3

Are heterosexuals born that way?

Most heterosexuals asked how they became heterosexual would probably shrug and say something like, "I don't know, it just happened. Maybe I was born that way?" But it's no mystery how we become heterosexual; the stages of human development toward heterosexuality are well known and documented, and in this chapter we'll look at the most important ones. Altogether they make a strong case for an environmental rather than a biological basis to sexuality. The research literature also gives good evidence that many people who have a homosexual orientation often had a struggle with a couple of stages that are part of heterosexual development. We will also propose that strongly individual responses, often to random events, are involved in sexual development.

The conclusions of this chapter overturn the theory that there is a prenatal surge of testosterone which permanently and overwhelmingly masculinises the brain. However, that theory will be discussed in its own terms in Chapter Eight.

STAGES OF HETEROSEXUAL DEVELOPMENT

Affection, nurture and bonding

Animals

A female fly lays eggs near food, but she is not around when the young grubs hatch. They have no family life, no mothering, no fathering. The presence of the female fly is not needed; the grubs do not need her affection, but still breed like, well…flies. On the other hand some of the higher animals particularly need early mothering. Affectionate early nurture seems to produce the capacity for affection in offspring—with effects on sexuality.

Researchers who have brought up monkeys completely isolated from other monkeys, giving them only a cloth mother figure, have observed subsequent breakdown in their mating behaviour. When they were frightened, young male monkeys would run to the cloth figure and cling to it as a kind of substitute mother. But when they were mature and were introduced to sexually receptive females, they were confused, clumsy and fumbling in their attempts to mate, and frequently failed to do so when they tried. The researchers concluded that mating is not completely instinctive but partly learned, and depends on the quality of early nurturing. Female monkeys brought up without maternal nurture don't have such obvious trouble mating, but their behaviour as mothers is alarming. They are brutal and even lethal; "helpless, hopeless and heartless" the researchers observed,[1] a finding they extrapolated to abusive human parents. Early isolation and lack of nurturing fail to create affection in offspring. This affects the mating abilities of male monkeys and makes poor mothers of female monkeys. Much later, researchers discovered that lack of mothering caused marked biochemical changes in the brains of monkeys that lasted for years.[2]

There is a lot of research about animals, mainly laboratory rats and the effects of removing the mother (or father) for a time. The effects produced in offspring as adults (anxiety, mild depression, worse visio-spatial skills, poorer sexual and parenting skills, and greater drug addiction) could be a human model.

Does it really apply to humans? It will be a long time before we know for sure. But if it does, then the rat data tell us that the brain is

almost genderless at birth and that gender differentiation only develops with time. Interaction with the mother is really important and actually changes and primes our brains and makes biochemical changes in them, different for boys and girls.

For rats the biochemicals and processes involved are known. Young female rats deprived of just one day of maternal grooming, as adults had higher luteinising hormone and progesterone circulating and increased sexual receptivity,[3] but were inferior mothers. For males with the mother absent for one day, one study showed there were degenerative changes as adults in the parts of the brain called the hippocampus and cerebellar cortex.[4] As adults they were much slower to get involved with sex and ejaculated only 2/3 as often as controls.[5]

Rat brains are anatomically the same for males and females at birth even on a microscopic scale. But there some submicroscopic biochemical differences; the maternal grooming causes sex-dependent differences in methylation of the histone proteins, changes in the estrogen and progesterone receptors in the brain, and changes to hormones and cell turnover in the brain organ called the hypothalamus (connected with sexual activity.)[90] Maternal deprivation also permanently switches the brain to enhanced "learn" mode (brain plasticity). It is as though the stress sends a signal to the brain that it will be unusually important to learn to cope in this stressed environment. The same authors[6] said that sex differences in the brain are "not an inherent emergent property but are instead largely determined by extrinsic factors," e.g. maternal grooming. The most critical biochemical change resulting in the pups from the grooming is in the enhanced level of estradiol, a rather versatile sex hormone which triggers further changes that are different in each sex. Careful anatomists say there is one structure in the rat brain that does indeed express biochemical maleness or femaleness and that it is weighted at birth to develop as female or male given the usual grooming.[6] "These data suggest that early social interaction, similar to hormone [effects] may… organize typical sex differences in the brain."[7]

Breeders and biologists often experience difficulty inducing captive pandas to mate, which may stem from relatively high levels of social interactions with humans in captivity. Some keepers in China and Thailand have shown their pandas videos of "panda porn"— footage with mating pandas in an attempt to teach them to mate. A number

have been successful, even resulting in reproduction. But this is merely one example of the difficulties of captive breeding programmes: far from sexual reproduction being instinctual, innate and automatic, it is heavily dependent on social circumstances. The constant presence of human keepers from birth, frequently handling the animals, disrupts their sex life. We can expect a large learning component in human behaviour as well.

One piece of scientific research on animals adds an interesting perspective to parental and peer influences on later sexual behaviour. Kendrick and colleagues at the Babraham Institute in Cambridge, UK[8] allowed ten ewes to raise goats from birth and ten nanny goats to raise lambs from birth. The fostered kids and lambs grew up in mixed flocks of sheep and goats but the kids fraternised mainly with lambs and adopted their play and grooming habits, and the lambs fraternised mainly with kids. Once mature they ignored their own species and tried to mate 90% of the time with the foster mother species. They kept this up every day during an observation period of three years, and even after years of mixing with their own species, the males did not revert (but females did). If the sexuality of these lower animals was so influenced by learning, human sexuality will be more so.

Humans

What about us? Do we learn to be affectionate from our earliest relationships? It seems we probably do. Environments severely deprived of nurture don't just make us unable to be affectionate with either sex, they actually kill us.

The thirteenth century chronicler Salimbeni of Parma, Italy, told the story of his contemporary, Frederick II of Germany.[9] Frederick had extensive domains in Sicily and Italy, was Holy Roman Emperor, and was considered perhaps the most enlightened man of his age. He was tolerant toward Jews and Muslims and a patron of the arts and sciences. He was also reportedly "bald, red and short-sighted."

Frederick II had a theory that there was an original Adamic language, innate to all mankind, but that we did not grow up speaking it because we were exposed to the languages of our countries through our parents. He thought that if children were brought up in isolation they would automatically start speaking this original language. So he took

some children and committed them to the care of nurses, but only for feeding and bathing. There was to be no cuddling, caressing, or speaking.

The outcome? The children did not survive long enough to develop any language at all. They all died.[10] (Frederick's reaction is not recorded, but he was so short-sighted he should have been redfaced, to put it baldly.)

In 1760, a Spanish bishop recorded: "in an orphanage children become sad, and many of them die because of this sadness". In those days an orphan child in an orphanage received minimal care and little affection.[9]

In their attempt to breed a master Aryan race, the Nazis took children born from genetically "ideal" parents and attempted to raise them under controlled conditions to realise their maximum potential. The directors of the program did not give the children normal mothering; they were left to their own devices in an institution for long periods. The experiment was a disaster. Again, some of the children died, and most of the rest developed severe psychological problems, which often left them unable to form normal relationships.

Various childhood researchers concur. Langmeier, well-known for research into the effects of extreme isolation in early childhood, has found children deprived in this way are slow to develop generally, and find it difficult to form normal human relationships of all kinds.[9] Nielson, et al. looking at offending delinquent adolescents, found numbers of offences correlated with extent of early maternal separation. These children "lack basic human trust and capacity for empathy, and their interpersonal relationships are shallow."[11] In a classic paper, Helen Deutsch linked early loss of maternal nurture with lack of affection and inability to form relationships in adulthood.[12] Beres and Obers (cited in Schwartz, et al.[1]) remark on the effects of severe deficiency in early maternal nurture. They followed thirty-eight subjects aged sixteen to twenty-eight who had been institutionalised early in life, and remarked that none of them "demonstrated the capacity to make a successful marriage or to parent." Beres and Obers thought this was primarily an intimacy problem. Another feature of some individuals with attachment problems is a total lack of fantasy. Some find any kind of imagination difficult.

In the 1950s, the World Health Organisation asked British psychoanalyst John Bowlby to research the mental health of homeless children. His response was a monumental book, *Attachment and Loss,* which led to more affectionate child care in institutions. The work also led to hospitals permitting parents to live in, to maintain bonds with hospitalised children. Bowlby found that extreme emotional deprivation in early childhood produced children with very cold personalities who were unable to form lasting relationships. They also craved affection.[13] Later sociological surveys[14] generally confirmed and expanded Bowlby's work by showing that paternal influence uniquely and independently explained psychosexual development.

