, p. 447.

53. Robinson, "Management of Violence," p. 8.

54. David M. Robinson, "Banditry and Rebellion in the Capital Region during the Mid-Ming (1450–1525)," Ph.D. dissertation, Princeton University, 1995, p. 490.

55. Gensho Nishimara, "Ryu Roku Ryu Nana no ran ni tsuite," *Toyoshi kenkyu*, Vol. 32, No. 4 (1974), pp. 44–86.

56. Ueda Makato, "Minmatsu Shinso: Konan no toshino burai o meguru shakui kankei, dako to kyakufu," *Shigaka zasshi*, Vol. 90, No. 12 (1981), pp. 1619–1653.

57. Robinson, "Banditry and Rebellion," pp. 126–127.

want to become an official, carry a big stick” has reference to the traditional practice of awarding the bandits with official posts as a means of co-opting them.<sup>58</sup>

Martial ethos, poverty, mobility, anonymity, and congregation with other young bachelors in a similar situation—these common attributes were found in those who made up the backbone of Chinese brotherhoods. As Ownby notes, “Secret societies were reinterpreted by scholars in the 1970s and 1980s as marginal, frequently criminal gangs, little different from ‘pure’ bandits as we usually think of them. . . . Other bandit gangs, whether they qualify as secret societies or not (the distinction is a fine one in many cases), engaged in religious practices as well, . . . [such as] initiation ceremonies and invulnerability rituals.”<sup>59</sup> These brotherhoods, whether orthodox or heterodox, were to pose grave security problems for the central government. As one seventeenth-century commentator put it, “Heretical teachings start by inciting, deluding, and gathering people, but end by planning rebellion.”<sup>60</sup> Given the high sex ratios of its society, perhaps the grave suspicion with which the current Chinese government views movements such as the Falun Gong is not entirely unfounded in light of this history.

In conclusion, there is both strong theory and persuasive historical evidence that the bare branches of high sex-ratio societies can contribute significantly to intrasocietal violence. In some cases, this domestic threat has led governments to create foreign policy initiatives designed to disperse bare branches. The strategies that bare branches choose to better their position in society erode the stability of the societies in which they live. As we have seen, governments do become aware of the potentially violent dynamics of their high sex-ratio populations and struggle, sometimes successfully and sometimes unsuccessfully—but always at great cost—to implement policies to counteract the destabilization caused.

### *The Security Logic of High Sex-Ratio Societies*

The repercussions of artificially high sex ratios pose grave problems of insecurity for a society which, in turn, create vexing policy dilemmas for govern-

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58. Ownby, “Approximations of Chinese Bandits,” p. 18.

59. Ibid. Indeed Ownby goes on to note that during the civil war, both national and communist forces courted bandits, with communists being willing to swear “blood oaths and pretend[ing] to adopt bandit/secret society codes of brotherhood and loyalty—attempting, of course, to assimilate such values to Leninist discipline.”

60. Quoted in Barend J. ter Harr, *The White Lotus Teachings in Chinese Religious History* (Leiden, the Netherlands: E.J. Brill, 1992), p. 237.

ments. As Boone puts it, "Reproductive strategies have an important effect on the development of state political organization, and . . . there is a fundamental contradiction between individual (or familial) reproductive interests and the social reproduction of the state political structure."<sup>61</sup> It is to these issues that we now turn.

#### STATE POLITICAL ORGANIZATION IN HIGH SEX-RATIO SOCIETIES

High sex-ratio societies will tend to develop authoritarian political systems over time, for these are better equipped to deal with possible large-scale intrasocietal violence created by society's selection for bare branches. As Christian Mesquida and Neil Weiner note, "Choice of political system made by the members of a population is somewhat restricted by the age composition of its male population."<sup>62</sup> Robert Wright is even more blunt: "Few things are more anxiety-producing for an elite governing class than gobs of [unmarried] and childless men with at least a modicum of political power. . . . Extreme polygyny [which is the functional equivalent of a high sex ratio] often goes hand in hand with extreme political hierarchy, and reaches its zenith under the most despotic regimes. . . . Leaving lots of men without wives is not just inequalitarian: it's dangerous. . . . A nation, in which large numbers of low-income men remain mateless, is not the kind of country many of us would want to live in."<sup>63</sup>

If Wright, Boone, Mesquida, and Wiener are right, then we can expect high sex-ratio societies to be governable only by authoritarian regimes.<sup>64</sup> Indeed, in an intriguing empirical study of 186 societies, Laura Betzig finds the correlation between despotism and polygyny to be 0.72, significant at the 0.01 level.<sup>65</sup> Though analysts have high hopes for increasing democratization in such nations as China, India, and Pakistan, we would argue that the longer-term prospects are not good when gender elements of security are factored in. These are traditionally high sex-ratio societies whose birth sex ratios have undergone a strikingly upward climb since approximately 1985 when prenatal sex-selection

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61. Boone, "Parental Investment and Family Structure," p. 859.

