

How Children Learn About Sex: A Cross-Species and Cross-Cultural Analysis

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Abstract Scattered and not widely disseminated evidence from primatology, anthropology, and history of childhood sexuality support the hypothesis that throughout much of human behavioral evolution that human children have learned about sex through observing parental sexuality and then imitating it in sexual rehearsal play with peers. Contemporary theories of psychosexual development have not considered the possibility that young children are predisposed to learn about sex through observational learning and sexual rehearsal play during early childhood, a primate-wide trait that is conserved in humans but suppressed in contemporary contexts.

Keywords Childhood sexuality · Psychosexual development · Sex education · Childhood sex play

Introduction

Gray and Anderson (2010) claim as a broad generalization for humans that “Sex in plain view is usually not permitted. That taboo does not exist for other species” (p. 195). Gray and Anderson go on to note that, as a consequence, “Our sex in-privacy-tendencies also present an interesting challenge to children’s developing sexuality: our young, unlike other primates, do not have ready occasion to witness public acts of sex...human young must find out these things through other avenues” (p. 196). Yet, two anthropological reviews of normative childhood sexuality in cross-cultural perspective reported that in some cultures children have

opportunities to observe adults, including their parents, having sex (Ford & Beach, 1951; Frayser, 2003). Thus, within the anthropological literature there are different opinions as to the species-wide pattern for how children learn about sex. The developmental psychology literature has yet to consider the question of how children learn about sex during early childhood.

The assumption that the concealment of parental sexuality from children is a species-wide pattern appears to be taking a modern Western assumption about human sexuality and mistakenly turning it into a species-wide norm. This mistaken assumption can only be maintained by ignoring contradictory evidence from primatology (Anderson & Bielart, 1990; de Waal, 1990, 2007), anthropology (Konner, 2010; Malinowski, 1929), and history of childhood sexuality (Archibald, 2007; Montgomery, 2007) that the species-wide norm has been until relatively recently in human behavioral evolution for children to observe their parents having sex and then imitate parental sexuality in sexual rehearsal play with peers from as early as 3 or 4 years old. Thus, the primate-wide predisposition to learn about sex through direct observation that Gray and Anderson (2010) cited as characteristic of other primate species has been conserved in humans but suppressed through modern traditions of childhood sex training that attempt to maintain the sexual innocence of children until puberty.

This article will review the scant and scattered evidence for learning about sex during early childhood through observational learning and sexual rehearsal play. Though the evidence is sparse, converging lines of evidence from primatology, anthropology, and history of childhood sexuality support the hypothesis that concealing parental sexuality and prohibiting sexual rehearsal play was not the species-wide pattern within “the environment of evolutionary adaptedness” (Bowlby, 1969). The assumption that children are sexually innocent and that their innocence needs to be protected appears to have inhibited systematic research in this area of childhood psychosexual development. The implications will be discussed for theories of psychosexual development that children

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are predisposed to learn about sex at an early age through observations of parental sexuality and sexual rehearsal play.

Early Childhood Sexuality in the Current Psychological Literature

There is a significant research literature on the development of sex differences (Maccoby, 1966), gender role development (Fagot, 1995), and the development of sexual identity (Rosario, Schrimshaw, Hunter, & Braun, 2006) but a paucity of systematic research on the development of children's sexual curiosity, sexual knowledge, sexual fantasies, sexual pleasures, and sexual practices as though such issues are not developmentally activated until the hormonal surges of puberty. Thigpen (2009) has suggested that the lack of systematic research on normative childhood sexuality creates a problem for clinicians as it is widely appreciated that sexually abused children demonstrate a higher level of sexual behavior than non-abused children (Browning & Laumann, 1997; Einbender & Friedrich, 1989; Kendall-Tackett, Williams, & Finkelhor, 1993; White, Halpin, Strom, & Santilli, 1988). Yet, it is difficult to know what might be problematic sexual behavior in childhood without knowing the range of normative childhood sexual behaviors within different cultural contexts. Thigpen (2009) noted that this could be a problem in evaluating the sexual behavior of low income African American children between ages 10 and 12 without known sexual abuse who display more sexual behavior than do primarily white middle class children of the same ages.