Work on 91 institutionalised girls showed that in adult life they had much more frequent mental difficulties and severe parenting difficulties. However, the support of a good spouse and of good living conditions in adult life were powerful protective effects.[15]

A very large survey of 1800 institutionalised orphans as adults published in 1997[16] showed some fascinating trends. They had achieved better education and finally work income, than the population average. They were twice as happy as the rest of the population and had half the rate of mental illness. This showed that generally the orphanages had done a rather good job; 86% of the study orphans had not wanted to be adopted out of their orphanage! However these adult men and women had a higher divorce rate (29% and 63% respectively) than the general population at the same age. Yes, orphans do suffer—in unexpected ways.

Parental gender expectations and training

There seem to be very few gender differences in temperament of newborns. One study[17] found differences in only 4 out of 34 test items, and comments "similarities between boys and girls are much more the norm than differences related to gender, but even though they are quite subtle, differences do exist in the way newborn infants react and behave in the neonatal period."

In contrast, affection shown to baby boys (by anyone, but especially the mother) sometimes produces an erection. This undifferentiated response becomes more and more specific with age, eventually being restricted to those of the opposite sex who are potentially sexually

responsive. This process of differentiation is connected with the development of gender identity.

Mothers often deny treating boys and girls differently, but studies show they do. The parents know the gender of the child and from then on treat him or her as a member of that sex—often unconsciously. Boys' limbs are exercised and stretched far more, and the vocal babblings of girls are imitated far more. Later in infancy, boys are allowed less physical contact and less verbal and eye contact than girls. Boys are more likely to be held facing away from the mother (and father) than toward. The parents are more likely to point something out to a boy than a girl. The mother tends to yield more often to the boy's demand to feed, whereas the girl is more readily denied and given direction. She has to yield to her mother's ideas of how much to take and when. When this sort of different behaviour is repeated hundreds of times, it is bound to have an effect. "By the age of thirteen months, there are clear differences between male and female children," says LaTorre.[18] There is apparently an attempt to "develop independence, adventure and mastery in the boy… The males show much more exploratory and autonomous behaviour."

Most other people also reflect their gender expectations toward the child. In some experiments, researchers took young babies and pinned opposite-sex names on them: girls names on boys and vice versa. Without knowledge of the experiment, people who were strangers to the babies were brought in to see them. Predictably, they cooed over the "girl" babies saying "Isn't she pretty?" and over the "boys" said things like, "Looks like he'll be a good cricket player when he grows up." A father, watching his young son cut a steak with unsteady knife and fork, remarked approvingly, "That'll give you big muscles!" Presumably he would never have said it to his young daughter. If a small boy drops his trousers and pees in the back garden, mother probably laughs, but if her daughter takes off her underwear and throws it over the neighbour's fence, she is probably corrected. Studies again show that the boy is given much more freedom and allowed to do many things the girl is not. His dirtiness and untidiness is tolerated far more than a girl's.

The growth of gender-awareness

Imitation is one of the child's main methods of learning. One of a baby's first milestones is the first smile, at about the age of seven weeks. When

it is not indigestion, it may be an imitation of its mother's smile. At about five to seven months, a child knows the difference between Daddy and Mummy, and begins to turn to them for comfort and protection rather than strangers. At about the same time, a sense of "self" begins—children begin to realise that mirrors portray themselves as separate beings.[18]

Even at five months, researchers[19] could find little genetic component to temperament as shown in physical activity, social gaze aversion, positive or negative expressivity and self comfort. It was mostly caused by other sources, such as erratic reactions to family environment.

With a subtle test—eye-tracking, i.e., recording how long a child watched gender appropriate toys[20,21] —researchers were able to show that for children of 3-8 months girls preferentially watched dolls and boys watched trucks! Some researchers have found young female monkeys similarly prefer to play with dolls and male monkeys prefer trucks![22] Nobody really knows why. One could guess that there might be a very indirect reason such as fascination with moving objects compared with more static baby-like objects.

At age 12 months girls look at people about twice as much as boys do, showing a female preference for people.[23]

But the child only begins to develop a sense of gender at about eighteen months, and then only superficially. Shortly before eighteen months, children can tell men and women and boys and girls apart, even in photos, but mainly on the basis of external appearance, such as length of hair or clothing. At about eighteen months the miracle of speech occurs, and the child starts to learn names of things, and then names of classes of things. It starts to learn the names of body parts, including its own genitalia. It becomes aware that it belongs to a certain class of people—boys or girls. At this time gender-typical play begins[24] with girls starting a couple of months earlier than boys.

By the age of three, 65-75% of children correctly identify themselves as a boy or girl, but most do not at age two and a half.

Kohlberg[25] observed a boy of two and a half years who went round the family circle saying "I'm boy," "Daddy boy," "Mommy boy," "Joey [a brother] boy." After correction he dropped his mother from the list, but still became confused about the gender of those outside the family. Kindergarten age children already know from pictures of toys what a boy would like to play with and what a girl would. They can also identify

the sex of dolls correctly. They will not be persuaded to change these opinions, even with the offer of a reward! But they are still not clear what male or female really is, and categories and their properties are still very fluid and fuzzy at ages three to six. Before the age of six, children tend to believe in a form of magic; they believe a car could change into a truck under the right circumstances, or a boy into a girl. The famous psychologist, Piaget, and his followers demonstrated this. He found most four-year-olds thought a girl could be a boy if she changed into boy clothes, cut her hair like a boy, and played boy games. Another example is given by Kohlberg:

"The following comments were made by Jimmy, just turning four, to his four and a half year old friend Johnny—

Johnny: I'm going to be an airplane builder when I grow up.

Jimmy: When I grow up, I'll be a Mommy.

Johnny: No, you can't be a Mommy. You have to be a Daddy.

Jimmy: No, I'm going to be a Mommy.

Johnny: No, you're not a girl, you can't be a Mommy.

Jimmy: Yes I can."[25]

By the age of four or five, children tend to make distinctions between adult males and females on the basis of strength or size, and boys in particular attach great significance to these qualities. They think that social power derives from physical power, which in turn comes from physical size. "Children agree earliest and most completely that fathers are bigger and stronger than mothers, next, that they are smarter than mothers, and (by six and beyond) that they have social power and are the boss of the family." Sex roles are stereotyped on the basis of size, strength, and power at that stage; almost all of a group of 16 four to five year old American children believed only males were policemen, soldiers, firemen, or robbers— categories involving danger and aggression. By the age of five, 97% of children know their gender is fixed and they cannot choose to be either a mommy or a daddy. By the age of six or seven, most are certain a girl cannot become a boy regardless of what she wears. By that age they all believe boys fight more than girls. Why? "Because girls get hurt more easily than boys." The categories and the belief about the categories have become fixed. But they are not aware of gender difference as genital difference until about five to seven, even when extensively enlightened by parents. They also have considerable

difficulty accepting that the differences are natural and normal. They think that the genitalia of the opposite sex are "funny" or "wrong," or have been cut off, or that perhaps one will grow more like the other.

Even though adult females are seen as less powerful and competent than males, female stereotypes are still powerful enough to make femininity attractive to young girls. The mother or female teacher is more competent and feminine than the young girl. Femininity is associated with "niceness," nurture and helpfulness, and superior attractiveness for children aged six to seven. Girls continue to prefer feminine objects and activities at all ages.

Parent-child relationships

Psychologists differ over details of the process, but all concede the importance of attachment to the parent of the same sex (or a surrogate), the start of a dependent relationship, and imitation and modelling off that parent for the formation of a sense of gender identity. The child identifies with what is masculine or feminine in the parent of the same sex and absorbs it in a kind of daily osmosis. In identifying with his father ("I am like Daddy"), the boy makes the shift away from his mother that is essential for development of a masculine personality. For this shift to occur, the father needs to be an attractive and "salient" figure to the child: present, involved, warm, interested. Nicolosi[26] says a father needs to be dominant and nurturing to be "salient". Paternal warmth—as perceived by the child or by the mother—has consistently been linked to a boy's willingness to identify with his father and masculinity.[25] A "bad" father who creates conflict is worse for the boy's masculinity than no father at all. An emotionally warm and involved father also has an affirming effect on a girl's developing gender identity as she models her mother and peers.