62. Mesquida and Weiner, "Human Collective Aggression," p. 257.

63. Wright, *The Moral Animal*, pp. 98–101.

64. It is hard to concur with William T. Divale and Marvin Harris that "warfare perpetuate[s] and propagate[s] itself because it [is] an effective method for sustaining the material and ideological restrictions on the rearing of female infants." Nevertheless, we understand how their analysis of 448 populations could result in the conclusion that "we are most likely to find unbalanced sex ratios when warfare is present." See Divale and Harris, "Population, Warfare, and the Male Supremacist Complex," *American Anthropologist*, Vol. 78, No. 3 (September 1976), pp. 531, 528.

65. Laura Betzig, *Despotism and Differential Reproduction: A Darwinian View of History* (New York: Aldine de Gruyter, 1986), p. 94.

techniques became widely available. Fortunately for the case of South Korea, stringent enforcement of anti-sex-selective abortion laws since identification of the problem in the early 1990s has led to a much improved sex ratio, hopefully auguring well for the continuance of democracy in that country. Speaking more generally about Asia, however, we are on the cusp of the time period wherein these larger proportions of bare branches will become socially active. As they do, we believe that governments in such societies will begin their predicted shift toward greater authoritarianism. In countries with high sex-ratio societies that are not ethnically homogeneous, such as India, this shift may start as rule by the majority ethnic group which group will, in turn, actually promote interethnic violence.

Indeed, governments of high sex-ratio societies must often cultivate a political style crafted to retain the allegiance and respect of its bare branches. This tends to be a swaggering, belligerent, provocative, martial style—to match that of the bare branches themselves. In the rhetoric accompanying such a posture, there is inevitably an “other,” who is weak and contemptible and whose attempt to find a place in society or in the international order must be opposed. The society is then enjoined to muster its strength so that these “insults” can be answered with appropriate action. Though all governments at one time or another may engage in these types of tactics, they take on a particular urgency for governments of high sex-ratio societies. These governments understand that its bare branches are a formidable club—if it is in your hand it can be very useful, but if it is poised over your head, it may constitute a greater threat than external enemies.

#### STRATEGIES FOR CONTROLLING INTRASOCIETAL VIOLENCE IN HIGH SEX-RATIO SOCIETIES

There is only one short-term strategy for dealing with a serious bare-branch problem: Reduce their numbers. There are several traditional ways to do so: Fight them, encourage their self-destruction, or export them. Longer-range strategies to address the problem, such as decreasing offspring sex selection, are also viable (and laudable), but are not likely to improve the government’s situation for a generation or more. Furthermore, though economic prosperity is useful in placating disgruntled members of society, including bare branches, no amount of wealth will turn surplus males into nonsurplus males. At most, it can only rearrange which males end up at the bottom of the hypergynous heap. (Hypergyny is the practice of brides marrying upward in social class, which inevitably leaves lowest-class men without wives.) Prosperity is thus no



panacea in this situation, though economic downturns are likely to trigger violent resource capture by bare branches.

Governments will always seek to suppress societal violence that threatens their authority. Indeed the government may actually recruit bare branches into military or police units that are used to fight bare-branch criminals. As we have shown in the historical studies, however, significant societal dislocation may be caused by large-scale suppression tactics.

Another approach is to simply let bare branches destroy each other, either turning a blind eye when rivals dispatch one another or encouraging ethnic divisions that will lead to intergroup violence. Once again, however, the level of societal dislocation may in the end threaten the government, as it will appear that the government has lost control over the level of violence in society. A second variant of this strategy is to provide large, dangerous public works that pay well. Building intercontinental railways or huge new dams, reclaiming vast tracts of swampland or desert—if done the old-fashioned way using primarily manual labor—can both occupy and sustain bare branches, while also ensuring significantly increased mortality among that population subgroup. Nevertheless, there may be a limit to how many such works can be undertaken by a given society.