The interviewees in Kinsey's (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953) research, as young as 11 years old, retrospectively reported prepubertal sexual curiosity, masturbation, and sex play with peers at a significant frequency. Thigpen (2009) has summarized how more recent studies based primarily on parental self-report show that young children engage in sexual play (Lamb & Coakley, 1993; Leitenberg, Greenwald, & Tarran, 1989; Okami, Olmstead, & Abramson, 1997); show interest in viewing the bodies of others, as well as displaying their own (Friedrich, Fisher, Broughton, Houston, & Shafran, 1998; Friedrich, Grambsch, Broughton, Kuiper, & Beilke, 1991; Phipps-Yonas, Yonas, Turner, & Kauper, 1992; Shafran, 1995); and have knowledge of sexual anatomy and function (Gordon, Schroeder, & Abrams, 1990; Grocke, Smith, & Graham, 1995). Studies of childhood sexuality based on self-report do not capture the sexual behaviors that children hide from parental observation. In addition, parental behavior observations do not systematically assess the level of sophistication of young children's knowledge of sexual anatomy and function at different ages in different cultural contexts and how that knowledge influences children's sexual desires and practices.

Gordon et al. (1990) reported that none of the children in their study, ages 2–7, possessed much understanding of adult

sexual behavior, presumably because their parents restricted access to such information. Lower class children knew less about sex and lower class parents possessed more restrictive attitudes towards sexuality. Understanding was assessed by showing children pictures of a nude adult male and female in bed with covers up to the chest and asking what were these people doing when they touched each other in bed.

A study conducted in the Netherlands found that parents that reported taking showers with their children in the second year of life also reported that their children tried to touch the parents' genitals with expressions of joy, enthusiasm, laughter, and fascination on their faces but the parents prohibited that behavior (Schuhrke, 2000). Presumably, children would respond similarly in other cultures in which children bathe or shower with their parents. On the basis of retrospective recall of college students, it was found that exposure to parental nudity during early childhood and sleeping in the parental bed was not associated with any adverse problems of adjustment during adulthood and that exposure to nudity between ages 6 and 11 was associated with greater sexual activity (Lewis & Janda, 1988). Higher levels of sexual activity were reported among children who were exposed to higher levels of nudity within the family (Friedrich et al., 1991). Parents who encouraged nudity were also more physically affectionate with their children (Rosenfeld et al., 1984) and touching parental genitalia and mother's breasts was associated with bathing with parents (Rosenfeld, Bailey, Siegel, & Bailey, 1986). Western parents limit these contacts when the child's curiosity is interpreted as sexual (Rosenfeld, Siegel, & Bailey, 1987).

Hoyt (1979), in retrospective interviews of young adults, found no evidence that exposure to actual scenes of parental sexuality (Freud's primal scene) resulted in adult psychopathology. Family relationship patterns appeared to determine reactions to primal scene experience. An 18 years longitudinal study of early childhood exposure to parental nudity and sexuality according to parental self-report found 44 % exposure to parental nudity and 32 % exposure to parental sexuality in a population consisting primarily of sexually liberal families and a smaller number of sexually conservative families. No harmful effects of either parental nudity or exposure to parental sexuality were found at age 17–18 (Okami, Olmstead, Abramson, & Pendleton, 1998). Parents reported that children, ages 4–6, who observed parental sexual relations either appeared neutral/noncomprehending or amused and giggled (Rosenfeld, Smith, Wenegrat, Brewster, & Haavik, 1980). Studies have yet to be conducted as to the upper bound age in which exposure to parental nudity or scenes of parental sexuality would still be deemed appropriate among parents who let young children make such observations.

A summary of the limited research conducted (i.e., 25 studies mostly using either parental observation or retrospective report) in modern Western contexts supports the idea that children during early childhood are sexually curious creatures who take pleasure in genital stimulation (de Graaf & Rademakers, 2006).

Martinson (1976), in an earlier summary of eroticism in infancy, suggested an orgasmic capacity among boys during early childhood based on the estimation of Kinsey et al. (1953) that half of all boys could experience orgasm by age 3 or 4. Data are lacking on the orgasmic capacity of girls during early childhood. Young children could be understood as possessing a significant propensity to seek tactile pleasure in genital stimulation. Psychoanalysts since Freud (1905) have postulated that children also possess an erotic fantasy life from an early age, including incestuous fantasies, but no systematic research has yet explored that issue during early childhood. On the basis of adult retrospective self-report of conscious awareness of first sexual attractions, it could seem as though human sexual attraction and arousal only begins with puberty or perhaps only a few years before (Reynolds, Herbenick, & Bancroft, 2003).

None of the more systematic research done to date on early childhood sexuality addresses the specific research question of how children learn about and understand human sexual relations during early childhood. As a consequence of this lacuna in the psychological literature, it is necessary to turn to other disciplines that have garnered behavior observations relevant to this question and examine this issue from an interdisciplinary perspective.

