A PAIR OF MALE MONOZYGOTIC TWINS DISCORDANT FOR HOMOSEXUALITY

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Homosexuality has puzzled man since time immemorial, and as a result of its being insufficiently understood numerous fanciful etiological theories have emerged, among which cultural, sociological or psychological factors have been variously felt to be of prime importance. On the other hand, many have felt that it is due to a multiplicity of causes (21). Twin studies are often the most satisfactory method of determining the role of genetic factors in the causation of pathological disorders. By means of this approach, convincing evidence in support of an hereditary factor being the most important in the etiology of homosexuality has been put forward. The twin studies of Kallmann (5, 6) are the most comprehensive to date. Kallmann studied 85 homosexuals who had twin brothers. Of 45 dizygotic male twin pairs psychosexual information was available in 26. The homosexuality rate among these dizygotic co-twins did not differ significantly from that among their brothers. In the case of the monozygotic twins, there were three co-twins who could not be classified psychosexually. He found the remaining 37 one-egg twins to be fully concordant as to the overt practice of homosexuality. Kallmann stated that all of the concordant twin partners denied any history of mutuality in overt sex relations. He also pointed out that many of them claimed to have developed their often very similar sexual patterns independently and far apart from each other. These studies strongly supported the hypothesis that homosexuality was genetically determined and was independent of environmental influences.

Recently a male passive homosexual (Figures 1–3) was admitted to the Department of Psychological Medicine at the Johannesburg General Hospital. He mentioned that he had a twin brother (Figures 4–6) of similar appearance whom he thought was heterosexual. As this case apparently differed from those of Kallmann, it was felt that the twin pair should be fully investigated in order to determine firstly the zygosity of the twins and secondly whether they were concordant or not.

MATERIALS AND METHODS

A detailed history was obtained from both twins. In addition, both had a complete physical examination. When the heterosexual twin was approached he first treated the matter with contempt, but after the investigator persisted, he agreed to cooperate in the investigation.

Photographs of the twins during infancy were obtained from the parents (Figures 7–9). Full blood grouping of both twins as well as of their parents was determined. The saliva of the twins was tested for ABO secretor activity. Fingerprints and dental impressions were taken. The twins were tested independently for color blindness, using Ishihara charts, and their taste threshold to phenylthiocarbamide was determined, using the method of Harris and

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Kalmus (3). The sex chromatin was ascertained from skin biopsies of both twins. A full depth 2 cm. square of skin was grafted from the forearm of each twin to that of the other (Figures 10–11). The grafts were observed at regular intervals and after eight weeks a transverse biopsy was taken across the whole graft including normal skin on both sides. This was histologically examined. Twenty-four-hour specimens of urine from the homosexual twin were tested for follicle stimulating hormone, 17-ketosteroids and 17-hydroxycorticosteroids. Projective psychological tests were performed

FIG. 1

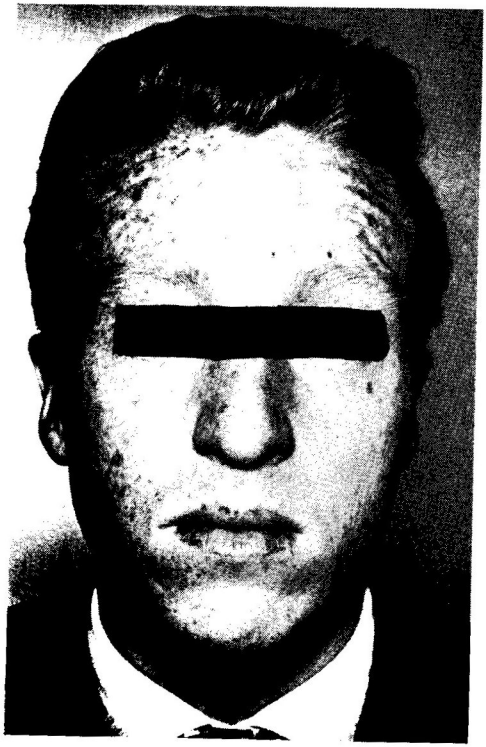

FIG. 2

FIG. 3

FIGS. 1–3. The homosexual twin.