Finally, governments seek to send bare branches elsewhere. “Elsewhere,” in the government’s perspective, may include distant frontier regions of the country or may in fact be other countries. This may be a peaceful export of colonists to a frontier or an exodus of migrant workers to other nations. There is, however, a martial variant of this strategy as well: a strategy that has been consciously used in history to reduce bare-branch numbers. If the bare branches threaten national security if they live at home, the government may prefer to let them die in some glorious national cause far from home instead. As Boone puts it, “Many males at the lower end of the scale lead lives of enforced celibacy in what for them is a seller’s market and are furthermore engaged in production, construction, and military occupations that tend to raise their mortality rates through occupational hazards and unhealthful conditions. Their poor socioeconomic position and reproductive prospects make them perennial aspirants in large-scale expansionist and insurgent military campaigns through which they might hope to achieve higher positions.”<sup>66</sup> Mesquida and Weiner have recently put some empirical flesh on these propositions. In their

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66. Boone, “Parental Investment,” p. 862.

examination of collective violence in human societies, they report, "Our analyses of interstate and intrastate episodes of collective aggression since the 1960s indicate the existence of a consistent correlation between the ratio of males 15 to 29 years of age per 100 males 30 years of age and older, and the level of coalitional aggression as measured by the number of reported conflict related deaths."<sup>67</sup> They go on to explain:

Young males participate in collective aggression to acquire the resources needed to attract a mate, and we should expect a great majority of the militants to come from that section of the population with fewest resources. . . . It is likely then that controlling elites astutely underwrite such risky undertakings as territorial expansion or colonization, especially when the alternative is having the aggressive tendencies of the male citizens directed at themselves. . . . Tentatively, we would like to propose that this intergenerational competition for reproductive resources, when exacerbated by the presence of a relatively large number of resourceless young males, might result in the emergence of male collective aggression, which occasionally expresses itself as expansionist warfare. . . . The presence of a relatively large number of young men makes coalitional aggression more probable, particularly when resources needed to attract a mate are insufficiently available or poorly distributed.<sup>68</sup>

Boone suggests that in medieval Portugal, the presence of significant numbers of bare branches ("cadet males") necessitated territorial expansion by the state. He documents the creation of "a highly competitive, volatile situation at the societal level with respect to the problem of excess cadet males. Rulers must choose between dispersing these individuals, for example, in expansionist campaigns, or facing disorder and overthrow on the home front."<sup>69</sup> Furthermore, "territorial expansion does not necessarily arise as an adaptive response on the part of a polity to expand its resource base or to solve productive deficiencies facing the population at large: expansionist warfare often results from attempts by individuals or coalitions to maintain control by directing the competition of their immediate subordinates away from themselves and against neighboring territories. These strategies . . . may be maintained at a considerable resource deficit seen from the point of view of the general population."<sup>70</sup> In sum, insights from theory and history portend that the increasing skewness of Asia's sex ratios mitigate against both democracy and peace in that region.

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67. Mesquida and Wiener, "Human Collective Aggression," p. 247.

68. *Ibid.*, pp. 256–260.

69. Boone, "Parental Investment," p. 868.

70. Boone, "Noble Family Structure," p. 81.

### *The Bare Branches of Today's Asia*

Because prenatal offspring sex selection only became widely prevalent from about 1985, we currently stand at the threshold of time in which bare branches will come to represent a greater proportion of the population in certain Asian societies than heretofore, and become a significant factor in contemporary governmental calculations. Nevertheless, there are signs that our expectations regarding the societal instability to be created by increasing numbers of surplus males are already beginning to be fulfilled.

#### CHINA

About 97 percent of all unmarried persons aged 28–49 in China are male.<sup>71</sup> Data show that approximately 74 percent of unmarried males failed to graduate from high school.<sup>72</sup> About 97 percent of rural unmarried males did not graduate from high school, and about 40 percent are illiterate.<sup>73</sup> Ye Wenzhen and Lin Qingguo note the predictably hypergynous result, “The existence of lots of unmarried men after marriage age should attribute to the rational ‘marrying up’ of women at marriage age, and the relatively low social-economic situation of the unmarried men.”<sup>74</sup>

Chinese transients are overwhelmingly young and male and of low status, and they do tend to congregate. Though we do not have data on marital status of transients, we assert that when data are collected on the subject, it will be found that most are unmarried. Reliable estimates indicate that in the *liudong renkou* (the “floating population”) of 100–150 million persons, 80 percent are under age 35 and about 72–75 percent are male.<sup>75</sup> One 1993 sample finds 81.8

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71. Ping Zhang, “Issues and Characteristics of the Unmarried Population,” *Chinese Journal of Population Science*, Vol. 2, No. 1 (1990), pp. 87–97. Ping’s figure of 94 percent is a little low, because he only examines single persons aged 28–49. His figures are also from 1987. Reasonable adjustments to his figures based on our own demographic statistics yield a percentage of about 97 percent.