Psychologists agree that the girl identifies primarily with her mother throughout childhood. By age four, she is clearly identifying with her mother more than her father. Although her identification with her father increases over the years four to nine, it has the effect of reinforcing her feminine values and feminine identification rather than weakening them. The same effect of mother identification does not occur nearly as strongly for boys. The little girl tends to stay near her mother and is encouraged to imitate her and do "mother" things. She learns and

copies dress, appearance, and behaviour. The boy has a more difficult task than the girl, who retains her primary attachment to her mother. He has to separate himself from his mother and learn to imitate his father. This is quite a conceptual leap, and it is no surprise that boys are significantly slower to mature socially than girls. However it isn't a strong rejection of the mother but rather continued change and growth. The girl also separates from her mother, but later and in a much more subtle way. Imitations of mother and father are well advanced by age three. Perceptions of parents are also influenced by birth order: it is common for first-borns to think later-borns are given more privileges than they received at the same age. The perception of parental warmth even among identical twins is strongly erratic.[27] Chance events affecting one twin and not the other can mean each perceives the parent differently.

A recent New Zealand study shows that parental divorce doubles the risk in children of later SSA. The same study showed, however, that children of solo mothers (many not divorced) were not affected.[28]

Some researchers divide children into "dandelions" and "orchids". This whimsical distinction means that dandelion children will flourish anywhere, but orchid children are frequently at odds with the family, school and peers, seemingly destined to a life of trouble. However, in the right circumstances orchids "bloom spectacularly" and outshine the dandelions. This little metaphor illustrates the range of different individual reactions there can be to essentially the same environment.

Sibling relationships

Twin study researchers found weak to moderate genetic effects on masculinity and femininity for pre-schoolers but the influence of older siblings and random events was much stronger.[29]

A large UK study of 14,000 children called the Avon study, showed clear effects on masculinity of a father present in the home, but only for boys, in fact girls were influenced more by elder brothers than their fathers![30,31] An older brother created more masculinity and less femininity in both boys and girls. If there was an older sister, boys were more feminine but not less masculine.[30] So masculinity tends to predominate. Although these effects may be large for individuals, for the group as a whole having an older brother only increased masculinity by a few percent.

Peer group relationships

By ages three and four, boys are showing clear preferences for boy-type activities, toys, and boy friends rather than girl friends, preferences that remain stable or increase with age. For girls, the choice of girl-type activities and toys, and girls as preferred friends, is well established by the same ages, but does not increase. When Koch observed pre-school children, he found 80-90% of friends were of the same sex. It seems quite reasonable, comments Kohlberg, to attribute the same-sex preference of both boys and girls aged three to five to the child's need to maintain its gender identity. Similarity leads to affiliation—boys and girls play with their own sex because they are like them.

So, by age three, boys and girls are already playing in different ways, and each group is quite distinct. Boys can become quite contemptuous of girls. When three-and-a-half-year old Joey was asked if he wanted any girls at his birthday party, he said, "No, I hate girls, girls are icky!"—a judgment partly informed by his natural growth, partly by his slightly older brother.[25]

Numerous studies show that boys play in a way which already echoes adult male society: games emphasizing competition and rules and winners and losers. Disputes about rules, or indeed about anything, are common, and a hierarchy is established in which each boy knows his (temporary) place. Boys tend to try to order each other about, reflecting their place in the hierarchy. Boys increasingly define their masculinity in terms of competitive achievement and acceptance in male groups. Girls, on the other hand, value relationships, and, if a game starts to cause disputes, it is usually abandoned. Girls want relationships, whereas boys want to be independent. Girls want to work together in an egalitarian sort of way and try to reach consensus by suggestion rather than orders. Paulk[32] says that if a boy is hurt in a game, the game continues and another boy will jump in to take his place. Girls tend to stop and cluster round an injured girl even making access difficult for adults.

In one paper comparing boys' and girls' styles of handling a given task, boys used competition 50x as much as the girls, and girls used "taking one's turn" 20x as much as the boys.[33]

By the age of eight, roughly 85% of both sexes believe their own sex is best. Boys who cross the line are mercilessly teased. "No-girls-allowed" activities are common to boys, in the attempt, by the boy some

psychologists believe, to consolidate his gender identity following the shift in identification to his father. Boys listen increasingly to what their associates want and believe, rather than to their parents, absorbing the sense of what is acceptably masculine from each other. As LaTorre says, the sexual orientation "soaks in from the outside."[18] A similar process happens for girls. The peer group has a similar role to that of the same-sex parent. Mixing mainly with their own sex strengthens a child's sense of being male or female, and the differences between groups deepen.

Boys' and girls' groups differ. Boys include friends and acquaintances, but girls are much more choosy, restricting the inner circle to friends only, though these friends change much more frequently than the composition of the boys' circles.[34]

First attraction

As the differences increase, a natural curiosity develops about the other group, and this leads in a significant minority of cases to sexual investigation and experimentation; by the age of seven and eight more than one half of boys have been sexually exploratory with other boys and more than half with girls, usually without the knowledge of their parents. Only about half the girls were involved in pre-pubertal "sex play" of any kind. In more than two thirds of cases, the experimentation took place only once or twice, suggesting curiosity rather than attraction.[35,36] There are stirrings of sexual fantasy in a faint pre-echo of puberty. At this age boys, in particular, become more interested in the sexual nature of female adults. Most of this still appears to be curiosity rather than hormonally driven because the mean age for first attraction is close to 10 for both boys and girls, about two years earlier than puberty, but possibly corresponding to the peak age of gender formation of boys' and girls' groups at school.

As puberty approaches, peer and parental pressure often leads girls to abandon tomboy appearance and pursuits, and intensify their gender characteristics.[37] According to one study, girls become kinder and more sensitive but boys become braver and more adventurous.[38]

Puberty

The next milestone in heterosexual development is puberty. In boys, the body is flooded with the male hormone, testosterone; in girls, the

female hormones, estrogen and progesterone. In boys, the voice deepens, the genitals enlarge, and body hair thickens; in girls, breasts develop and menstruation begins. Both become aware of themselves as sexual creatures. Boys experience their first fully erotic arousal at about age thirteen (unless exposed prematurely to porn), and romantic fantasy begins in girls. In heterosexuality, this new sensation is expressed toward the opposite sex. But puberty does not create a sex drive that overrides existing sexual orientations, preferences, attractions, and emotional attachments. The hormonal surge only eroticises the psychological orientation that already exists. In people with a developing heterosexual orientation, sexual desire is channelled toward the opposite sex.

Even in intersexes, the pubertal surge usually expresses itself according to the gender of upbringing. Intersex people who have male gonads have been sometimes raised from birth as girls because of their ambiguous external genitalia, but at puberty they are flooded with male hormones and have erotic dreams (in a way which a young woman is much less likely to), the equivalent of the male "wet dreams," but the imagery in their dreams is typical of young women's dreams, not young men's.[39]

Sexual orientation is unsteady at the start. In early adolescence, deep emotional involvements with the opposite sex are quite rare, and there is usually a "superficial game-like quality to heterosexual interaction… It is almost like the play behaviour of the child."[18] Although they are also associating strongly with their same-sex peers, and confirming their own gender, adolescents often doubt their own masculinity or femininity at this stage. Same-sex sexual experimentation is quite high in adolescent boys; 12% reach orgasm with another person of the same sex, but usually only once or twice.[36] Further information about the unsteadiness of adolescent sexual orientation is given in Chapter Twelve.

Falling in love

"Falling in love" rather than childish `crushes' is another stage in the process of becoming fully heterosexual, one that doesn't appear to be related to puberty, puberty being hormonal, and falling in love social. Researchers know of some cases of girls falling in love before age twelve, but no cases of boys doing so. Even those children who are precociously sexually mature at very early ages—such as eight— do not fall in love,

although many of them have definite heterosexual fantasy, or dreams leading to orgasm, and may masturbate. In one case reported in 1932, a boy who became sexually mature before the age of four was reported to have made "obvious and distressing sexual advances to adult women with whom he was left alone." But he did not fall in love.[39] Falling in love doesn't seem to be biologically driven; rather, it seems to require a certain age and stage of social development.