FIG. 4

FIG. 5

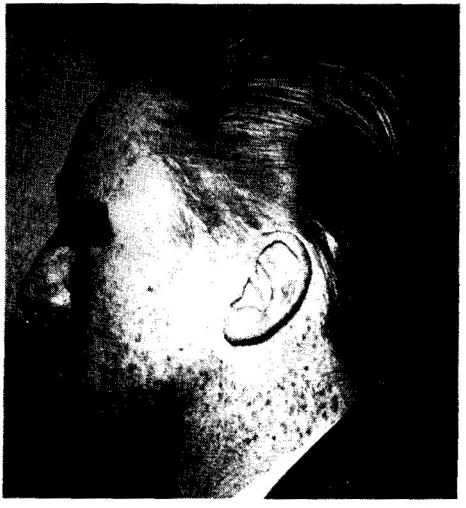

FIG. 6

FIGS. 4–6. The heterosexual twin.

on both twins. After the Thematic Apperception Test had been carried out on the heterosexual twin the record was submitted to three independent psychologists for interpretation. Initially they were given no information about this study in order that their opinions would be as unbiased as possible. After their initial report they were asked whether there was any evidence of homosexuality.

CASE REPORT

John, a 20-year-old white male, was admitted to the Johannesburg General Hospital in December, 1959, having attempted

FIG. 7

FIG. 8

FIGS. 7–8. The twins during infancy.

FIG. 9. The infant twins with their elder brother.

"peculiar sexual attraction" but did not discuss it with anyone. He said, "The males to whom I am attracted are quite serious and take an active part in the same type of sport as me. They are good-looking and well spoken. I can't describe them any better." When he first noticed this attraction to individuals of his own sex he was not worried, as he did not consider it abnormal and had always considered himself to be feminine in his mannerisms. He did not tell anyone about his feelings as he thought that they would laugh at him. It was only when he was 17 years old that he heard about homosexuality. At that age he developed a platonic friendship with a colleague four years his senior. He does not think that this friend realized that he was a homosexual. After going out together for two years his friend changed his job and was transferred

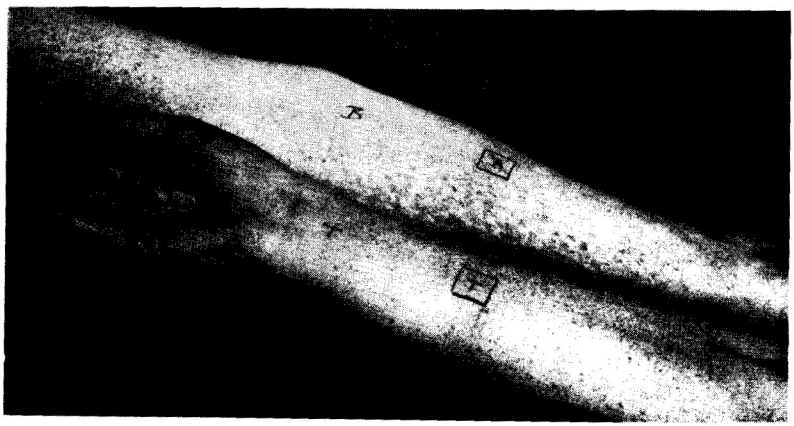

FIG. 10. The forearm of the twins prior to the transplantation of skin.

suicide by cutting both his wrists and taking an overdose of aspirin and Noludar. He had been depressed following a recent passive homosexual experience. During his first job (as a bank clerk) at the age of 16, he first began to feel sexually attracted towards men. He would picture himself as a girl and a certain man as his boy friend. He stated, "I would see a man and wish that I could go out with him. I would fall in love with about one in every twenty men that I saw." He felt self-conscious about this

many miles away. This resulted in the patient becoming severely depressed. "I was most upset for about a week. This was followed by a blank in my mind which must have lasted another week. I was found in a hotel many miles from home. I don't know how I got there. This is the only time in my life that I have had such a breakdown. I remained upset for a couple of weeks after the blackout and did not want to see anybody. I was visited by my family doctor who referred me to a psychiatrist, with whom I