72. *Ibid.*

73. *Ibid.*

74. Ye Wenzhen and Lin Qingguo, “The Reasons and Countermeasures for Demographic Phenomena in China,” *Chinese Demography*, Vol. 4 (1998), as quoted in Ren Feng, “Bare Branches among Rural Migrant Laborers in China: Causes, Social Implications, and Policy Proposals,” Foreign Affairs College, Beijing, May 24, 1999, p. 12.

75. Age data are from “HIV/AIDS—What the Chinese Experts Say,” <http://www.usembassy-china.org.cn/english/sandt/webaids3.htm> (accessed July 10, 1998). Sex data are from Zhao Yi, *The Population, Resources, Environment, Agriculture, and Continuous Development of 21st-Century China* (Shan Xi: Economic Publishing House, 1997), p. 144; Zang Xiaohui, Wu Zhingang, and Chen Liangbiao, “Age Difference among the Rural Labor Force in Interregional Migration,” *Population Science of China*, Vol. 9, No. 3 (1997), pp. 193–202; and Bruce Gilley, “Irresistible Force,” *Far Eastern Economic Review*, April 4, 1996, pp. 18–22. Another revealing statistic is that approximately 82 percent of men remaining unmarried between the ages of 30 and 44 are registered residents of rural

percent of migrants to be male.<sup>76</sup> The floating population is expected to surpass 200 million persons in the next decade.<sup>77</sup>

The transients have not been smoothly integrated into urban life, and they do tend to congregate for social support. *Inside China Mainland* reports that “the increase in migrants has placed an added burden on already overloaded city infrastructures. On the outskirts of major towns, unplanned settlements have sprung up, where not only is public order and safety a problem, but where counterfeit goods and pornography are produced, and where the sex trade is prominent.”<sup>78</sup> The periodical goes on to note that “over two million migrants are living in that nation’s train stations, warehouses and along the tracks.”<sup>79</sup> We assert that these are probably bachelor subculture communities. Transient workers find bewildering differences when they first come to cities, “often experiencing disdain or exclusion from urbanites.”<sup>80</sup>

The development of a large floating population was always a harbinger of increasing social unrest in historical China. The ranks of the “floating people” (*liu min*) were full of the poor, the unemployed, and the vagrant, all of whom were noted to be prone to violence. Indeed a common governmental reaction to this phenomenon throughout history was periodic registration drives, in which floaters would be registered and placed in an administration unit, where they would be under the daily supervision of a government employee. This response, dating back at least four or five centuries,<sup>81</sup> has recently been adopted by the current government, which is also demolishing unlicensed markets and migrant housing and placing strict limits on the number of registered migrants a company can hire. Beijing authorities recently enunciated the goal of reducing legal migrants by at least 15 percent, while hoping to slash illegal migration.<sup>82</sup>

Given that the 100–150 million floating population of China is overwhelmingly young, male, and low status—characteristics that we have demonstrated

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areas. China Statistical Publishing House, *China Population Statistics Yearbook (1994)*, pp. 36–53. Of all persons remaining unmarried between the ages of 30 and 44, more than 94 percent are male.

76. Ji Dangsheng and Shao Qin, *The Tendency and Management of Chinese Population Movement* (Beijing: Beijing Publishing House, 1996), p. 99.

77. Li Jingnen, “Challenge to Chinese Population Theory Research on the Period of the 21st Century,” *Chinese Population Science*, n.s. 4 (1998), p. 10.

78. Meng, “Confronting Three Populations of 80 Million,” p. 79.

79. *Ibid.*, p. 80.

80. Quote from Ji Yang, “Transient Workers: A Special Social Group,” and “Educating Transient Workers,” *Beijing Review*, June 3–9, 1996, pp. 20–21.

81. Robinson, “Banditry and Rebellion”; see, for example, p. 16.

82. Erik Eckholm, “As Beijing Pretties Up, Migrants Face Expulsion,” *New York Times*, April 18, 1999.

to be hallmarks of bare branches—can the typical bare-branch behavioral syndrome be found among China's floaters? The answer is an unequivocal yes.