Branden[41] argues that at base, romantic love is based on values as expressed in emotions. If so, values might well not be well developed when young, which could account for the lateness of love.

In the romantic West, much has been written about this mysterious sensation, but "falling in love" is not really very mysterious. A lot is now known about why people in the West are attracted to each other. In his book *Families and How to Survive Them*,[42] Robin Skynner, a family therapist, boils attraction down to three things: social pressures (class, religion, and money), conscious personal reasons like good looks and shared interests, and unconscious attractions commonly called "chemistry". To demonstrate how chemistry works, Skynner breaks his new classes up into groups while they are still strangers to each other and asks each person to choose "another person from the group who either makes them think of someone in their family or gives them the feeling that they would have filled a "gap in their family." No one is allowed to speak during the exercise. When they have found each other they are encouraged to see if they can find out why they chose each other, and to talk about their family backgrounds. Then each couple chooses another couple, making foursomes, and then each foursome forms itself into a family of some kind, agreeing with each other about roles. In each case, Skynner reports, people choose others whose families have functioned in very similar ways to their own-for example, difficulty in showing affection, incestuous relationships, absentee fathers, or obligatory cheerfulness. In this group exercise, there are always people who are not chosen. The first time Skynner tried the exercise, this group of leftovers found they had all been fostered, adopted, or brought up in children's homes. Although Skynner concedes his trainees are deliberately looking for someone making them think of their families, he says we are unconsciously attracted to certain kinds of people in a way that somehow mirrors the way we learned to relate in our families. In other

words, to a significant extent our responses when we "fall in love" have been unconsciously learned. They are not always the best ones.

We also know that falling in love is incredibly specific—a man doesn't automatically fall in love with the sisters of his girlfriend. It is one person, and even one person of a twin pair sometimes!

Good parental warmth is related to children having fewer sexual partners later, i.e., lack of promiscuity but more specificity of attraction.[43]

In many non-western cultures, marriages are arranged, and people fall in love after they are married. That's the way the culture does it, and if the arrangement is a good one, socially and economically, and there is mutual consideration, love usually follows.

A study[44] of 445 pairs of twins, most of them identical, found no genetic contribution to the way "people make emotional attachments to each other." Rather, the study found that spouses were more like their partners in "love attitudes" than twins were to each other.

If heterosexuality were genetic, one would expect an indiscriminate attraction to the opposite sex across the board. But (excluding incest, which falls in a different category) this is not the case. Young men do not want to marry their sisters, unless they have been separated from them during their upbringing.[35] Studies in Israeli kibbutzim, in which unrelated children are raised together from a very early age while parents work, show they do not find each other erotically interesting in adolescence, though there are no restrictions on romantic involvement between kibbutzniks. In one study, all the young people without exception married outside the group they had grown up with.[39]

An influential study by Bem[45] argues that what is "exotic becomes erotic". In other words, a large part of what drives sexual attraction is the mystery of the other sex which has developed separately for years in childhood. Although this idea has been attacked by various researchers as inadequate, there is a general agreement that the exotic is one factor feeding into the erotic.

Marriage

A large Danish study found that a factor leading to heterosexual marriages for their children was youngish parents with a small age difference, in a stable relationship and an above-average number of siblings. Men with an unknown father were 20% less likely to marry.[46]

It seems marriage is often a vote that the family created by one's parents is worth trying to copy.

Masculinity/Femininity not essentially sex-linked

The development of masculinity and femininity ends up very far removed from biology. An intensive statistical study of adults shows that masculine and feminine traits no longer show a sharp two-category, male/female division. Nor do other "psychological" gender related traits. On the other hand, physical traits such as waist/hip ratio show a much sharper division. This suggests sexual orientation mostly does not come from being male or female.[40]

Cultural conditioning

Sexual attraction and behaviour also depend on the conventions of a particular culture. *In Wild Swans*,[47] an account of three generations of women in a Chinese family, Jung Chang writes of the custom of foot-binding. "My grandmother was a beauty…but her greatest assets were her bound feet, called in Chinese 'three inch golden lilies.'" Not only was the sight of women hobbling on tiny feet considered erotic, men would also get excited playing with bound feet, which were always hidden in embroidered silk shoes.

When Jung Chang's great grandfather was seeking a suitor for his daughter, he planned the first meeting so that this daughter's "tiny feet" would be seen to advantage in their "embroidered satin shoes."

The custom has clear cultural origins. It began about a thousand years earlier when a Chinese emperor bound the feet of his concubines to stop them from running away. But they became erotic symbols—in spite of the fact that bones were broken and deformed in the binding process and that the dead skin stank when the bandages were removed.

The attraction of Victorian men to women's ankles was another "cultural" erotic response. So is the reaction of males in some Moslem cultures to a naked female arm.

It is common for members of one culture to not be particularly erotically attracted to members of another, at least initially. It takes time to appreciate the social conventions of what is erotic in a particular culture and how well a person fulfils them.

Highly individual and random factors

People also develop their sexual orientation and preferences through chance incidents—random circumstances unique to the individual that are in some way associated with sexual arousal. Once the behaviour starts it tends to be repeated, and gradually become habitual. According to Gebhard of the Kinsey Institute, unusual behaviours and preferences can often be traced back to one-off incidents of this nature. He gives two examples. A young teenage boy experienced strong sexual arousal when he was wrestling with an older girl who was stronger than he was and on top of him. He later developed an attraction to large, muscular, dominant females, tried to include wrestling in love play, and became a bit masochistic. In another case, a boy broke his arm, which, because of the circumstances, had to be set without anaesthetic. It was extremely painful. While this was being done the doctor's nurse clasped him close to comfort him. He became sexually aroused and later developed a fetish for brunette hair styles the same as the nurse's. His sexual behaviour also became somewhat sadomasochistic. Gebhard places considerable emphasis on the role of chance circumstances in the development of sexuality. He comments about data "which show to an almost frightening degree the power of chance operating through variables in the immediate situation."[48]

We will see in Chapter Ten that twin studies also show very individualistic reactions are predominant in the factors leading to sexual orientation. These reactions are mostly to people and (often) to unusual circumstances that become charged with significance for the individual in some way, rather than to common everyday routines and experiences in a family.

Habit formation and addiction

According to Gebhard, any kind of heterosexual activity started soon after puberty almost invariably continues from then on. In other words, what we start doing we tend to keep on doing unless the negative consequences outweigh the perceived benefits. We form a habit. If the habit becomes a way of meeting emotional needs, it can become addictive.

Genetic contribution

A study by Hershberger[88] and another by Whitehead[89] concluded from three different approaches that the genetic contribution to heterosexuality was about 15%—surprisingly low.

Summary—the development of heterosexuality

No-one appears to be born heterosexual. Rather, heterosexual attraction is learned, developing over a period of time in response to certain environmental factors, in particular:

Good maternal nurture from the earliest stages and through the first few years: nursing, feeding, loving, touching, talking, closeness, eye contact, and care of physical needs. This develops the ability to experience or show affection both to the opposite sex or to the same sex.

- Identification with and imitation of the parent of the same sex (or other close same-sex models).
- Acceptance by and identification with same-sex peer groups including elder brothers or sisters.
- Identification in a boy with what is culturally "masculine" and in a girl with what is culturally "feminine" (gender conformity).
- The day-in-day-out treatment of boys and girls, as boys or girls respectively.
- The biologically-programmed hormonal rush of puberty. This adds sexual drive to whatever prevailing psychological gender identity is already present. That is, it reinforces existing gender orientation but doesn't change it.
- Falling in love. This appears to be unrelated to genes or puberty; it is something environmentally conditioned that requires a minimum chronological and social age.
- Culturally prescribed sexual behaviours, like arousal over women's bound feet.
- Personal sexual preferences and behaviours that can be traced back to early sexual arousal in unique circumstances.

If anything was going to be programmed into the DNA, you would think heterosexuality would be. The urge to survive and reproduce ought

to be one of the most basic in the species. But heterosexuality including falling in love, seems to be a psycho-social learning process spread over many years. And for many heterosexuals the desire for a satisfying family life has come from their own experience of a good-enough family.

HOMOSEXUALITY

If heterosexuality is learned, what about homosexuality?