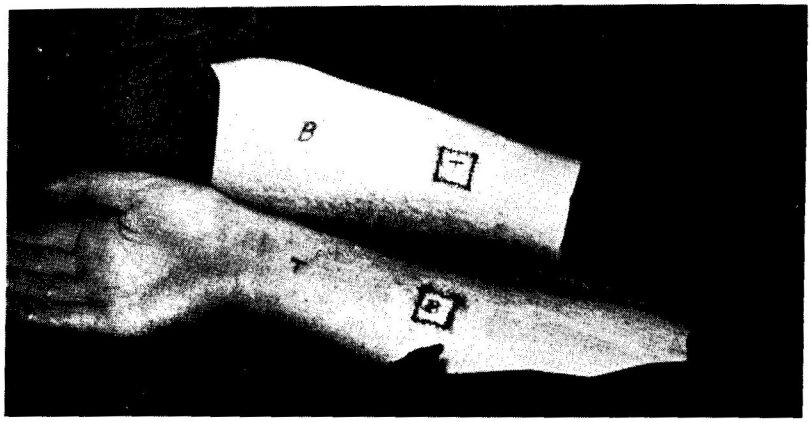

FIG. 11. The forearm of the twins after the transplantation of skin.

discussed my problems. I only saw the psychiatrist once as I was afraid to talk about my homosexuality." He had no further close friendships with the male sex. In November, 1959, while having a meal in a cafe, he was approached by a man six years his senior. This man said that he had heard that the patient was a homosexual and that he would like to have sexual relations with him. They went to the man's flat where the patient had his first homosexual experience. He was the passive partner and enjoyed it at the time, but afterwards became depressed and attempted suicide. It was this suicide attempt that resulted in his admission to the Johannesburg Hospital.

DIFFERENCES AND SIMILARITIES BETWEEN THE TWINS

Early development: The twins were born in 1939. The firstborn, John, weighed five and one-quarter pounds at birth. Shortly afterwards his twin brother was delivered, having a birth weight of five and three-quarter pounds. Ever since birth George has been slightly heavier than John. The twins were delivered at home by a district midwife. Nothing is known about the placenta and membranes. It was about four days after their birth that it was noted that both had a "tongue tie." The midwife treated this herself with a pair of scissors. Both were breast-fed for one month and then bottle-fed for nine months. Solids were commenced at the age of six months. Their mother does not recall any differences in their feeding habits. John was "a very good child and not naughty like other children," whereas his twin was "like most boys." As far as their mother can recall, their teeth erupted at the same age. George commenced walking and talking a month before John. During their childhood it was only the homosexual twin who had neurotic symptoms. He sucked his thumb at the age of eight to nine years. He could not stand being alone in a room "because I thought that there was something in the room which I could not see." Between the ages of ten and twelve he had periodic bouts of somnambulism.

Family history and interpersonal relationships: The father was a healthy 48-year-old store assistant. He did not appear to favor any particular member of the family. Although none of the children got on well with him, it was perhaps John who was most rejected by him. Both twins maintained in interview that they had had difficulty in reaching a satisfactory rapport with their father. The mother was four years younger than their father. She had chronic rheumatic carditis with mitral stenosis and was under the constant supervision of a physician. In addition, she was an inadequate personality

prone to depressive episodes and latterly addicted to Noludar. She was well known to the writer and was in fact admitted to the Johannesburg Hospital soon after the patient because of a suicidal attempt. This she did, so she said, "because his admission to hospital came as a severe shock to me." Although she stated that she was not aware that he was a homosexual she had been suspicious that there "was something wrong with his sex." Both twins had been closely attracted to her and preferred her to their father. George was of the opinion that his twin was his mother's favorite "because he can't stand on his own." The parents had been divorced for the past two years but still regularly visited each other. Besides the twins, there were two other siblings, an elder brother, aged 23, and a younger sister of 13. The twins had never been close friends and after going to high school they drifted apart completely due to different interests.