Though crime data for China are very sketchy, and statistics vary from source to source, a clear pattern begins to emerge: Migrants are responsible for an inordinate amount of crime in China today. According to one source, in economically developed regions, migrants account for more than 50 percent of all arrests. "In the Jingdiao area of Shanghai's Pudong region, . . . migrants now account for over 90 percent of crimes, compared to 30 percent in 1990." The same source notes that "among all cases solved by railway authorities in 1994 concerning criminal acts and public order, 82 percent were committed by migrants, while 69% of criminals apprehended were migrants."<sup>83</sup> *Beijing Review* reports that "outsiders were responsible for 80 percent of criminal offenses in the capital. Similarly, it was found that 80 percent of the people arrested in the southern Pearl River delta and other coastal regions came from other provinces."<sup>84</sup>

Duan Chengyang reports, "In 1994, . . . the rate of committing crime among the rural migrant laborers was 1.3 percent, which was four times the national average. In Shanghai, Beijing, and other very large cities, the criminal cases committed by the rural migrant laborers accounted for more than half of the total criminal cases in these cities. Guangzhou even reached 80 percent."<sup>85</sup> Yet another scholar indicates that migrants "are said to be responsible for between one-third to 70 percent of all criminal activities in Chinese cities, with offenses ranging from theft, robbery, prostitution, to drug peddling, extortion, and murder." Other sources estimate that migrants account for 90 percent of criminals in Hangzhou.<sup>86</sup> Zhang Haiyang notes, "Generally speaking, the rural laborers are less educated, are extremely heterogeneous in composition, and lack the sense of law. When their requests cannot be satisfied, they tend to commit crimes."<sup>87</sup>

Yingyi Situ and Liu Weizheng, comparative criminologists, provide the following analysis and statistics:

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83. Meng, "Confronting Three Populations of 80 Million," p. 80.

84. Tan Li, "The Population Flow into Big Cities," *Beijing Review*, July 18–24, 1994, p. 17.

85. Duan Chengyang, "Floating Population and Its Effects on Rural and Urban Socioeconomic Development," *Population Research*, Vol. 22, No. 4 (1998), as quoted in Ren, "Bare Branches among Rural Migrant Laborers in China," p. 16.

86. Linda Wong, "China's Urban Migrants—The Public Policy Challenge," *Pacific Affairs*, Vol. 67, No. 3 (Autumn 1994), p. 340.

87. Zhang Haiyang, "On Flowing Population in Qiqiha'er: Current Conditions and Management," *Plan Study*, n.s. 5 (1997), p. 23.

The influx of rural people has caused a variety of problems for the cities. Besides the extreme pressure derived from the shortage of living space, transportation, water, electricity, and gas supplies, the worst problem is crime. According to recent statistics from the Administrators of Public Security, 569,000 of the offenders arrested by the police in 1994 were transient people. In Beijing, 44% of the crimes solved by the police were committed by transients. In Shanghai, this rate has been continually rising from 10% in the mid-1980s to 60%, even 80% in some districts, by 1995. In Xiamen, 62% of the crimes in general, and 82% of the felonies, were committed by transients. In Guangdong province, 90% of the prostitutes and drug traffickers were temporary residents. Burglary was the most serious crime in Guangzhou city in 1994, with 80% of it being committed by transients. Apparently, whereas the regular city residents are responsible for a portion of the crimes, the new migrants constitute a large majority of the problem in the major Chinese cities. Moreover, our study found that many crimes committed by transient people are senseless and ruthless. An argument over a word can lead to a cold-blooded fight; burglars often kill the victims or witnesses on the scene if the offense is observed; highway robbery, rape, and kidnapping usually end with the victims' death; and a complaint about the poor quality of goods sold by transient vendors can cause injury in a severe physical assault.<sup>88</sup>

Notable is the specific mention of details so characteristic of bare-branch behavior: senseless, ruthless violence over words, insults, and injured pride.

Other rebellious activity has been noted as well. One source notes that in 1996 there were 12,000 labor strikes and protests, mostly carried out by migrant workers with grievances over pay.<sup>89</sup> The 2001 entry of China into the World Trade Organization is thus a double-edged sword. On the one hand, entry into the WTO is liable to facilitate long-term Chinese prosperity. On the other hand, the concessions made by China will fall heavily on workers in both agriculture and heavy industry. Chi Lo, a senior Asian economist based in Hong Kong, expects urban employment to double as a result.<sup>90</sup> And another study suggests, "Millions of farmers . . . would have to leave their homes and find new jobs in urban areas."<sup>91</sup> One anonymous Western economist predicted a "blood bath" for Chinese farmers as a result of China's accession to the WTO.<sup>92</sup> It is important to remember that these two groups—farmers and

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88. Yingyi Situ and Liu Weizheng, "Transient Population, Crime, and Solution: The Chinese Experience," *International Journal of Offender Therapy and Comparative Criminology*, Vol. 40, No. 4 (December 1996), p. 295.