Some people have seen domestic animals mounting the same-sex of their own species and concluded homosexuality is intrinsic to the natural world and so intrinsic to humans. But such animal behaviour is more often linked to, e.g. battles for dominance in a herd or over territory, ownership of females or olfactory confusion, than to normal behaviour.

In this section we survey some of the many influences known, with the strong caveat that they do not apply to more than a small minority of people in the whole population. That is, each individual factor does not cause homosexuality in the vast majority of people, but for those who are homosexual, it has been found to be significant. Some homosexuals will identify very strongly with one factor, but not others. Where a number of these influences have occurred homosexuality is more likely to develop. But everyone has their own story.

Relationships with parents and peer groups

The psychological literature on homosexuality clearly reveals breakdowns in learning processes critical to the development of heterosexuality.

Adoption may be a factor. Although really definitive studies are lacking, the percentage of SSA people adopted seems to be about 6%, double the US national average.[32,49,50,51,52,53] This suggests possible disruption of usual parent-child bonding processes leading to heterosexuality.

Family relationships matter. Frisch and Hviid[46] in their survey of factors which led to Danish "homosexual marriages" found that lack of a father or a mother, made that outcome about 20% more likely. However having older siblings decreased the probability about 13% for each elder sibling. Younger siblings each decreased the probability about 9-13% for men and women[53]. Similar patterns were found for U.S. adolescents.[54]

Rather than bonding and identifying with same-sex parents, imitating and role-modelling, numerous studies of homosexuals show early breaches, negative relationships, and resistance to identification and

modelling. In one comprehensive study of homosexuality,[55] 84% of homosexual men said their fathers were indifferent and uninvolved compared with 10% of heterosexual men, and that only 10% of homosexual men identified with their fathers in childhood, compared with two thirds of heterosexual men. Dickson and Byrd[56] found a similar numerical difference and it is quite a big effect. This factor is confirmed in recent research.[54,57,58] However it only accounted for 3% of total effects for the whole population, i.e., only 3% of a total population became homosexual as a result, but it was an issue for a large percentage of homosexual men. For those already vulnerable in some other way the effect would be much higher than 3%.

Rather than boys playing with boys and girls with girls, studies show pre-homosexual children have few friends of the same sex and are rejected by same-sex peer groups. They show boys who played with girls, didn't like male sports, and wanted to be around women more than men.[26] Poor relationships with peer groups are even more common in the backgrounds of male homosexuals than poor relationships with fathers.[26]

Numerous empirical studies have shown that homosexual women have poorer relationships with their mothers than heterosexual women.[59,54,58] Saghir and Robins[55] found only 23% of homosexual women reported positive relationships with their mothers and identification with them, compared with 85% of heterosexual women.

Bell et al.[59] comment that, in both boys and girls, a negative relationship with the same-sex parent reduces the desire to identify with that parent. Children with reduced identification are more likely to develop "gender non-conformity" ("sissiness" in boys and "tomboyism" in girls; the sense of feeling "different" from their peers). This is what we find in male and female homosexuality. Although this effect, "childhood gender non-conformity," has been considered an excellent predictor of later homosexuality[45,60] this conclusion was based on clinical samples, and one large recent random general population survey finds the effect is only weak—10-12% of gender non-conformists becoming homosexual adults.[61]

However, it is worth noting that gender non-conforming clients in the clinical samples had parents with very high mental disorder levels[62] and these rather feminine, insecure boys (a result of poor parental

bonding and modelling) can attract paedophile interest (early male sexual abuse is often a significant factor in the lives of homosexuals). So, although twin studies claim moderate to strong genetic origins for "childhood gender non-conformity,"[63] social reasons can also be significant.

Sex researcher, Bell, also remarks that severe childhood gender non-conformity can be rebellion against gender norms.

Nicolosi remarks that "the masculine qualities conveyed in the healthy father-son relationship are confidence and independence, assertiveness and a sense of personal power."[26] A boy who has not bonded well with his father and has only a weak identification with him is not developing a sense of masculine identity and will not fit well into childhood male peer groups. Male homosexuals characteristically say they were rejected by childhood male peer groups because they were "weak, unmasculine, unacceptable." That's when the name-calling starts: "sissy," "gay". Bullying becomes common. Saghir and Robins found 67% of homosexuals were called sissy or effeminate by others (compared with 3% of heterosexual men), and that 79% of these men in childhood and early adolescence had no male friends, played mostly with girls, and rarely or never played sports.[55] One study reported about the adolescent experiences of homosexual men "…sexually explicit feedback (from heterosexual peers) with critical implications occurred commonly among the homosexual men, which they interpreted as implying an insufficient masculinity."[64]

An interesting study in Taiwan[65] found that lack of maternal care and high mother/father over-protection (not letting boys develop resilience) explained 62% of the homosexuality in male military recruits. This is an extraordinarily high influence, and probably reflects the strong role of the family in Taiwanese society.

It does show how hugely important parental factors can be in some cultures, and presumably in some individuals in the West.

A similar pattern is seen in lesbianism. Young girls resistant to mother identification and modelling do not fit well into female peer groups. In Saghir and Robins' group, 70% of homosexual women were "tomboys" as children, compared with 16% of heterosexual women. They had no girl playmates (unlike pre-heterosexual girls), played mostly with boys, and were active in team sports. Most rejected playing with dolls

and showed no interest in domestic role-modelling. Sixty three percent wished they were boys or men, compared with only 7% of heterosexual women. The attitude persists into adulthood. One of the two findings that differentiated lesbian women from heterosexual women was the feeling in lesbian women that they were less feminine and more masculine.

They express disinterest in feminine accessories and fashion, prefer "sporty" and tailored clothes, and shun make-up and hairdos. They see their social and domestic roles as being incompatible with those of other women. They behave more competitively and are oriented toward career and accomplishments with little interest in raising children or in domestic pursuits."[55]

Sexual activity and sexual abuse

Several major studies have highlighted more childhood and adolescent homosexual activity in pre-homosexual children and adolescents. Van Wyk and Geist,[35] looking at a sample of 7669 white male and female Americans, say both lesbians and homosexuals were more likely to have had intense pre-pubertal sexual contact with boys or men. They draw a link between male sexual abuse and later lesbianism, but also say that most lesbians learned to masturbate by being masturbated by a female. It appears that these women as growing girls had retreated from distressing male sexual contact at the same time as they had also experienced female sexual contact. By contrast, young pre-homosexual males appear not so much to be in flight from female sexual contact, as to find satisfaction in male sexual contact. Male homosexuals were more likely than heterosexual men to have been masturbated by other men or boys, they comment, and "once arousal to the particular type of stimulus occurs, it tends quite rapidly to form a pattern."

Finkelhor found young men sexually abused by older males were about four times more likely to engage in homosexual activity as adults.[66] Nichols reported male sexual abuse of lesbians was twice as high as in heterosexual women.[67] Gundlach and Reiss[68] reported a similar figure. Peters and Cantrell (cited elsewhere[68]) found more than two thirds of lesbians reported being forced into sexual experiences with males after the age of twelve, compared with only 28% of heterosexuals.

The best review of the effects of childhood sexual abuse[69] concludes that 12-37% of SSA adults experienced this, but only 4-16% of OSA adults.

Wilson and Widom[70] followed sexually abused children into adulthood for 30 years and concluded that over their lifetimes men who had been sexually abused were 6.75 times as likely to be involved later with same-sex sexual partners. This is a very large effect. The effect on women was not significant. However for men the sexual activity was mostly not in the last year. The same six-fold effect of sexual abuse was observed elsewhere.[71]

So sexual abuse appears to be a factor in the development of homosexuality. Ex-gay groups (Chapter Twelve) suggest that when a boy's relationships with father and peer group are unhappy, childhood and adolescent sexual intimacy with another man leads to a later association of sex with male interest, affection, and acceptance. One former homosexual, Michael Saia,[72] says homosexual men are not looking for sex when they have their first sexual encounter. He says they are looking for acceptance, understanding, companionship, strength, security, and a sense of completeness. Sex becomes the way to get it.

"I was starved of affection," said Bob.

> I didn't like the sex at first, I just wanted someone to really love me. I told myself, OK, if this is what I have to do to get the touch, I'll do it. Then it got to where I liked it. So… (personal communication)

Lesbianism, on the other hand, is primarily emotional rather than sexual. Lesbianism is a relationship in which two women's strongest emotions, affections and sexual feelings are directed toward each other.