How Nonhuman Primates Learn About Sex

de Waal (2007) reported on the basis of his observations of captive chimpanzees that chimpanzee juveniles are sexually active though they have not reached sexual maturity: “The juvenile males mate with every female who allows them to, even their own mothers” (p. 162). The mothers, only when they are in estrus, will push their sons away as soon as the son has an erection but would allow other infants to try to mate. During weaning, mothers sometimes placate their upset sons by presenting to them whereupon their sons mount them and thrust with intromission (Tutin, 1979). Anderson and Bielert (1990) reported that baboon infants and juveniles, though not fertile, begin practicing adult sexual behaviors through play. Both sexes present themselves to other baboons to be mounted regardless of age or sex and also mount other baboons indiscriminate of age and sex. de Waal (1987, 1988, 1990) noted that bonobos show a large amount of intergenerational sexual behavior that occurs in all possible age and sex combinations. For example, an instance was reported of a 2 year-old female infant mounting a 7 year-old adolescent male, pressing her vulva against his erect penis. Besides mounting behavior, de Waal observed juveniles involved in mouth-to-mouth kissing with prolonged tongue–tongue interaction, fellatio, and manual massage of another individual’s genitals. Bonobos as young as 2 years old while still nursing were observed to be sexually active. Genital to genital rubbing has been observed between mothers and their infant sons (Hashimoto & Furuichi, 1994).

Gibbons/siamangs form monogamous pair bonds and live in nuclear family units like humans but do not live in a group

in which friendly alliances need to be formed with non-kin but instead live within a defended territory (Bagemihl, 1999). In a review of gibbon/siamang sexuality, Bagemihl noted that bisexual incestuous relations between parents and children and among siblings are not uncommon (see also Edwards & Todd, 1991). Dixon (1998), in a review of primate sexuality, reported that sociosexual behavior such as mounting, presentation, mutual embracing, and genital inspection or manipulation begins in infancy in many monkeys and the great apes though males show higher frequencies of some of these behaviors than females.

Prepubertal nonhuman primates have a very strong behavioral response to observations of adult sexual relations, including their mothers. de Waal (2007) reported that chimpanzee juveniles are fascinated by adult sexual relations and sexually harass the copulating couple by jumping on the male’s back or by trying to push them apart and wriggle in between. de Waal and Lanting (1997) reported similar juvenile sexual behavior among bonobos. de Waal (2007) believed that jealousy motivated pre-pubertal chimpanzees to harass the copulating couple. Immature and adult members of over 30 primate species have been observed harassing the copulating couple (Dixon, 1998). Some cognitive psychologists believe that secondary emotions such as jealousy may occur even in non-primate species such as dogs (Morris, Doe & Godsell, 2008).

An analogous observation in humans has been that infants as young as 10 months exhibit angry behavior in response to viewing affectionate interchanges among family members which evoke pushing behavior in the attempt to either interrupt or gain entry into the affectionate interchange (Cumings, Zahn-Waxler, & Radke-Yarrow, 1981). Though there is little research on the developmental psychology of jealousy in humans, some initial studies appear provide evidence that it emerges in the first year (Hart & Carrington, 2002) and becomes quite strong in the second year (Masciuch & Kienapple, 1993). The extent to which young children are motivated specifically by sexual jealousy, as opposed to being jealous of the attention or affection that others receive has yet to be investigated.

Tomasello (1999) reported that chimpanzees are very good at “emulation learning.” Sexual rehearsal play might be necessary for species typical sexual behavior as an adult. Rhesus monkeys deprived of juvenile sex play by being raised in isolation do not become competent in copulatory presenting and mounting and may respond violently in sexual situations (Harlow, 1962). Outside of Harlow’s work there does not seem to be any research on variability in the sexual behavior of pre-pubertal primates under different environmental conditions. Humans are capable of imitation learning, implementing a behavioral strategy through observational learning from as young as 9 months (Tomasello, 1999). Given the greater cognitive sophistication of human children relative to other pre-pubertal primates, one might assume that human children would correctly infer quite a bit more from observations of adult sexual behavior than would other primates. Empathy for the distress of others emerges as a stable disposition

by the third year of life (Knafo, Zahn-Waxler, VanHulle, Robinson, & Rhee, 2008). The extent to which sexually curious 3 or 4-year-olds possess a capacity to empathize and identify with the sexual desire and pleasure of others has yet to be investigated. Such an empathic capacity could generate jealousy of the parents' sexual pleasure as well as romantic intimacy.