Hobbies and interests: As a child the patient always preferred to play with girl's toys. This interest was observed prior to the age of four. George, on the other hand, played with the usual toys that interest a boy; *e.g.*, cars, trains and soldiers. While at school John developed an interest in singing and recitation and regularly took part in the *Eisteddfod* where he received numerous awards. His twin was not interested in such matters. During high school George was most interested in building and flying model aeroplanes. Since leaving school he has been attentive to films, but does not have any real preferences. George is fond of jazz and plays snooker and darts approximately twice a week. John prefers classical music, does pewter work as a hobby and is interested in sewing and cooking. This does not interest his twin. George is very fond of riding a motor bike, whereas his twin dislikes it.

Sports: When the boys were at primary school they both played tennis and soccer. At high school George continued to play tennis but also took up rugby and cricket. He eventually became captain of the school first cricket and tennis teams. He played in the third rugby team. Both twins were strong tennis players and competition between them was keen. After a tough battle it was usually George who took the match. John still plays tennis but George lost interest in it when he started work and prefers to drink and play darts with his friends. While at high school John went in for physical training and athletics in addition to tennis. George, although taking part in the former, did not have much interest in them.

Friends: Until they went to high school the twins had many friends in common. It was John, however, who played almost entirely with girls between the ages of four and 12. At twelve, both went to boarding school where they mixed with boys and girls. John had no real interest in either sex and although he got on well with many of his schoolmates he had only two close boy friends. George, on the other hand, was much more popular and had many friends, including a few girls.

Sexual education and behavior: It was from their classmates that they both learned about sex when they were about ten. The information seemingly did not come as a surprise and did not worry them. At about this age their elder brother and cousin masturbated in front of them. From then onwards they began to masturbate. This apparently did not cause any feelings of guilt, as they both considered it as normal behavior. Although George denied fantasies when masturbating, John stated that from the age of 16 he always pictured himself as a girl having sexual intercourse with a man. He still has such mental images as he masturbates. George started to go out with girls when he was 13 and is sexually attracted to girls. He has had about 20 girl friends and first had sexual intercourse three years ago. For the past two years, he has been intimate almost every week with one of three girl friends. The homosexual twin, on the other hand, has taken out only two or three girls

and has kissed them. This resulted in no "sexual feeling." He has had no other heterosexual experiences and has never had a desire to have sexual intercourse with a member of the opposite sex. From the age of six, John wanted to be a girl and had the desire to dress in girl's clothing. At that age he did in fact dress up in woman's clothing on about three occasions. He liked it immensely and would have done it more often but felt that "it should not be done." He stated, nevertheless, that this desire to dress in the clothing of the opposite sex has not been very strong. However, the longing to change his sex has been pronounced and he has lived with the hope that he could have an operation which would allow him to become a female. He remembers once reading about such an operation in a newspaper. John has had no urge to have children. The homosexual inclinations of the patient are described above. His co-twin has emphatically denied any homosexual thoughts or experiences at any stage of his life. This has been in spite of strong reassurance that all information supplied by him would be treated with the strictest of confidence. The importance of accuracy in his history was also explained to him.

Education: They started school at the same primary school when they were six years old. Both passed Standard Five at the age of 12. It is reported that they got on well with the teachers and school children. At school the teachers always considered the twins "as one." While at primary school George usually came first or second in the class and consistently did better than John, who most often came second or third. They were both very good at history, arithmetic and languages. Between the ages of 12 and 16 they went to a coeducational high school as boarders. There they were most successful in bookkeeping and commerce and had difficulty with mathematics. While at high school they ranked about tenth in class. It was at this period, however, that John began to get higher marks than George. Throughout their schooling they always remained in the same class. Both were fond of all aspects of their education and were keen on matriculating, but on their father's recommendation they left school at the age of 16 after passing their Junior Certificate (Standard Eight).

Occupations: After leaving school the twins entered different occupations. George became an apprentice fitter and turner, while John started work as a bank clerk, as he was not interested in a trade. After about two and a half years, John was offered a post on the clerical staff of the same firm as his twin. In view of better prospects he accepted this job and has remained there ever since.