One researcher in developmental psychology, Elizabeth Moberly, whose conclusions have been widely accepted by the international ex-gay movement sees sexual abuse as a secondary contributor to homosexuality.[73] She posits the main cause as early "defensive detachment" from the parent of the same sex that interferes critically with the identification process that produces a sense of gender in children. This breach between a child and the same-sex parent (which, she says, could happen for any number of reasons, and is as often a result of childhood misperception of parents' actions as of parental neglect or abuse), structures

itself into the relationship and leaves the child with a deep need for the same-sex love, affection, and gender identity that it has rejected or which has not been provided, Moberly says. Difficulties in attachment and identification lead to a sense of not belonging in same-sex peer groups and from then on homosexual development follows a fairly predictable course: a drive for same-sex affection, affirmation, acceptance, and sense of gender identity; masturbation and/or fantasy around a certain admired same-sex figure; a sexual encounter; the beginning of habitual responses; self-identification as homosexual; "coming out;" finding partners; the homosexual lifestyle, and for some, gay activism. Most people with homo-emotional needs and homosexual responses, however, do not "come out" to friends and family or live a visibly homosexual or activist life-style.

In one of the largest studies of a homosexual population, Bell, et al. said homosexuality could not be traced back to "a single psychological or social root."[59] However, they gave the highest values to a constellation of factors: negative relationship with the parent of the same sex, "childhood gender non conformity," and adolescent homosexual arousal and activity. And these factors together were statistically significant. (This study is further reviewed in Chapter Eleven.)

Puberty occurs at the same age as for heterosexuals.[74] This tends to discount many possible innate biological causes.

Homosexual identity as an adolescent is quite erratic. A survey of many adolescents[75] found that 3.4% reported gay/lesbian or bisexual (GLB) identity (another 3.4% were unsure), 9.0% reported same-gender attraction, and 4.0% same-gender sexual behaviour. However there was no consistent pattern of overlap between the three measures, and no single measure effectively defined this GLB population. The question about attraction identified 71%; identity identified 52%; and behaviour only 31 %. This is in great contrast to adults for whom the three measures coincide almost entirely. It probably means that there is considerable adolescent experimentation without necessarily a great deal of attraction. Expression of homosexual orientation is not stable until the end of adolescence.

So, if heterosexuality results from a learning process that involves relationships with parents, siblings and peer groups, puberty, sexual

encounters, highly individual experiences, and repeated behaviours, homosexuality follows a similar path.

The adult SSA male is almost always quite securely biologically male, as the SSA female is biologically female. The insecurity is inward: psychologically a male feels insufficiently masculine.[64,76,77] Many feel they are perpetual outsiders regardless of success.[78] They value masculinity hence they don't like effeminacy in other males— gay or straight.[79] A large worldwide multicultural study[80] found that according to standard masculinity tests SSA adults were less masculine on average than heterosexuals, and lesbians were more masculine on average than heterosexuals—although there was a huge overlap between the SSA subjects and heterosexuals. Another statistically significant difference was that SSA males were much more likely to treat others as objects (i.e., sex objects) than their heterosexual counterparts.[81]

Some bisexuals seek heterosexual partners except when tired or depressed when they seek homosexual ones. This shows the malleability of bisexual orientation.

We repeat that most of the factors we outline in this chapter are weak influences on average in the total population, but for selected individuals (i.e., those who later become SSA) they may be critical. This means there is no single, unique path to SSA. Rosario et al.[82] identified at least five pathways to SSA after study, and wrote "it may not follow a single pattern but may follow a variety of pathways". One study on SSA concluded there was "support for the multidimensional model of identity development and exploration."[83] Nor is any individual factor overwhelming by itself. In fact a fair summary is that for any given factor the majority of a population will not develop SSA; several factors must act together. This gives rise to an aphorism: *There's many a way to SSA*.

Summary of homosexual development

For a variety of reasons the heterosexual model is not followed. Reasons include sexual abuse (by men), and a variety of ruptures with same-sex role models. Sometimes this is the father or mother, sometimes peers, probably including siblings. Quite a common consequence is being or feeling less masculine (males) or feminine (females) than others in the same-sex peer group. This can lead to rejection by peers (even other peers who are SSA) leading to feelings of being different, gender

non-conformity and a growing drive to make up the sensed deficit through a strong connection with an individual of the same sex, which becomes eroticised—essentially SSA. However individual reactions and stories predominate. Males feeling inadequately masculine, can envy heterosexual males and this can be confused with erotic feelings. SSA women frequently reject femininity but envy it less.

Bisexuality

In contrast, we observe that bisexual people find different needs met with each sex. For females, intimacy with females is very important and perhaps sexual contact with safe, non-threatening males (perhaps gay). For males the physical contact with males may be important and the relational aspects with females, perhaps including family.

Increasingly research is concentrating on "mostly heterosexual" people, who although overwhelmingly heterosexual, experience a slight attraction to the same sex as well. They tend to suffer mental health deficits, such as depression, at rates comparable to bisexuals and those exclusively homosexual.[88]

No sexual orientation

A few percent of the population, though physically normal, appear never to have learned a sexual orientation. Leiblum says

> Some patients often show a chronic lifelong lack of sexual interest…Often we are unable to identify evidence of psychic inhibition of libido in such individuals but rather seem to be dealing with a permanent state of "asexuality." Sexual stirrings or urges seem not to occur instead of being blocked or repressed.[84]

An interest group of the asexual (an interest group founded on a lack of interest seems rather paradoxical!)[85] were not distressed by their asexuality, nor did they have a higher than normal degree of mental disorder. Masturbation was not different from population occurrence, so sexuality was present. They were rather socially withdrawn but functioned well.

In another study on asexuality (18 males and 75 females),[85] although their sense of gender identity was well entrenched, some were

aesthetically attracted rather than sexually attracted and 11/93 were attracted (but not sexually) to both sexes. Many felt they had "always been this way" and there was no obvious choice involved. Cuddling was about the limit of sexual activity.

One researcher[86] described the unusual situation of a married couple with complete lack of sexual interest, who had known each other since childhood and discovered their common indifference. They appear to have married for companionship. When interviewed, they had lived together twenty years and slept in each other's arms, but there was no genital contact at all. There was no physical abnormality. They were quite content. This may not be a complete lack of sexual orientation, but it had no erotic expression.

So it seems sexual orientation itself is not an inevitable consequence of genital development.

Conclusion

Heterosexuals tend to take their heterosexuality for granted as if it just happens. But it seems to develop slowly and steadily over years— about two decades—through fairly clearly known and accepted processes. Psychologists are in broad agreement about the general stages of heterosexual development and unanimous about one thing: heterosexual orientation is not genetically determined. They will say it is overwhelmingly learned, i.e., environmentally influenced. Most will also say genetics has a part to play, but only a very minor one.

Homosexuals in contrast frequently have difficulty with several of the developmental stages leading to heterosexuality, particularly attachment to and gender identification with the same-sex parent and good-enough connection with same-sex peers, leading to needs for same-sex affection and affirmation that become eroticised. Once the pattern of sexual gratification starts, a habit begins, becomes ingrained, and then often addictive. Rates of male sexual abuse are higher in homosexuals and lesbians than in heterosexuals, and this is a factor. If heterosexuality is learned, then homosexuality is, too. But there are many chance factors involved.

So, what role might genetics play in homosexuality? Probably about the same role it plays in the pregnancy of a fifteen year old girl. You could argue that if she is born with the combination of genes that make her

attractive in her culture (and therefore subject to more sexual pressure from interested males than she would be if she were ugly), then she is genetically predisposed to become pregnant at age fifteen. In homosexuality, it would seem that any biological trait that adds to a person's sense of "gender non-conformity" (one of the strongest predictors of later homosexuality) could be said to genetically predispose him or her to a homosexual orientation.

But did your genes make you heterosexual or homosexual? No, it seems you learned it over many years.

