



COMMENTARY

SIBLING INCEST AVOIDANCE: FROM WESTERMARCK TO WOLF

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A commentary on
SEXUAL ATTRACTION AND CHILDHOOD ASSOCIATION: A CHINESE BRIEF FOR EDWARD WESTERMARCK.

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IN 1891 Edward Westermarck published *The History of Human Marriage*, wherein he attempted to explain the commonplace observation that siblings rarely mate with one another. Influenced by Darwin, by ethnographies, and by studies of nonhuman animal behavior, Westermarck hypothesized that children who are reared together from birth—as siblings usually are—develop a mutual sexual aversion that is manifested during their postpubescent years. The Westermarck hypothesis (WH) was initially well received, although a few scholars expressed reservations. As Westermarck successfully addressed these concerns, the WH received even wider support.

In the early 20th century, however, the WH suffered a dramatic reversal of fortune, due in part to the ascent of Freudianism. Although Westermarck rebutted Freud's claim that children innately experience strong sexual attraction to their closest relatives, a claim that

lacked empirical support, the hypothesis nonetheless slipped into a decline that lasted decades.

The ascent of Freudianism, however, probably was not the only reason for this decline. During the 20th century, most social and behavioral scientists came to believe that human behavior is overwhelmingly determined by the "environment." Although the psychological implications of this belief rarely were (or are) made explicit, it in fact implies that human behavior is underpinned by a few unspecialized psychological mechanisms. In other words, the "standard social science model" (SSSM) of human psychology (Tooby and Cosmides 1992) conceives of the human mind as a content-independent, general purpose machine, wherein a few vaguely characterized domain-general processes of association and imitation are regarded as sufficient to explain human behavior. Because the WH implies the existence of one or more specialized psychological mechanisms, designed specifically to solve the problem of incest avoidance, it is incompatible with the SSSM. This incompatibility may be the most important reason for the decline of the WH during the 20th century.

To selection-minded students of human behavior, however, the WH is virtually inevitable. During the course of human evolutionary history, sexually mature human kin regularly encountered one another, and deleterious recessive alleles and short-generation pathogens were omnipresent, which essentially guaranteed that there were consistent selection pressures to avoid inbreeding. Therefore, humans can be expected to have evolved psychological mechanisms dedicated to preventing incest.

The initial problem that a mechanism for avoiding incest must solve is the detection of cues that, over evolutionary time, reliably identified close kin. Similar cues may have sometimes identified different types of kin (i.e., mother, father, sibling, offspring), but to the extent that different cues identified different types of kin, the evolution of multiple mechanisms that underpin kin recognition is to be expected.

During the course of human evolution, children reared by the same woman usually would have been siblings; hence one incest avoidance mechanism could have been designed to identify individuals residing in close proximity during the early years of life and to inhibit the development of sexual attraction to these individuals. This is exactly the sort of mechanism that is implied by the Westermarck hypothesis.

Despite these theoretical considerations and the existence of abundant evidence that non-human animals, as well as humans, rarely mate with close kin, most social scientists continue to imagine that human incest avoidance results from some sort of generalized process of "social learning." If one assumes that both the WH and the "social learning" hypothesis of sibling incest avoidance are plausible and worthy of empirical investigation, then the obvious test case—the exception that proves the rule—is one in which individuals of the opposite sex are reared together from birth and are not prohibited from marrying and mating with each other. The WH predicts that when such individuals reach puberty they will not experience mutual sexual attraction, whereas the social learning hypothesis predicts that they will be as likely to be sexually attracted to one another as are any two strangers of the opposite sex. The question, in short, is: Will familiars breed?

Arthur Wolf has devoted over 35 years of his academic career to analysing such a test case, a sort of natural experiment. When the Japanese colonial government assumed control of Taiwan in the late 1800s, it began to compile meticulous household registers that included records of all births, deaths, adoptions, marriages and divorces. Using these registers, Wolf painstakingly analysed the records of 14,000 Taiwanese women comprising two ethnic groups, living in 26 villages and two towns.

During the period in which the registers were kept, three different forms of marriage were practiced in Taiwan. In the "minor" form, a female infant or young girl, called a *sim-pua* (little daughter-in-law), was adopted by her future husband's family and reared in close association with him until their wedding day, when they were expected to adopt the roles of husband and wife. In other words, not only was there no "incest" prohibition imposed on the youngsters, but eventual marriage and mating was expected and encouraged. In the "major" form of marriage, husband and wife were reared in their respective natal households and remained there until the day of their arranged marriage. The wife then became part of her husband's family and, traditionally, resided with them. The "uxorilocal" form of marriage was similar to the major form except that the married couple resided with the wife's rather than the husband's family.

Wolf reasoned that if early cohabitation, rather than prohibition of incest, inhibits the development of mutual sexual attraction, then one would expect that individuals married in the minor fashion to have experienced less mutual sexual attraction, and consequently a lower fertility rate, a higher divorce rate, and a higher frequency of extramarital affairs, than individuals married in the other two forms. Although Wolf does not report tests of statistical significance, his voluminous data seem to confirm each of these predictions. Wolf concludes that individuals who had been reared together were not sexually attracted to one another, despite intense familial and social pressures to have a fertile marriage.

The primary determinant of the intensity of sexual attraction between individuals married in the minor fashion appears to have been the *sim-pua's* age at adoption. The younger the girl

was at the time of adoption, the lower the fertility rate and the higher the rates of divorce and extramarital affairs. Controlling for the age of the son, if the *sim-pua* was more than three or four years old at the time of adoption, minor marriages were essentially indistinguishable from the other two marriage forms in these respects. The age of the family's son when the *sim-pua* was adopted, however, had little or no effect.