Establishing the primate-wide norm of learning about sex through observation and rehearsal play is important to understanding the evolutionary history of human psychosexual development. It raises the questions of when and why humans began to conceal parental/adult sexuality from children and prohibit sexual rehearsal play. Is learning about sex through observation and sex play prior to puberty a primate-wide trend that is conserved in humans but suppressed by restrictive traditions of sex training that are perhaps of relatively recent cultural origin? Or in the long course of human evolution did human psychosexual development incrementally shift from the primate-wide pattern creating a developmental delay in the optimal time for learning about sex until puberty or shortly before.

Learning About Sex in Cross-Cultural Perspective

Malinowski (1929) described the psychosexual development of children in the Trobriand Islands based on a combination of parental self-report, the self-report of children that use "smutty" language freely, and behavioral observations. Malinowski reported that children slept in bed with their mothers until they were weaned around 2–3 years old and the father slept somewhere else. Upon weaning, the father resumed sexual relations with the mother and the child was allowed to watch parental intercourse though sometimes being told to put a mat over his or her head. Trobriand parents have sex in what anthropologists have referred to as the "Oceanic position." "The mother lies down on her back, the legs spread and raised, and the knees flexed. The man kneels against her buttocks, her legs resting on his hips... but the far more usual position is with her legs embracing the man's arms" (p. 283). The child was allowed to watch at his or her discretion until puberty. Concurrently, children began to engage in sex play in the bush. Adults accepted such behavior as normal as long as it was done in private. Children engaged in manual and oral stimulation of each other's genitals as well as simulated sexual intercourse.

A search of the Human Relations Area Files, an anthropology data bank managed by Yale University, identified several cultures from around the world in which children learn about sex through observing parental sexuality and engaging in sexual rehearsal play: the Amhara of Africa (Messing, 1985), the Aymara of Peru (Tschopik, 1951), the Santal of India (Mukherjea, 1962), the Sherpa of Nepal (Paul, 1982), and the Alor of the South Pacific (DuBois, 1944). Ford and Beach (1951) were the first to note that in a variety of cultures children learn about sex through observing parental sexuality and imitating it in sex play.

In at least one culture, children also have opportunities for observing adults other than their parents having sex. Among

the Panoan Matis of Amazonia, there is a high frequency of infidelity that occurs in the secrecy of the forest on a bed of leaves off of forest paths. Though the typical passerby discreetly passes the other way, the very young children do not and their conversations and playful imitation of copulation as early as four or five suggest how knowledgeable they are (Erikson, 2002).

What is of particular relevance for theorizing the evolution of human psychosexual development is looking at hunter-gatherer childhoods that are assumed to reflect patterns of psychosexual development within the "environment of evolutionary adaptedness" (Bowlby, 1969). The Hazda, who are hunter-gatherers of Tanzania, have sex while their children are sleeping next to them outside around a hearth or in a hut (Marlowe, 2010). Shostak (1976) observed among the !Kung that "when a child sleeps with his mother, in front, and his father sleeps behind and makes love to her, the child watches" (p. 262). Konner (2010), in a review of hunter-gatherer childhoods, reported that hunter-gatherer children imitate parental sexual relations in simulated sexual intercourse in relatively small mixed-sex, multi-age play groups. Among the !Kung (Konner & Shostak, 1986; Shostak, 1981), "Playful experimentation with sex began in early childhood and continued through middle childhood... their play groups were frequently out of sight of adults, sexual curiosity flourished. Adults did not approve of sex play and when it became obvious they discouraged it" (Konner, 2005, p. 30). Curiously, hunter-gatherer cultures, like the Hazda or !Kung, that are permissive towards childhood sexuality tend to be fiercely egalitarian and highly respectful of individual autonomy (Boehm, 1999) and do not pressure children to obey authority (Shostak, 1976).

There is very little historical research looking at the question of how children of the past have learned about sex within a Western context. Archibald (2007) reported that medieval European children were likely to witness sexual intercourse given the lack of privacy in medieval homes and that it was quite normal to share beds and sleep naked, even past puberty. Montgomery (2007) noted that concerns about parental sexual privacy and having children sleep in separate beds in separate bedrooms is a relatively modern cultural practice that is not normative for slum children who often grow up being very knowledgeable about sex from an early age.

Responsiveness to Early Childhood Sexuality in Cross-Cultural Perspective

Holmes (2007) noted that a secure attachment is best facilitated by pleasurable touch-mediated experiences in the caregiver/infant relationship. Interpersonally, sensitive kissing, cuddling, tickling, holding, stroking, patting, etc. make for a secure home base. There appears to be considerable cross-cultural variability in what is considered interpersonally sensitive touching of children's genitals. Certain types of mutual stimulation of erogenous

zones have been normative in certain cultural contexts. Mead (1935) reported that, among the Arapesh while breastfeeding, the mother “playfully slaps its genitals...The child in turn...plays with one breast while suckling the other, teases the breast with its hands, plays with its own genitals, laughs and coos” (p. 41).