It was in the latter job that the homosexual twin began to have difficulty with the male tradesmen. "They whistled at me like a person whistles at a girl. They also made silly remarks such as 'We would like to take you out.' They appeared to be aware of my homosexuality." He got on well with the clerical staff who were nearly all women. The heterosexual twin had a satisfactory interpersonal relationship with all his coworkers.

Residence: The twins lived at home with parents and siblings until the age of 12. At that time their parents sold the house and the boys were sent to boarding school, where they remained until they left school at the age of 16. Both then continued to live at home until their parents' divorce in 1957. Subsequently they boarded with separate friends.

Antisocial behavior: George once had his name taken by the police at the age of 19 "because of disturbing the peace by being too noisy on the way home from a party where I had too much to drink." This was the only time that he had been in trouble with the police.

Past illnesses: Except for the usual childhood diseases medical histories were essentially negative. At the age of six both had tonsillectomies. They had chickenpox

together when they were seven; a short while later both of them developed measles.

Habits:

Alcohol: George drinks an occasional beer during the week, but at the week-end he reports consuming up to three-fourths of a bottle of brandy. John never drinks.

Cigarettes: Both twins smoke twenty to thirty cigarettes per day.

Drugs: When he was 18 years old George smoked "dagga" (Cannabis sativa) on one occasion. He disliked it and has not tried it since then. His twin has never taken it or any other drugs.

Physical examination: The twins resembled each other in appearance. The homosexual, although of slightly lighter complexion than his co-twin, was of a similar body build. They had light ginger hair with identical scalp hair. Their ear patterns were similar and both had very little fissuring of the tongue. A Grade 3 mandibular prognathism was present in both twins. They eyes were greenish grey in color, and the left was dominant in both the homosexual and his co-twin. Minimal hair was present on the chest of both twins and their bodies were both covered with prominent ephelides which were similarly distributed. They were both right-handed and had identical palmar creases. A mild degree of clinodactyly was noted in the little fingers of both members of the pair. Hair was present on the middle phalanx of only the fourth and fifth fingers of both hands in both individuals. The feet were of similar size, had identical plantar creases and the hallux was the largest toe. The remaining toes were progressively smaller. The homosexual twin was left-footed and the heterosexual right-footed.

RESULTS OF INVESTIGATIONS

Blood-groups: The twin pair had identical blood groups. They both were A_1, Rh negative (heterozygous), M Ns, P, Kell negative, Duffy negative, Le^a negative and C_w negative. The father had the same blood groups and the mother differed only in being N N_s and not M Ns.

ABO secretor activity in the saliva: This was present in both twins.

Fingerprints: These were submitted to Doctor F. Kallmann who reported: "On the basis of a detailed statistical analysis of the fingerprints of the twins, it is impossible to classify this pair of twins as either monozygotic or dizygotic, as the ridge counts and pattern counts fall within the monozygotic-dizygotic overlap group."

Dental impressions: Professor C. J. Dreyer, of the University of the Witwatersrand Dental Research Unit, compared the dental impressions of the twins. He observed that there was contraction of the maxillary arch associated with a high vault of the palate, lingual inclination of the mandibular buccal segments and an anterior open bite in the homosexual twin. These abnormalities are all consistent with an abnormal swallowing habit.

Tests of color-blindness: The twin pair both displayed the classical features of the completely green-blind variety of red-green color-blindness.

Taste threshold to phenylthiocarbamide: Both twins tasted phenylthiocarbamide in low dilutions. The homosexual twin tasted it in a dilution of 5.08 mgm. ml and his co-twin in a dilution of 2.54 mgm./ml.

Sex chromatin: Sections from skin biopsies of both twins were cut at different levels and stained with three different stains. They showed the presence of sex chromatin in less than 5 per cent of the nuclei of the epidermis, sweat glands and muscle in both twins. Their nuclear sex is therefore that of the normal male.