89. Meng, "Confronting Three Populations of 80 Million," p. 78.

90. Paul Eckert, "China's Monumental Leap," Reuters, November 21, 1999, <http://www.desnews.com/cgi-bin/libstory-state?dn99&9911220265>.

91. *Ibid.*

92. Erik Eckholm, "One Giant Step for Mr. Jiang's China," *New York Times*, November 21, 1999, sec. 4, p. 4.

heavy-industry workers—are groups with a heavy representation of bare branches. What WTO accession means for China, then, is that more bare branches will join the ranks of the unemployed. In the short term, then, the potential for instability may be worse than economists estimate. We hope it is not worse than the Chinese government estimates. Indeed we could not help but note that press reports indicate that one major source of recruits for the Falun Gong is the unemployed.<sup>93</sup>

Observers of the larger picture seem intuitively aware of the propensities of bare-branch syndrome behavior to disrupt society. One source refers to the migrant workers as “a volatile social factor,” another asserting that “the challenge facing Chinese officials—central, provincial and urban alike—is to keep this giant [migrant] work force happy, or at least satisfied with their lot. If they fail, public order will deteriorate as restless migrants tire of being treated as second-class citizens.”<sup>94</sup> This deterioration is reflected in the fact that crime in China is increasing significantly over time. In 1998, criminal cases rose 22 percent, explosions increased 9 percent, and murders increased almost 6 percent.<sup>95</sup>

In a very interesting development that bears continued scrutiny, the Chinese government has increased the number of troops assigned to the People’s Armed Police by fourteen divisions, to about 1 million men total. The mission of the People’s Armed Police is to maintain internal stability, in particular by quelling incidents of domestic unrest and rioting typically caused by economic complaints regarding unemployment and taxes. According to policy analysts John Corbett and Dennis Blasko, “By increasing the size of the People’s Armed Police, the leadership in Beijing implicitly acknowledges that internal unrest is a greater threat to the regime’s survival and Chinese economic modernization than is foreign invasion.”<sup>96</sup>

In a move fraught with ominous historical parallels, however, many of the new members of the People’s Armed Police are what one expert termed “the dregs.”<sup>97</sup> As noted, the use of bare branches by various Chinese dynasties to control other bare branches typically backfired. The abuses, corruption, and violence of the “co-opted” bare branches came to rival those of the bare-branch bandits they were supposed to be controlling. Keeping these “troops” close to

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93. Eckert, “China’s Monumental Leap.”

94. First quote from Li, “Population Flow into Big Cities,” p. 17; second quote from Gilley, “Irresistible Force,” p. 18.

95. “Chinese Saw Crime Jump 22% in First 9 Months of 1998, Report Says,” Reuters, February 10, 1999, <http://www.desnews.com/cgi-bin/libstory-state?dn99&9902101255>.

96. Quoted in Erik Eckholm, “A Secretive Army Grows to Maintain Order in China,” *New York Times*, March 28, 1999, sec. 1, p. 6.

97. Quoted in *ibid.*

rich metropolises proved to be a very unwise strategy. In Robinson's study of mid-Ming banditry and rebellion, he finds that many of the foremost bandit and rebel leaders were formerly in the imperial military. Indeed some were *still* in the military while engaging in pillage and brigandage. As Robinson puts it, "Managing these men of force was a delicate balance, and the price of failure could be very high. The same factors that made these men attractive to military officers, civil officials, and local gentry were precisely those that made them most dangerous—skill in arms, physical bravery, a willingness to use violence, a band of followers, and ties that extended beyond the confines of local society. Allied with proper authorities, these men were a potent addition to the forces of order. If, however, relations between these men and the powers that be broke down, they became a frightening avatar of social chaos."<sup>98</sup>

#### INDIA

Much the same analysis can be made concerning India today, where the bare branches are to be found primarily in the north and northwest states.<sup>99</sup> Interestingly, these states are referred to as India's "Wild West," and hold almost half of India's population, as well as the highest fertility rates in the country and the highest sex ratios.