Navaho women also routinely stroke the genitals of a nursing child with her hand (Kluckhohn, 1947). Among the Navaho, it has been suggested that boys react more strongly to weaning because mothers appear to more frequently stroke their male rather than their female babies’ genitals (Leighton & Kluckhohn, 1947). Eibl-Eibesfeldt (1989) observed the breastfeeding infant playing with the free breast of the mother and manipulating the mother’s nipple in five different cultures and some mothers report having orgasms while breastfeeding (Ford & Beach, 1951) suggesting that the exchange of pleasurable tactile stimulation may sometimes be reciprocal. Among the Siriono Indians these observations of reciprocity were made:

Babies are tickled a great deal in the neck region and on the genitals. When they are nursing, their mothers excite them sexually. The pleasure derived from play and fondling is often noticeably reciprocal. Nursing infants sometimes fondle their mothers’ breasts and bring them into sharp erection (Holmberg, 1969, p. 202).

The age at which children that are still breast feeding might possess some empathic awareness of the emotional impact of their stimulation of their mothers’ breasts and thereby experience vicarious sexual pleasure through identification has yet to be investigated.

Among the Alor, “the child is given genital satisfaction through deliberate masturbation. One of the favorite substitutes for offering the breast in an effort to pacify the child is to massage its genitals gently. It was my impression that this device for pacifying children was used even more by siblings than adults” (DuBois, 1944, p. 37). Thus, in some cultures, there is recognition of and responsiveness to the apparent tactile pleasure that infants and young children obtain from genital stimulation given the observed effects of such stimulation (i.e., soothing a distressed infant or generating a playful exchange). In those cultures, interpersonally sensitive genital touching appears to be an extension of the wide variety of touch-mediated experiences that facilitate attachment security.

The extent to which the experience of pleasurable genital stimulation is “sexual” in the adult sense of the term has yet to be investigated through studies that might demonstrate similar patterns of physiological arousal and brain activation. Exactly when the ideational components of sexual desire arise has yet to be systematically researched through verbal children’s self-report though many psychoanalysts believe that sexual fantasies arise quite early in life. Freud (1918) believed that observing scenes of parental sexuality would provide ideational content for children’s sexual fantasy life. Modern sexually restrictive parents might refrain from allowing their children to observe scenes of parental sexuality as

they don’t want to put sexually stimulating ideas in their children’s minds.

The Hormonal Substrate of Pre-pubertal Sexual Tendencies

One of the reasons that some social scientists have been skeptical about the notion that children are sexual creatures prior to puberty, including sexual feelings towards the parents, has been an assumption that the neurohormonal basis of human sexual desire is not activated until puberty. Such social scientists cannot imagine how it could possibly be adaptive for children to be sexual creatures prior to puberty nor have incestuous desires given the deleterious consequences of inbreeding. Nevertheless, as a consequence of observations of childhood sexuality among Trobriand Islanders, Malinowski (1927) concluded that the emerging evidence suggests “a steady and gradual increase of sexuality in the child, the curve rising in a continuous manner without any kink” (p. 50). More recently, Herdt and McClintock (2000) proposed a stage of psychosexual development between six and ten which they refer to as adrenal puberty as opposed to gonadal puberty. Beginning around 6 years old, the adrenal gland in both sexes begins to secrete increasing levels of androgens that are associated with the increasing intensity of childhood sexual attractions and desires, supporting Malinowski’s idea of a continuously rising curve. Yet, more recent evidence indicates that adrenarche actually begins as early as 3 years old (Palmert et al., 2001; Remer, Boye, Hartmann, & Wudy, 2005), around the time children begin to engage in sexual rehearsal play.

Parental Attitudes Toward Early Childhood Sexuality Within a Contemporary Western Context

Martin (2009), using survey data from more than 600 heterosexual mothers of young children, ages 3–6 years old, examined how mothers normalize heterosexuality for their young children. She found that most of these heterosexual mothers, who were parenting in a gendered and heteronormative context to begin with, assumed that their children were heterosexual, described romantic and adult relationships to children as only heterosexual, and made gays and lesbians invisible to their children. Those who considered that their children could someday be gay tended to adopt one of three strategies in response: Most pursued a passive strategy of “crossing their fingers” and hoping otherwise. A very few tried to prepare their children for the possibility of being gay. A larger group, primarily mothers from conservative Protestant religions, worked to prevent homosexuality.