Skin graft: The 2 cm. square of skin which was grafted from the heterosexual twin to the homosexual took completely (Figure 12). The heterosexual twin removed his dressing during the first week and scratched it because of itching. Nevertheless, the graft

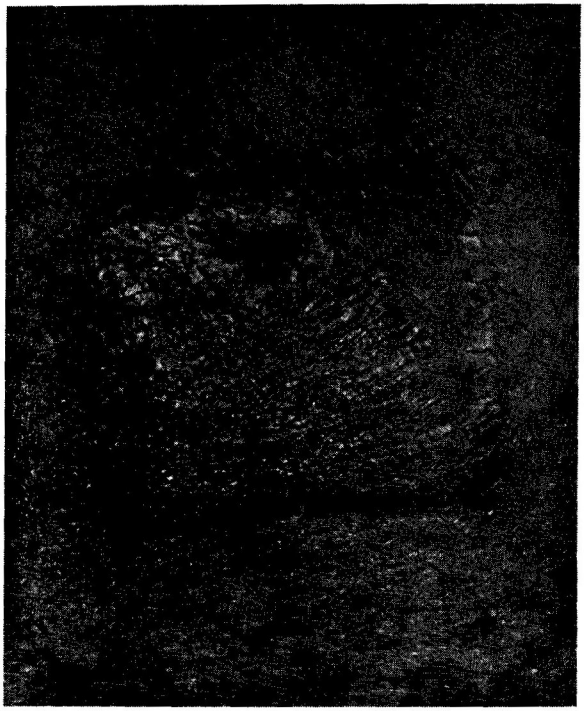

FIG. 12. The skin graft after eight weeks.

took extensively in the periphery. Histological examination of the graft after eight weeks failed to reveal any evidence of an inflammatory reaction. The junction of the graft with the normal skin could barely be detected.

Hormonal examination of urine from the homosexual twin: Twenty-four-hour specimens of urine were found to contain 13.4 mgm of 17-ketosteroids (estimated as dehydroisoandrosterone); six to twelve mouse units of follicle stimulating hormone; 5.9 mgm of 17-hydroxycorticosteroids (P.S.C.).

Projective psychological tests: These were carried out by a psychoanalytically orientated psychologist, who concluded that John's homosexuality was due to the following:

1) A passive-dependent attitude toward the mother; her inability to satisfy such demands, arousing ambivalence in the patient.

2) The possible explanation for such a strong dependence on the mother was the patient's fear of an aggressive father.

3) In order to adapt to a disciplinarian and aggressive father, the patient denied his Oedipal wishes and developed toward the father a passive, masochistic attitude, so attempting to accept symbolic castration.

4) The aggressive and violent father was not an object with which the patient could easily identify; he therefore tends to identify with the mother and lacks an appropriate ego ideal.

The Thematic Apperception Test, which was administered to the heterosexual twin, revealed an ambivalent personality whose tendency to dream (rather than to act) set up a syndrome which could easily be portrayed in terms of contrasts and apparent paradoxes. His reactions varied between clear and definite responses to certain life stimuli, and an opposite and overwhelming response of confusion and internal chaos.

He was seen as ambitious but without goals; his hostility had intrapunitive elements. His general anxiety seemed to be related to his inability to express his hostility in an adequate way. Yet, this is a man who cannot understand basic feelings other than in terms of aggression. Even more distressing for him is the fact that he is terrified of his own aggression and has difficulty in suppressing it because he lives in a threatening world. He seems to function best on a level of withdrawal, especially when external pressures demand a definite course of action. Apart from occasional explosive and immature outbursts of emotion, he appears capable only of having shallow emotionality in his interpersonal relationships. There was nothing in the record to suggest homosexuality. It is, however, doubted by some as to whether projective tests *per se* can ever reveal anything more than broad personality outline. Special psychological tests, such as those of Terman and Miles (19) have been developed to differentiate one sex from the other: these tests unfortunately were not available during the present study.