Over the years Wolf repeatedly returned to the field to gather additional data in order to test various alternative explanations proposed by his critics. Two such alternatives were: (a) females given up for adoption may have been, on average, less healthy than those who remained with their natal families and, as a consequence, may have produced more low birth-weight babies and suffered higher infant mortality rates; and (b) the various stresses of adoption, rather than the experience of early cohabitation, may have been responsible for the lower fertility of minor marriages.

To test the hypothesis that the poor health of *sim-puas* accounted for their lower fertility, Wolf examined (among other things) the mortality rates of women and their offspring. If *sim-puas* were typically less healthy than girls raised by their own parents, this fact should be reflected either in their own mortality rates or those of their offspring. Wolf found that, in fact, a *sim-pua's* chances of dying between one and four years of age were almost double those of a girl raised by her natal family, but among women who survived to marry there were no differences among marriage forms in the probability that a woman would survive to age 65, nor did the mortality rates of children differ according to the marriage form of their parents; this implies that women in minor marriages were not less healthy and did not bear weaker or more sickly children.

A second challenge to Wolf's interpretation was the hypothesis that the physical and psychological stresses that accompanied adoption caused the diminished fertility and higher divorce rates of minor marriages, because *sim-puas* were often weaned earlier, worked harder, and fed less than girls who were raised by their own parents. In response to this criticism, Wolf examined (among other things) the records of *sim-puas* who, for whatever reason, ul-

timately married someone other than the son of the family into which they were adopted. These women were as fertile as women married in the major and uxori-local fashions.

Although Wolf's core hypothesis explicitly concerns the psychology of sexual attraction among human beings, a number of inferential steps lie between his data—primarily the household registers compiled by the Japanese—and the psychological processes of long-dead Taiwanese (i.e., the nature of Wolf's data required him to observe human sexual psychology through a pretty dark glass). Yet actual living humans can be observed today everywhere in the world rarely mating with, or reporting frustrated lust for, their siblings. These humans can be brought into the laboratory and their sexual desires, histories, dispositions, and aversions can be probed with all the armaments of modern psychology and physiology. If potential evidence about the nature and development of sexual attraction among humans is all around us, why are Wolf's data on the Taiwanese and the late Joseph Shepher's similar data from Israeli kibbutzim (Shepher 1971) so often viewed as the acid tests of the WH?

The answer is to be found in the peculiar history of the social and behavioral sciences during the 20th century, which developed almost entirely innocent of Darwinism. One of the many unfortunate consequences of this innocence was the widespread acceptance of the SSSM. Had the social and behavioral sciences been even minimally informed by Darwinism, the existence of specialized psychological mechanisms designed by selection to avoid inbreeding depression would have been widely anticipated, and the WH never would have fallen into disfavor. But most social and behavioral scientists did adopt the SSSM and, hence, had to assume that if humans rarely mate with or report frustrated lust for their siblings, it must be because they have "learned" their sexual desires from their elders. This assumption, in turn, rests on two premises, rarely explicitly stated or examined. First, "messages" that one's siblings are not appropriate objects of sexual desire are somehow transmitted from elders to offspring with exceedingly high reliability; and second, such messages affect the development of sexual attraction with exceedingly high reliability. But in fact, there has

never been any evidence that either of these premises is true, or even plausible.

In other words, the phenomena that Wolf's and Shepher's data control for have never been shown to exist, and there is no reason to suppose that they do exist. Westermarck himself alluded to this issue in discussing the development of homosexuality: "Moreover, the [social learning] theories in question imply that the home is kept free from incestuous intercourse by law, custom, or education. But even if social prohibitions might prevent unions between the nearest relatives, they could not prevent the desire for such unions. The sexual instinct can hardly be changed by prescriptions; I doubt whether all laws against homosexual intercourse, even the most draconic, have ever been able to extinguish the peculiar desire of anybody born with homosexual tendencies" (Westermarck 1921:192). Everything we have learned about the development of sexual attraction in the century since Westermarck wrote these words indicates that he was right. Nevertheless, given the assumptions that permeate the social and behavioral sciences to this day, Wolf's research is valuable; it is another blow on the stake in the heart of the SSSM.

The absence of evidence that elders reliably transmit messages about who is not an appropriate sexual partner, or that such messages

would affect the development of sexual attraction if they were transmitted, means that ordinary humans in every society are suitable research subjects. Indeed, research is currently underway in our laboratory to illuminate the development, nature, and operation of the psychological mechanisms underpinning sibling and father-daughter incest avoidance.

Ironically, Wolf's most significant finding is not that early cohabitation promotes sexual aversion—which must be fairly obvious to anyone who has not been indoctrinated with the crippling dogmas of Freudianism or the social sciences—but rather that coercive social forces can constrain human sexual behavior far more than one might have imagined, based on one's own limited experiences and intuitions. Although minor marriages among the Taiwanese undoubtedly were, on average, less sexual, fertile, stable, and happy than other marriage forms, they did occur; the spouses at least occasionally did have sexual relations with each other, children were conceived, born, and raised, and many couples remained together for life. Perhaps the most startling lesson to be drawn from Wolf's research is this: individuals who have been reared together from early childhood nonetheless will marry and mate with each other—in spite of their mutual sexual aversion—if their freedom to choose a mate is sufficiently constrained.

REFERENCES

- Shepher J. 1971. Mate selection among second-generation kibbutz adolescents: incest avoidance and negative imprinting. *Archives of Sexual Behavior* 1:293-307.
- Tooby J, Cosmides L. 1992. The psychological foundations of culture. In *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*, edited by J H Barkow, L Cosmides and J Tooby, pp 19-136. New York: Oxford University Press.
- Westermarck E A. 1921. *The History of Human Marriage*. Fifth Edition. London: Macmillan.