Frankham (2006) collected data indicating that the way in which modern and supposedly sexually progressive parents

engaged in didactic sex education with young children was to wait for children to ask questions and to only give the minimal answers necessary in the most euphemistic terms possible, while almost always avoiding the topic of pleasure in genital stimulation. Concurrently, such parents routinely prohibited interactive sex play when it was observed. So although such parents have been significantly more liberal in approach than their own parents, they nevertheless tried to preserve as much childhood sexual innocence and ignorance as they possibly could without denying the basic facts of sexual reproduction. Ironically, it would appear that both sexually conservative and sexually liberal parents practice similar childhood sex training in terms of concealing parental sexuality and prohibiting interactive sex play.

The Martin (2009) and Frankham (2006) studies that examined the sort of didactic sex education that parents attempt during early childhood do not address the question of what children actually conclude from such cursory discussions and what conclusions they might be drawing from their own independent observations, despite their parents' best efforts to shield them from making observations of adult sexuality. What has yet to be systematically examined is Freud's (1907, 1908) hypothesis that even in social contexts that hide adult sexuality from children that children from an early age are inquisitive sexual agents trying to discover where babies come from and how babies are made. Freud (1918) noted that children's sexual researches might be facilitated by observations of animal coitus or by sleeping in their parents' bedrooms during the first years of life which allow opportunities for witnessing parental intercourse firsthand.

Interestingly, Thigpen's (2009) research among low income African American children demonstrated a significant decrease in sexual behavior from early childhood to middle childhood but then a significant elevation of sexual behavior during late childhood with the approach of puberty. Malinowski (1927) proposed that Freud's (1905) concept of a sexual latency phase of psychosexual development during middle childhood is an artifact of sexually restrictive sex training that is not found in more sexually permissive cultures that possess a more tolerant attitude towards children's sexual rehearsal play.

Given parental discomfort with early childhood sexuality, it is not surprising that this discomfort would extend into adolescence. In addition to adult squeamishness about discussing sexuality with their adolescent children, many adolescents stonewall their parents' attempts to talk about sex as though it were an unwanted invasion of their privacy (Hyde et al., 2010). It would appear that it is during early childhood that children might be most openly curious about parental sexuality and most likely to actively solicit didactic sex education from their parents if their sexual curiosity and playful sexual explorations were not actively stifled by the need to preserve their sexual innocence. By the time Western children are adolescents, a talk about sex might be superfluous to Western children as adolescents assume rightly or wrongly that they have surreptitiously learned all they need to know about sex elsewhere, be it through friends, pornographic magazines, porno-

graphic internet sites, or secret sex play with peers that may be of the same sex or of the opposite sex.

Discussion

Research pertaining to the question of how young children learn about sex is scant and widely scattered among diverse disciplines. Montgomery (2009) has noted that within anthropology the number of ethnographies that focus on children's sexuality has been very limited due to squeamishness about prying into matters that are seen as private and due to a fear of appearing to display a prurient or perverse interest in children's sexuality. Even when researchers are interested in investigating children's sexuality, it might still be difficult to pass institutional review boards or obtain funding. Nevertheless, the existing but widely scattered primatological and anthropological data indicate that nonhuman primates, hunter-gatherer children, and children in various small tribal cultures from around the world learn about sex through observational learning and sexual rehearsal play prior to puberty. Psychological research in contemporary western contexts indicates that during early childhood children are sexually curious and appear to enjoy pleasure in genital stimulation but contemporary western parents tend to conceal parental sexuality, prohibit interactive sex play, and take a minimalist approach to early childhood sex education in the attempt to preserve childhood sexual innocence.

Converging lines of evidence from anthropology, primatology, and history of childhood sexuality support the idea that a predisposition to learn about sex through observational learning and sexual rehearsal play during childhood is a primate-wide tendency that is conserved in humans. Nevertheless, in a modern context there is an unquestioned assumption by sexually restrictive parents and some mental health professionals that exposure during early childhood to scenes of parental sexuality and imitation of parental sexuality in sexual rehearsal play would derail normal species-wide psychosexual development. It is not clear from the anthropological literature if prevalence rates of various childhood behavior disorders or adult psychopathologies are significantly different in cultures that allow observations of parental sexuality and its imitation and cultures that suppress those aspects of childhood sexuality.