Power in these states, especially Uttar Pradesh (UP) and Bihar, comes from the organized criminal gangs (*goondas*) embedded deeply in their societies. Private armies abound, and corruption has led to the development of a kleptocracy, in which gangs are now elected officials in state government. More than 10 percent of Bihar's legislators are well-known criminals. In Uttar Pradesh, 132 of 424 members of the Vidhan Sabha are "suspected criminals."<sup>100</sup> In commenting on the pervasiveness of violent crime in Uttar Pradesh and Bihar, one journalistic account notes, "In Uttar Pradesh, kidnapping is a way of life, especially in the western UP. Most gangs are politically connected." Regarding Bihar, the account continues, "Kidnapping is one of the main growth industries. Two people are snatched for ransom every day."<sup>101</sup>

Indeed there is a statistically significant relationship between violent crime rates and the sex ratio in Indian states. Sen notes that "extensive interdistrict contrasts . . . show a strong—and statistically very significant—relation be-

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98. Robinson, "The Management of Violence," p. 35.

99. *Census of India, 1991*, Series 1, Part 2-B(i), Primary Census Abstract General Population, Vol. 1.

100. Farzand Ahmed and Subhash Mishra, "Stooping to Conquer," *India Today International*, November 10, 1997, p. 22.

101. Samar Halarnkar, Sayantan Chakravarty, and Smruti Koppikar, "Fear in the City," *India Today International*, October 6, 1997, p. 14.



tween the female-male ratio in the population and the scarcity of violent crimes. Indeed, the inverse connection between murder rates and the female-male ratio in the population has been observed by many researchers.”<sup>102</sup> Using 1981 crime statistics, Philip Oldenburg was able to show a striking correlation in Indian states and also in districts of Uttar Pradesh between the sex ratio and the murder rate. The calculated Pearson’s  $r$  was  $-0.72$  (sex ratio defined as number of females per 100 males). Indeed the states with the worst sex ratios—the states of the north and northwest of India—are termed by Oldenburg “the Bermuda Triangle for girls.”<sup>103</sup>

Jean Dreze and Reetika Khera replicated Oldenburg’s research, correlating murder rates (1980–82) with the female-to-male sex ratio (1981), in addition to other variables such as urbanization, poverty rate, literacy rate, and so forth. The strongest correlation found was between murder and sex ratio, which were inversely related. As the authors note, “This correlation is very robust: no matter which other variables are included or excluded from the regression, we found that the female-male ratio remained highly significant, always with a negative sign. Further, the size of the coefficient of the female-male ratio is quite large.”<sup>104</sup> We updated the above analyses by using the 1991 census data and the most recent murder rate available (1997) and found the same strong relationship, yielding  $p \leq .07$ . This is *prima facie* evidence that this linkage has persisted in India through the late 1990s.

The robust and persistent link to be found in the Indian case leads us to the same conclusion as Dreze and Khera: “What seems clear is that there is a strong link of some kind between gender relations and criminal violence (not just violence against women, but violence in the society as a whole). . . . This issue may be crucial in understanding criminal violence in many societies.”<sup>105</sup>

### *Conclusions*

Francis Fukuyama has wondered whether the democratic peace phenomenon is better explained by the status of women in democracies than by the existence of democratic institutions themselves.<sup>106</sup> Our analysis takes this one step

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102. Amartya Sen, *Development as Freedom* (New York: Alfred A. Knopf, 1999), p. 200.

103. Philip Oldenburg, “Sex Ratio, Son Preference, and Violence in India: A Research Note,” *Economic and Political Weekly*, Vol. 27, Nos. 49 and 50 (1992), pp. 2657–2662.

104. Jean Dreze and Reetika Khera, “Crime, Gender, and Society in India: Insights from Homicide Data,” *Population and Development Review*, Vol. 26, No. 2 (June 2000), p. 342.

105. *Ibid.*, p. 347.

106. Francis Fukuyama, “Women and the Evolution of World Politics,” *Foreign Affairs*, Vol. 77, No. 5 (September/October 1998), pp. 24–40.

further. In a way, the very type of government to which a nation can aspire may be tied to the status of women in society. When that status is very low, the possibilities for a full and meaningful democracy and for a peaceful foreign policy are distinctly less. High sex-ratio societies, denoting a very low status for women, cannot be expected to emulate normal sex-ratio societies either in terms of their form of government or in terms of their tendency toward peacefulness. Any attempts at that emulation may prove, historically speaking, to be short-lived. And any attempts by scholars from normal sex-ratio societies to project their own security logic onto a high sex-ratio society will lead to miscalculation. High sex-ratio societies simply have a different security calculus.