DISCUSSION

In the diagnosis of twin zygosity much attention has been paid in the past to the examination of the fetal membranes, as it was generally believed that one-egg twins would have a single placenta and chorion with two amniotic sacs; two-egg twins were thought to be present when two placentae, chorionic sacs and amniotic membranes were present. It is now well known that this method is fallacious, as monozygotic twins may have two placentae, choria and amniotic membranes. The similarity method of classifying twins is widely used today. The more alike a twin pair is in variable physical features, the more probable are they to be identical. The utilization of factors that are largely the result of heredity are most important. Among the latter are the blood groups, fingerprints and ability to taste phenylthiocarbamide. If twins differ in their blood groups they cannot be MZ in type but if they are similar they may or may not be identical. The ultimate decision can be made only on the basis of the relative probabilities of their being monozygotic or dizygotic. Methods of establishing the probability of dizygotic and monozygotic twins have been outlined by Race and Sanger (13) and Smith and Penrose (17). The twin pair presented above was unfortunately not ideally suited to the same type of statistical analysis, as the parents had almost identical blood groups. Except for the homosexuality, and for differing maxillary arches that are consistent with an acquired abnormal swallowing pattern, the twins were similar in all respects. In order to establish the twin type with more certainty, skin grafting was performed.

It is well known that the grafting of skin from one individual to another rarely survives whereas autografts invariably take. Medawar and his co-workers (9) have shown that the transplantation of skin from one individual to another may appear to take initially but later to be rejected after the development of an antigen-antibody reaction. The rejection results from the differing genetic constitution of the tissues (10). Another exceptional instance where homografts in non-identical twins may be exchanged with impunity is when the recipient suffers from agammaglobulinemia, as an antibody response will be lacking (2). In the present twin study the latter condition has been excluded and, while the former situation is theoretically possible, it is believed to be extremely improbable.

It would appear, therefore, that the twin pair under discussion is, with a minimum possibility of error, monozygotic.

There are very few reports of monozygotic twins that are discordant for homosexuality. Furthermore, in the majority of such cases the diagnosis of one-egg twins can be accepted only with reservation.

The earliest published report on possible

identical male twins who were discordant for homosexuality is that of Lange (8). Among his study of criminal twins were the 24-year-old brothers, Otto and Erich Hierse-korn. Otto, the homosexual, had been imprisoned as a result of his sexual activities. He had occasional intercourse with females, but without particularly caring for it. Erich, on the other hand, was purely heterosexual and emphatically denied any attraction to his own sex. It disgusted him to think of such a thing and he was unable to imagine how anyone could have anything to do with someone of the same sex. At school the twins were so similar in appearance that their teacher requested that they should wear suits of different colors in order that he could distinguish them one from the other. When Lange saw the twins he felt that it was easy to tell them apart. The homosexual had gynecomastia and other feminine characteristics which formed a strong contrast to the masculine conformation of his co-twin. The author was of the opinion that the brothers were monozygotic because of their resemblances in complexions and appearance. With the exception of one index finger they had similar fingerprint patterns. The twins had apparently suffered from birth trauma, for the homosexual twin had a "flaccid right cheek and a facial tic." According to Lange, "an expert cannot help feeling convinced that there is some connection between this brain lesion and his sexual abnormality."

Another early twin study on homosexuality is that of Sanders (15), who reported his findings on eight twin pairs, seven of which were monozygotic and one dizygotic. With the exception of one female monozygotic pair that was concordant, the rest were males. Five of his male monozygotic pairs were concordant and one was discordant; of the latter pair (O and P), the homosexual (O) suffered from epilepsy between the ages of four and 14. After he turned 14, he became overtly homosexual but tried to abstain from it without success. This resulted in a severe psychological disturbance. His co-twin was heterosexual. The parents of this twin pair were first cousins. Sanders considered that the homosexuality might have been related to the presence of underlying brain disease which had manifested itself with epilepsy. He, however, drew attention to the fact that Hirschfeld (4), in an investigation of 40,000 epileptics, was unable to find any homosexuals among them. The dizygotic male twin pair of Sanders was discordant for homosexuality.