Freud (1918) believed that direct exposure to the "primal scene" (i.e., a scene of parental sexuality) was inherently pathogenic due to the sexual overstimulation of such a voyeuristic experience. Yet, Money (1990) proposed that: "human beings who are heirs to Western civilization have a long cultural heritage of negative strategies for dealing with juvenile sexual rehearsal play. These are strategies of vandalism that thwart, warp, and distort the normally developing lovemap and make it pathological" (p. 448). Data are mostly lacking on the long-term psychological effects of either observing scenes of parental sexuality or of engaging in sexual rehearsal play with peers during early childhood or middle

childhood. There is some “primal scene” research by Hoyt (1979) and Okami et al. (1998) that found no increase in psychopathology among young adults who had been exposed to parental nudity or scenes of parental sexuality during early childhood. Nonhuman primates do not demonstrate pathogenic effects from observations of adult sexuality or from sex play with adults or kin.

Bullough (2004), a historian of sexuality, has discussed the creation of the myth of childhood sexual innocence. Bullough noted that in medieval and early modern Europe that early childhood was regarded as a period of purity, innocence, and faith so that boys and girls could sleep together if they were younger than 7 years of age. Nevertheless, at least since the early modern period, there was also what could be called the “Puritan view” that held that the child was naturally wicked and the function of education was to help the child control his or her sexual proclivities, especially masturbation. During the nineteenth century, massive fears of childhood masturbation dominated discussions of childhood. Bullough noted that one effect of the belief in childhood innocence was the growth of efforts to preserve and protect children by keeping information about sex from them so as to protect their sexual innocence from being destroyed by premature sexual stimulation, exposure, and/or knowledge.

Fishman (1982) noted that prior to 1700 that the Western historical record does not reveal much concern with childhood sexuality. For example, in 1601 the future Louis XIII as a 2 year old child publicly played with his “cheater” to the delight of those who attended him. On occasions, the nurses or ladies of court took him to bed with them to fondle his “cheater” (Fishman, 1982). The cultural evolution from *laissez-faire* hunter-gatherer approaches to the sexual enlightenment of children to much more restrictive modern approaches has obtained extremely limited consideration from a historical perspective. Nevertheless, the few historical treatments of this subject (Archibald, 2007; Bullough, 2004; Fishman, 1982; Montgomery, 2007; Rousseau, 2007) support the proposition that concealing parental sexuality from children and prohibiting sexual rehearsal play have only become normative in the West in the last 300 years. The sociocultural reasons for this shift from *laissez-faire* to more restrictive patterns of childhood sex training pose an interesting question. It appears to be a part of the overall trend that emerged towards the end of the seventeenth century of focusing attention on human sexuality so as to control it through heightened surveillance and disciplinary regimes (Foucault, 1990).

The idea that children are predisposed to learn about sex during early childhood through observation and imitation of parental/adult sexuality has implications for contemporary theories of childhood psychosexual development. Developmental psychology has yet to consider this hypothesis as a research question to be systematically explored. As a consequence, there is an unrecognized lacuna in theories of psychosexual development that derive entirely from research in developmental psychology.

In terms of psychoanalytic theories of psychosexual development, Freud (1905) appears to have been right that young children are sexually curious creatures who enjoy genital stimulation and who are prone to identify with and emulate parental sexuality. Freud (1918) over-estimated the inherently pathogenic effects of early exposure to scenes of parental sexuality and of interactive sexual rehearsal play with peers if such observational learning and rehearsal play is normative in some cultural contexts of which Freud was unaware. Yet, early childhood sexual experiences might still be traumatic in cultural contexts in which considerable sexual disgust, shame, and guilt is instilled in relation to childhood sexual curiosity and interactive sex play. And childhood sexual experiences might be traumatic in any cultural context in which sexual interactions are not interpersonally sensitive touch-mediated experiences (i.e., more coercive, frightening, and painful than playful, affectionate, and comforting).

Exactly what constitutes interpersonally sensitive sexual touching at various ages prior to puberty has yet to be researched. Such research is necessary to understand what kind of childhood sexual touching is traumatogenic and when deprivation of interpersonally sensitive and age appropriate sexual touching becomes pathogenic (traumas of commission versus traumas of omission). The anthropological data support the idea that some affectionately playful sexual touching in the breastfeeding mother/infant relationship can promote attachment security, can facilitate learning to mutually regulate sexual arousal within a sexual encounter without overstimulation, and can provide an early maternal affirmation of infantile sexuality. Sexual rehearsal play with peers can provide a safe venue for sexual exploration and experimentation that facilitates learning to mutually regulate sexual arousal without overstimulation while experiencing sexual affirmation.