References

1. Schwartz, MF, Money J, Robinson K. 1981. Biosocial perspectives on the development of the proceptive, acceptive and conceptive phases of eroticism. *Journal of Sex and Marital Therapy* 7, 243–255
2. Law AJ, Pei Q, Walker M, Gordon-Andrews H, Weickert CS, Feldon J, Pryce CR, Harrison PJ. 2009. Early parental deprivation in the marmoset monkey produces long-term changes in hippocampal expression of genes involved in synaptic plasticity and implicated in mood disorder. *Neuropsychopharmacology* 34, 1381–1394
3. Cameron N, Del Corpo A, Diorio J, McAllister K, Sharma S, Meaney MJ. 2008. Maternal programming of sexual behavior and hypothalamic-pituitary-gonadal function in the female rat. *PLoS One* 3, e2210
4. Llorente R, Gallardo ML, Berzal AL, Prada C, Garcia-Segura LM, Viveros MP. 2009. Early maternal deprivation in rats induces gender-dependent effects on developing hippocampal and cerebellar cells. *International Journal of Developmental Neuroscience* 27, 233–241
5. Rhees, RW, Lephart ED, Eliason D. 2001. Effects of maternal separation during early postnatal development on male sexual behavior and female reproductive function. *Behavioral Brain Research* 123, 1–10
6. McCarthy MM, Wright CL, Schwarz JM. 2009. New tricks by an old dogma: Mechanisms of the Organizational / Activational hypothesis of steroid-mediated sexual differentiation of brain and behavior. *Hormones and Behavior* 55, 655–665
7. McCarthy MM, Auger AP, Bale TL, De Vries GJ, Dunn GA, Forger NG, Murray EK, Nugent BM, Schwarz JM, Wilson ME. 2009. The epigenetics of sex differences in the brain. *Journal of Neuroscience* 29, 12815–12823
8. Kendrick KM, Hinton MR, Atkins K, Haupt MA, Skinner JD. 1998. Mothers determine sexual preferences. *Nature* 395, 229–230
9. Langmeier J, Matejcek Z. 1978. *Psychological Deprivation in Childhood* (New York: John Wiley and Sons).
10. Van Cleve TC. 1972. *Emperor Frederick II of Hohenstaufen: Immutator Mundi* (Oxford: Clarendon Press)
11. Nielson G, Young D, Latham S. 1982. Multiply acting out adolescents; developmental correlates and response to secure treatment. *International Journal of Offender Therapy and Comparative Criminology* 26, 195–206

12. Deutsch H. 1937. Absence of grief. *Psychoanalytical Quarterly* 6, 12–22
13. Rutter M. 1981. *Maternal Deprivation Reassessed* (Harmondsworth, Middlesex, U.K.: Penguin Books)
14. Landolt MA, Bartholomew K, Saffrey C, Oram D, Perlman D. 2004. Gender nonconformity, childhood rejection, and adult attachment: a study of gay men. *Archives of Sexual Behavior* 33, 117–128
15. Quinton D, Rutter M, Liddle C. 1984. Institutional rearing, parenting difficulties and marital support. *Psychological Medicine* 14, 107–124
16. McKenzie RB. 1997. Orphanage alumni: How they have done, and how they evaluate their experience. *Child and Youth Care* 26, 87–111
17. Boatella-Costa E, Costas-Moragas C, Botet-Mussons F, Fornieles-Deu A, De Caceres-Zurita ML. 2007. Behavioral gender differences in the neonatal period according to the Brazelton scale. *Early Human Development* 83, 91–97
18. LaTorre RA. 1979. *Sexual Identity* (Chicago, Illinois: Nelson-Hall Inc)
19. Soussignan R, Boivin M, Girard A, Perusse D, Liu X, Tremblay RE. 2009. Genetic and environmental etiology of emotional and social behaviors in 5-month-old infant twins: Influence of the social context. *Infant Behavior and Development* 32, 1–9
20. Hines M, Alexander GM. 2008. Monkeys, girls, boys and toys: A confirmation letter regarding "Sex differences in toy preferences: Striking parallels between monkeys and humans". *Hormones and Behavior* 54, 478–479
21. Alexander GM, Wilcox T, Woods R. 2009. Sex Differences in Infants' Visual Interest in Toys. *Archives of Sexual Behavior* 38, 427–433
22. Hassett JM, Siebert ER, Wallen K. 2008. Sex differences in rhesus monkey toy preferences parallel those of children. *Hormones and Behavior* 54, 359–364
23. Lutchmaya S, Baron-Cohen S. 2002. Human sex differences in social and nonsocial looking preferences, at 12 months of age. *Infant Behavior & Development* 25, 319–325
24. Zosuls KM, Ruble DN, Tamis-Lemonda CS, Shrout PE, Bornstein MH, Greulich FK. 2009. The acquisition of gender labels in infancy: implications for gender-typed play. *Developmental Psychology* 45, 688–701
25. Kohlberg L. 1966. A cognitive-developmental analysis. In *The Development of Sex Differences*, E.E. Maccoby, ed. (Stanford California: Stanford University Press), 82–173
26. Nicolosi J. 1991. *Reparative Therapy of Male Homosexuality* (Northvale, New Jersey: Jason Aronson, Inc.)
27. Harlaar N, Santtila P, Bjorklund J, Alanko K, Jern P, Varjonen, M, von der Pahlen B, Sandnabba K. 2008. Retrospective reports of parental physical affection and parenting style: a study of Finnish twins. *Journal of Family Psychology* 22, 605–613
28. Wells JE, McGee MA, Beautrais AL. 2011. Multiple aspects of sexual orientation: Prevalence and sociodemographic correlates in a New Zealand national survey. *Archives of Sexual Behavior* 40, 155–168
29. Iervolino AC, Hines M, Golombok SE, Rust J, Plomin R. 2005. Genetic and environmental influences on sextyped behavior during the pre-school years. *Child Development* 76, 826–840
30. Rust J, Golombok S, Hines M, Johnston K, Golding J, Avon study team. 2000. The role of brothers and sisters in the gender development of preschool children. *Journal of Experimental Child Psychology* 77, 292–303
31. Hines M, Johnston KJ, Golombok S, Rust J, Stevens M, Golding J, and Avon study team 2002. Prenatal stress and gender role behavior in girls and boys: a longitudinal population study. *Hormones and Behavior* 42, 126–134
32. Paulk A 2003. *Restoring Sexual Identity* (Eugene, Oregon: Harvest House).

33. Charlesworth WR, Dzur C. 1987. Gender comparisons of preschoolers' behavior and resource utilization in group problem solving. *Child Development* 58, 191–200
34. Baines E, Blatchford P. 2009. Sex differences in the structure and stability of children's playground social networks and their overlap with friendship relations. *British Journal of Developmental Psychology* 27, 743–760
35. Van Wyk PH, Geist CS. 1984. Psychosocial development of heterosexual, bisexual and homosexual behavior. *Archives of Sexual Behavior* 13, 505–544
36. Klassen AD, Williams CJ, Levitt EE. 1989. *Sex and Morality in the U. S* (Connecticut: Wesleyan University Press)
37. McHale SM, Shanahan L, Updegraff KA, Crouter AC, Booth A. 2004. Developmental and individual differences in girls' sex-typed activities in middle childhood and adolescence. *Child Development* 75, 1575–1593
38. McHale SM, Updegraff KA, Helms-Erikson H, Crouter AC. 2001. Sibling influences on gender development in middle childhood an early adolescence: a longitudinal study. *Developmental Psychology* 37, 115–125
39. Money J, Ehrhardt AA. 1972. *Man & Woman, Boy & Girl* (Baltimore: The Johns Hopkins University Press)
40. Carothers BJ, Reis HT. 2013. Men and Women Are From Earth: Examining the Latent Structure of Gender. *Journal of Personality and Social Psychology* 104, 385–407
41. Branden N. 1980. *The Psychology of Romantic Love* (Los Angeles: J.P.Tarcher)
42. Skynner R, Cleese JO. 1983. *Families, and How To Survive Them* (London: Methuen)
43. Kan ML, Cheng YH, Landale NS, McHale SM. 2010. Longitudinal predictors of change in number of sexual partners across adolescence and early adulthood. *Journal of Adolescent Health* 46, 25–31
44. Mestel R. 1994. Love is blind ... to genes. *New Scientist* 143(10 Sep), 5
45. Bem DJ. 1996. Exotic becomes erotic: a developmental theory of sexual orientation. *Psychological Review* 103, 320–335
46. Frisch M, Hviid A. 2006. Childhood family correlates of heterosexual and homosexual marriages: a national cohort study of two million Danes. *Archives of Sexual Behavior* 35, 533–547
47. Chang J. 1993. *Wild Swans* (London: Flamingo)
48. Gebhard PH. 1965. Sex and Behavior. In *Situational Factors Affecting Human Sexual Behavior,* F.A. Beach, ed. (New York: John Wiley and Sons), 483–495
49. Kenyon FE. 1968. Studies in female homosexuality. IV Social and psychiatric aspects. *British Journal of Psychiatry* 114, 1337–1350
50. Bailey JM, Pillard RC. 1991. A genetic study of male sexual orientation. *Archives of General Psychiatry* 48, 1089–1096
51. Bailey JM, Bell AP. 1993. Familiality of Female and Male Homosexuality. *Behavior Genetics* 23, 313–322
52. Bogaert AF. 2000. Birth order and sexual orientation in a national probability sample. *Journal of Sex Research* 37, 361–368.
53. Francis AM. 2008. Family and sexual orientation: the family-demographic correlates of homosexuality in men and women. *Journal of Sex Research* 45, 371–377.
54. Bos HM, Sandfort TG, de Bruyn EH, Hakvoort EM. 2008. Same-sex attraction, social relationships, psychosocial functioning, and school performance in early adolescence. *Developmental Psychology* 44, 59–68.
55. Saghir MT, Robins E.1973. *Male and Female Homosexuality, A Comprehensive Investigation* (Baltimore, Maryland: Williams and Wilkins).
56. Dickson GL, Byrd AD. 2007. An empirical study of the Mother-Son dyad in relation to the development of male homosexuality. *Narth Bulletin* 15, 8–12,32–33.