Rainer *et al.* (14) reported a study on two sets of identical twins, one male and the other female, in which one of each pair was heterosexual while the other was homosexual. They believed that "the determining life experiences for the differentiation of the sexual role were found in the prenatal fantasies of the parents of one pair for a child different in sex from that of the twins at birth; and a slight but definite anatomical differentiation in the twins which determined for the mother a special attachment for one or the other child. There resulted early differentiation of the body ego for each of the individuals and later in life enhancement of the sexual role through the existence or deprivation of significant extrafamilial relations. Of significance also was the parental attitude towards the role of the individual child through the naming of the child."

West (21) mentioned that he had come across a pair of seemingly identical twins, one a practicing homosexual and the other definitely not, but owing to the usual difficulties the case could not be scientifically investigated.

Kallmann (7) mentioned a 30-year-old pair of one-egg twins which were discordant as to both hebephrenic schizophrenia with alcoholism and exclusively homosexual behavior that had been present since adolescence. Slater (16) stated that the Medical Research Council at the Maudsley Hospital had investigated a monozygotic twin pair similar to Kallmann's in which the partner

who had a schizophrenic illness with a fair remission was a confirmed homosexual, while his twin was not. On follow-up, the second twin was found to have become schizophrenic and had the delusion that he might be changing his sex, but no homosexual behavior had been reported. Slater has also come across other homosexual twins which were mostly alleged to be discordant but had been difficult to investigate.

The fact that discordance for homosexuality in monozygotic twins exists does not in any way invalidate the concept that overt homosexuality is a gene-controlled variant in the integrative process of psychosexual maturation. Genetic studies in many well established hereditary diseases have conclusively shown that although a mutant gene may be present it does not always produce a recognizable effect. The occurrence of incomplete penetrance can be adequately explained by the fact that other genes and environmental factors modify the expression of the gene under consideration. Furthermore, although monozygotic twins possess similar complements of chromosomes and genes, they may receive differing quantities of cytoplasmic inclusions from the zygote. For years it has been questionable whether genetic determiners exist in the cytoplasm, but recently evidence of cytoplasmic inheritance has been produced from observations on lower forms of life (11, 12, 18, 20). Although this has never been demonstrated in man it is possible that such cytoplasmic factors could affect the expressivity of genes and thus help to explain the discordance of inherited conditions that occurs in monozygotic twins.

It is generally assumed that the same complement of genes is present in both members of a one-egg-twin pair. Darlington (1), however, has pointed out that this is not always strictly true, as various examples are known where the monozygotic twin pair must differ in genetic structure. Slight differences in the genotype of one-egg-twins may occur through vagaries of the chiasma and crossover mechanisms. In addition, differences may be due to the reaction between the genotype and an asymmetrical cytoplasm. A possible difference in the genetic endowment of MZ twins may account for the discordance of homosexuality in certain one-egg-twins.

In psychoanalytic theories male homosexuality can be explained in a number of ways. It has been claimed that the homosexual rejects a heterosexual object choice, because of disappointment concerning the mother, or through fear of the female resulting from an early castration complex. On the other hand, an exaggerated emotional attachment to the mother is claimed to cause male homosexuality by rendering a normal heterosexual adjustment difficult or impossible due to an unconsciously conceived incestuous act. A strong identification with the mother is also said to cause a love for other men. Such explanations can be applied to most male homosexuals. An identification and over-dependence upon the mother was believed by some to be the cause of the homosexuality in the above case. But was this dependence not, in fact, due to the psychological disturbances resulting from the expression of his genotype?

The presence of red-green color-blindness in this twin pair is of interest since it is a sex-linked characteristic. This finding has not been reported in previous homosexual studies and may be coincidental. However, since color-blindness in this twin pair is associated with an abnormality in psychosexuality, it may suggest linkage with genetic factors that control male homosexuality. Further studies in this field are therefore indicated.

SUMMARY

A 20-year-old monozygotic twin pair discordant for male homosexuality is presented. The literature on male one-egg-twins that are alleged to be discordant for male homosexuality is reviewed. The absence of complete concordance for male homosexuality in

monozygotic twins can be adequately explained in terms of well accepted genetic concepts. The homosexuality in the one twin can also be construed by psychoanalytic theories.

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