Sexual interactions are more likely to be experienced as traumatic that threaten attachment security, that diminish self-worth by exploiting the child’s limited ability to resist unwanted sexual experiences initiated by more dominant individuals, that are overstimulating due to interference with self-regulation of sexual arousal, are physically painful, or that involve engaging in sex acts that activate internalized sexual disgust, shame, and guilt. Those sorts of traumatic experiences are most likely when adolescents or adults use pre-pubertal children as sex objects to facilitate orgasm. Such sexual practices do not appear to be normalized in cultures that allow limited playful or soothing fondling of infantile genitalia, observation of parental sexuality, and pre-pubertal play group sexual experimentation. Peer sex play could also be potentially traumatogenic to the degree it possesses coercive aspects.

The contemporary assumption that almost all types of early childhood sexual observation or sexual interaction constitute sexual abuse appears to be an overgeneralization. Yet, it is understandable that individuals concerned with the lasting pathogenic effects of childhood sexual molestation might rather err on the side of caution. Such caution might extend to being unduly

suppressive of developmental experiences that might be conducive to learning how to comfortably regulate sexual arousal with another person and sexual self-esteem.

Contemporary evolutionary psychology attributes the avoidance of incest among humans to the Westermarck effect (Westermarck, 1926) or the “familial bond hypothesis” (Erickson, 1993) that assume that developmental familiarity in the context of a strong attachment bond in early childhood precludes the developmental of sexual feelings towards close kin. The primatological and anthropological data suggest some qualifications as to the exact timing of the onset of the Westermarck effect. Prior to puberty, nonhuman primates and human children appear to have a sexual response that is indiscriminate of kinship or attachment status. Parental/adult prohibitions of cross-generational or sibling sex play in humans appears to be necessary to prevent incestuous interactions between parents and children or between siblings. Presence or absence of parental prohibition may be why in some cultures first cousins who are also developmentally familiar become desirable marital partners (Flinn, 1981) but in other cultures arouse disgust by virtue of violating the incest taboo.

The Westermarck effect has yet to be systematically studied among the hunter-gatherer and small tribal cultures that are not sexually restrictive. Shepher (1983) reported a low intermarriage rate among people who were raised as children together in the communal childrearing system of the Israeli kibbutz as evidence for a universal Westermarck effect. Yet Shor and Simchai (2009) found that people who were raised as children together on the kibbutz did report sexual attraction towards one another as adults and that a measure of decreasing sexual openness in the kibbutz predicted decreased sexual attraction toward peers. Studies supporting the Westermarck effect (Lieberman & Lobel, 2012; Shepher, 1983; Wolf, 1995) that examine the relationship between developmental familiarity in childhood and sexual aversion in adulthood have yet to control for the effects of parental/adult sexual restrictiveness in mediating that relationship (i.e., a confounding factor). Pusey (1990) observed that among nonhuman primates sexual avoidance of developmentally familiar individuals is not observed until puberty. Humans might need to actively prevent early childhood sexual rehearsal play with parents, siblings, and other developmentally familiar individuals if the sexual avoidance of developmentally familiar individuals would not otherwise take effect until puberty when inbreeding becomes a realistic possibility. Among non-human primates incest prevention is often achieved through exogamy resulting in migration away from the natal group for at least one sex subsequent to puberty so that opportunities for incestuous interactions are minimized.

In conclusion, theories of childhood psychosexual development can be enriched by incorporation of data from primatology, anthropology, and history of childhood sexuality and placing such data in a broader evolutionary context. It raises the question of what is the function of concealing parental sexuality and prohibiting sexual rehearsal play if observing parental sexuality and imitating it in sexual rehearsal play with peers was the developmental norm

throughout much of human behavioral evolution in the environment of evolutionary adaptedness (i.e., hunter-gatherer childhoods). To what extent is the suppression of childhood sexuality maladaptive by virtue of “warping” normal development as Money (1990) believed or adaptively ego building by encouraging frustration tolerance, delay of gratification, impulse-control, and sublimation as Freud (1930) believed if that suppression is not excessive? Zucker (2003) has suggested that the contrasting views of the child either as an “asexual rookie” to be protected from adult disinhibition or as a “sexual veteran” to be protected from adult inhibitions in their extreme forms are most likely incorrect.

This essay is not trying to implicitly suggest that parents should now start letting their children observe them have sex to promote healthy psychosexual development. The aim is not to foster naïve romanticism about human psychosexual development in the environment of evolutionary adaptedness as though human prehistory was some lost sexual paradise. The aim is to highlight the need for further research into how children learn and think about adult sexual relations during early childhood in different cultural contexts. Such early learning may implicitly influence later attitudes towards adult romantic relationships as well as later attitudes towards early childhood sex training. Research into such a sorely neglected but important topic of cross-cultural developmental psychology should clarify the psychological costs and benefits of developmentally delaying the sexual enlightenment of children.

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