57. Alanko K, Santtila P, Witting K, Varjonen M, Jern P, Johansson A, von der Pahlen B, Sandnabba, KN. 2009. Psychiatric symptoms and same-sex sexual attraction and behavior in light of childhood gender atypical behavior and parental relationships. *Journal of Sex Research* 46, 494–504.
58. Needham BL, Austin EL. 2010. Sexual orientation, parental support, and health during the transition to young adulthood. *Journal of Youth and Adolescence* 39, 1189–1198.
59. Bell AP, Weinberg MS, Hammersmith SK. 1981. *Sexual Preference: Its Development In Men and Women* (Bloomington, Indiana: Indiana University Press.)
60. Drummond KD, Bradley SJ, Peterson-Badali M, Zucker KJ. 2008. A follow-up study of girls with gender identity disorder. *Developmental Psychology* 44, 34–45.
61. Steensma TD, van der Ende J, Verhulst FC, Cohen-Kettenis PT. 2012. Gender Variance in Childhood and Sexual Orientation in Adulthood: A Prospective Study. *Journal of Sexual Medicine,* 10(11): 2723-2733.
62. Rekers GA. 1991. Psychological foundations for rearing masculine boys and feminine girls. In *A Response to Evangelical Feminism. Recovering Biblical Manhood and Womanhood*, W. Grudem, and J. Piper, eds. (Wheaton, Illinois: Crossway Books), 292-311.
63. Dunne MP, Bailey JM, Kirk KM, Martin NG. 2000. The subtlety of sexatypicality. *Archives of Sexual Behavior* 29, 549–565.
64. Lee PA, Houk CP. 2005. Normal male childhood and adolescent sexual interactions: implications for sexual orientation of the individual with intersex. *Journal of Pediatrics and Endocrinological Metabolism* 18, 235–240.
65. Lung FW, and Shu BC 2007. Father-son attachment and sexual partner orientation in Taiwan. *Comprehensive Psychiatry* 48, 20–26.
66. Finkelhor D. 1981. The sexual abuse of boys. *Victimology* 6, 76–84.
67. Nichols M. 1988. Bisexuality in women. Myths, realities and implications for therapy. *Women and Therapy* 7, 235–252.
68. Gundlach RH, Reiss BF. 1967. Birth order and sex of siblings in a sample of lesbians and non lesbians. *Psychological Reports* 20, 61–63.
69. Purcell DW, Patterson JD, Spikes PS. 2008. Childhood sexual abuse experienced by gay and bisexual men: understanding the disparities and interventions to help eliminate them. In *Unequal Opportunity. Health Disparities Affecting Gay and Bisexual Men in the United States*, RJ Wolitski, R Stall, and RO Valdiserri, eds. (New York: Oxford University Press), 72–96.
70. Wilson HW, Widom CS. 2010. Does physical abuse, sexual abuse, or neglect in childhood increase the likelihood of same-sex sexual relationships and cohabitation? A prospective 30-year follow-up. *Archives of Sex Behavior* 39, 63–74.
71. Johnson RL, Shrier DK. 1985. Sexual victimization of boys: experience at an adolescent medicine clinic. *Journal of Adolescent Health Care* 6, 372–376.
72. Saia M. 1988. *Counseling the homosexual* (Minneapolis, Minnesota: Bethany House).
73. Moberly ER. 1983. *Homosexuality, a New Christian Ethic* (Cambridge: James Clarke & Co.).
74. Savin-Williams RC, Ream GL. 2006. Pubertal onset and sexual orientation in an adolescent national probability sample. *Archives of Sexual Behavior* 35, 279–286.
75. Igartua K, Thombs BD, Burgos G, Montoro R. 2009. Concordance and discrepancy in sexual identity, attraction, and behavior among adolescents. *Journal of Adolescent Health* 45, 602–608.
76. Szymanski DM, Carr ER. 2008. The roles of gender role conflict and internalized heterosexism in gay and bisexual men's psychological distress: Testing two mediation models. *Psychology of Men and Masculinity* 9, 40–54.

77. Sanchez FJ, Westefeld JS, Liu WM, Vilain E. 2010. Masculine gender role conflict and negative feelings about being gay. *Professional Psychology, Research and Practice* 41, 104–111.
78. Ridge D, Plummer D, Peasley D. 2006. Remaking the masculine self and coping in the liminal world of the gay "scene." *Culture Health and Sexuality* 8, 501–514.
79. Bianchi FT, Shedlin MG, Brooks KD, Montes Penha M, Reisen CA, Zea MC, Poppen PJ. 2009. Partner selection among Latino immigrant men who have sex with men. *Archives of Sexual Behavior,* 39(6),1321-1330.
80. Schmitt DP. 2007. Sexual strategies across sexual orientations: how personality traits and culture relate to sociosexuality among gays, lesbians, bisexuals, and heterosexuals. *Journal of Psychology and Human Sexuality* 18, 183–214.
81. Kozak MFH, Roberts T. 2009. Objects of desire: Objectification as a function of male sexual orientation. *Psychology of Men and Masculinity* 10, 225–230.
82. Rosario M, Schrimshaw EW, Hunter J. 2009. Different patterns of sexual identity development over time: Implications for the psychological adjustment of lesbian, gay, and bisexual youths. *Journal of Sex Research* 11, 1–13.
83. Glover JA, Galliher RV, Lamere TG 2009. Identity development and exploration among sexual minority adolescents: examination of a multidimensional model. *Journal of Homosexuality* 56, 77–101.
84. Leiblum SR, Rosen RC. 1988. Introduction. In *Sexual Desire Disorders*, SR Leiblum and RC Rosen, eds. (New York: The Guilford Press), 1–17.
85. Scherrer KS. 2008. Coming to an asexual identity: Negotiating identity, negotiating desire. *Sexualities* 11, 621–641.
86. Zilbergeld B, Hammond DC. 1988. The use of hypnosis in treating desire disorders. In *Sexual Desire Disorders*, SR Leiblum, and RC Rosen, eds. (New York: The Guilford Press), 192–225.
87. Loosier, PS, Dittus, PJ. 2010 Group Differences in Risk Across Three Domains Using an Expanded Measure of Sexual Orientation. *Journal of Primary Prevention* 31(5-6): 261-272.
88. Hershberger, S. 1997. A twin registry study of male and female sexual orientation. *Journal of Sex Research* 34:212-222.
89. Whitehead, NE. 2014. Prenatal hormones are only a minor contributor to male brain structure in humans. *Journal of Human Sexuality* 6:104-126.
90. Viveros MP, Diaz F, Mateos B, Rodriguez N, Chowen JA. 2010. Maternal deprivation induces a rapid decline in circulating leptin levels and sexually dimorphic modifications in hypothalamic trophic factors and cell turnover. *Hormones and Behavior* 57 (4-5), 405-414