Our analysis does not lend itself to precise prediction. Nevertheless, a few broad prognostications can be put forward. First, the prognosis for the development of full democracy in China is poor. The prognosis for the maintenance of a viable democracy in India (or Pakistan for that matter) is troubled. These are all high sex-ratio societies, and their governments will be hard-pressed to deal with the ever-increasing numbers of bare branches that will arise in the next few decades. A move toward authoritarianism is much more likely, according to our analysis. As mentioned, we would also expect, in the case of India (and Pakistan), an increase in sectarian and ethnic violence.

Second, the prognosis for a conflict such as that over Kashmir between India and Pakistan is likewise poor. India and Pakistan, both high sex-ratio societies, are unlikely to settle the conflict peacefully. Though there may be occasional movements toward a settlement, we predict that the conflict will either remain a protracted war of attrition or, possibly, become an open interstate war. Each society has plenty of bare branches to spare in such a conflict—and the respective governments might be happy to spare them. Likewise, any compromise or conciliation will probably be viewed as humiliating by a high sex-ratio society. We found it noteworthy that the 1999 Pakistani pullback from Kashmir was followed in short order by a military coup in that nation.

We are tempted to suggest that the same logic would apply to the China-Taiwan controversy, but the international ramifications are much broader there, and deterrence may remain effective in this situation. Nevertheless, it should never be forgotten by policymakers on either side of the Pacific that the worst-case scenario implies that China may have close to 40 million young adult bare branches to spare in twenty years, and that the government may at that point ardently wish to see them give their lives in pursuit of a national interest. The alternative is to allow them to remain a threat to national interest,

which may increasingly be seen as an untenable policy position by the government.

The bottom line is that the politics of handling significant numbers of bare branches are liable to become a more pronounced and more explicit part of government calculation in these nations. The relationship we see is not straightforward cause and effect: Strife and war obviously take place within and between normal sex-ratio cultures as well. Nevertheless, exaggerated gender inequality, as we have seen, may provide an aggravating catalyst to the mix of insecurity factors leading to conflict. All we have found suggests that high sex-ratio societies in contexts of unequal resource distribution and generalized resource scarcity breed chronic violence and persistent social disorder and corruption. Though these phenomena certainly exist as well in societies without high sex ratios, the bare branches of high sex-ratio societies present an unmistakable aggravating and amplifying effect, leading to disruption on a larger scale than might be possible in societies with lower sex ratios.

In conclusion, exaggerated gender inequality is a potentially serious source of scarcity and insecurity. As Barbara Miller has argued, a normal sex ratio is a “public good,” and governments that fail to preserve that public good do their societies a disservice with tangible negative consequences.<sup>107</sup> The scale on which sex ratios are being artificially altered in Asia today is, generally speaking, unprecedented in human history. What are the consequences of this vast demographic shift? What happens to societies that explicitly *select* for increasing and disproportionate numbers of bare branches? We suggest that societies with young adult sex ratios of approximately 120 and above are inherently unstable, and both China and India are, at this writing, nearing that level and will probably surpass that level in the next two decades.<sup>108</sup> We stand at the thresh-

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107. Barbara D. Miller, “Female-Selective Abortion in Asia: Patterns, Policies, and Debates,” *American Anthropologist*, Vol. 103, No. 4 (December 2001), pp. 1083–1095.

108. In the historical time periods we examined, sex ratios of greater than 120 have been noted. With regard to China and India, such very high sex ratios were usually regionally or temporally bounded (a particular region would embrace female infanticide for a time). Never before in history, however, have entire nations engaged in such high rates of offspring sex selection. It is the new, cheap technology that allows for this heightened and nationwide prevalence. Thus the scale (in terms of what percentage of the country’s population is practicing offspring sex selection) is unprecedented in human history. Also, never before have China and India had such huge populations. For example, China’s population at the turn of the twentieth century was about 460 million persons. Today it is more than 1.2 billion persons. The combination of these two factors means that the sheer number of bare branches being created in Asia is also unprecedented in human history. Yet, given the pockets of high sex ratios in history, we can also say with some confidence that societies that reach and exceed 120 males per 100 females in the young-adult age group are inherently unstable.

old of a time in which these young surplus males will increasingly figure into the deliberations of Asian governments. Not only the nations of Asia, but the nations of the world will want to pay close attention to the ramifications of Asia's spiraling sex ratios and the policy choices they force upon Asian governments. How ironic it would be if women's issues, so long ignored in security studies as simply irrelevant, became a central focus of security scholars in the twenty-first century.