



The Human Twin*

Luigi Gedda

For the geneticist, or for anyone else, to make a speech in Jerusalem means a cultural effort that is extraordinary. Like every other researcher, the geneticist must locate his scientific investigations in the context of a truth which embraces nature and the history of man. Those of us who are concerned with twin studies, however, cannot simply leave our concrete and specific field to deal with theoretical themes; rather, we must extract from our research these concepts that bridge the gap between the particular truths we seek and that total truth, which man desires in order to resolve the mystery which surrounds his existence.

I would like to submit to the distinguished personalities who are honoring our Congress with their presence, as well as to my very dear colleagues, the idea that the best project for creating a link between our field of interest and the other interests of modern culture would be to survey the state of our knowledge about the personality of the human twin.

Therefore, I will not talk about the application of the method of twin studies, but about the identical twin, the monozygotic (MZ) twin individual. That is, I will not talk about those dizygotic (DZ) twins like Esau and Jacob, who were different. DZ twins are, of course, real twins, and about twice as frequent as the MZ ones. But I will refer only to the twin who has another twin identical to himself, and who represents the classical model of the phenomenon of twins.

The person who derives from the same egg as another person, an egg which has been fertilized by the same spermatozoon, is first of all a very singular being from the phylogenetic point of view. This is because, in the classification of living things, the son of man is almost always unique.

From the statistical point of view, this exception occurs in about 3.5 births out of every thousand and is of clear genetical origin. That is to say, we are dealing here with a hereditary phenomenon which often is repeated in the families where it is present.

The human twin is thus a rarity of the human species in the sense that its conception is not immediate in the same way that the conception of a nontwin is. The twin is not conceived at once, when the spermatozoon fertilizes the egg, but after a brief intervening time, when the product of fertilization divides into two embryonic, totipotential groups of cells. Thus, the conception of the MZ twin takes place in two stages, while the conception of other persons occurs in a single stage.

The biological singularity of the human twin in its prenatal life is also marked by its shorter period of development within the mother's womb. The average length of a twin pregnancy is 8½ instead of 9 months, and the average weight of the single twin at birth is 2,600 instead of 3,350 grams.

*Opening Address, Third International Congress on Twin Studies – Jerusalem: 15 June 1980.

The fact that the individual twin is underweight at birth does not have the same negative impact as does the underweight of single births, because the twin reaches the standard levels of the human species in the first years of life.

However, the most important biological singularity does not regard the individual human twin, but rather the MZ pair: this means the existence of two identical individuals to whom there applies a paradox like the following: one plus one equals one.

Every human being is in fact a masterwork of genetic architecture so complex and sophisticated that, from the point of view of the laws of probability, it is practically unrepeatable. But, MZ twinning replicates the unrepeatable and produces a human body in duplicate.

It is as if the ancient city of Jerusalem possessed a double, with the same walls, the same streets, the same terraces, the same rooms, the same stones and much, much more, because we are not dealing with identical, fixed structures, but rather with cells, tissues, and organs that are alive, and therefore make up part of an identical process of transformation.

The existence of an identical energy formula capable of reproducing in each twin the three dimensions of sensory consciousness demonstrates how extraordinary this phenomenon is in itself, and how precious it is for the development of the anthropological sciences.

The static and dynamic identity of MZ twins is so much at the outer limits of the imagination that it sometimes happens that I ask myself: does there really exist an authentic and original personality in the human twin?

I note in passing that I, who ask this question, am not a twin, and that I often hear this same question from others who are also not twins. But I have never heard this question from an identical twin. They never ask this question because they experience their own individual personality as something authentic but special.

This special quality that comes out when we study the human twin derives first of all from the fact that the twin is aware of the existence of an exact copy of himself. He is aware of, and generally highly appreciates and likes the existence of his double. The pleasure of having a double is a trait that differentiates the psychology of the human twin from that of other men. For the person who is not a twin, the very thought that there could exist an individual similar to him, so similar as to violate his intimacy and to be confused with him, brings on a feeling of irritation, of frustration, of revulsion. But the human twin, on the contrary, not only appreciates his double but desires his presence, to the point of feeling acute loss if the other twin is no longer there. This is an acquired feeling, rooted in the experience of a life lived together starting in the very first days of existence. But it is nevertheless, a trait which distinguishes the personality of the human twin.

A second aspect which characterizes the twin is the mutual relationship between the twins, which is different from the relationship which each twin has with other persons of his family, or, more broadly, with friends and acquaintances. There exists between the two twins a very singular relationship, based on the intuition of a psychological similarity which the twins experience and carry with them at the same time.

The thought processes of identical twins, when they develop on the basis of the same stimuli, take place with the same speed, provoke the same mental associations, and reach the same conclusions. The incident described by Galton of the two identical twins who, one day are in different British cities and buy the same glassware service, is not a phenomenon of telepathy but of the correct functioning of the same biological components of human thought in the face of the same stimulus, through parallel timing.

If it is true that phenomenon of telepathy exists, it is certain that MZ twins are in the best position to demonstrate it and to use it. Up to now, telepathy between twins has been hypothesized, but not proved. On the basis of our experience, in order to explain

the observed phenomena it is enough to think in terms of a mechanism for the coordination of structures and of their chronogenetic functioning.

Simultaneity and agreement of thought are thus a characteristic of the psychology of twins.

The success in aerial acrobatics that made two identical twin pilots famous during the 1950s as members of the American air exhibition team, "the skyblazers," was probably due to this simultaneity and agreement of thought, movements, and reflexes. These twins were Captains Bill and Buck Pattillo, who in their air maneuvers carried out formation flying with a distance of only one and one-half meters between the wings at a speed of 800 kilometers per hour.

A third aspect has to do with the relationship of twin brothers or sisters with the environment in which they live: the family, the school, and the society.

The somatic identity of the MZ twins provokes in the environment around them reactions of surprise, novelty, curiosity, and discovery. The pair of twins stands out as such, even if each of its members taken in isolation does not possess any specially attractive aesthetic, psychological, attitudinal, or pathological qualities. It is the existence of the twins "in duplicate" which strikes people and which, in a certain way, isolates the pair. We are dealing here with an isolation that can be very cordial and positive, but which is something that marks the twin in the eyes of public opinion. It is sufficient to recall the passage of the Gospel in which the Apostle Thomas is mentioned: Saint John the evangelist writes of him as "the one who is called the twin." We do not know who his twin brother was, but we note the reaction of the social environment that identifies Thomas with his exceptional biological quality: he is "the twin."

This reaction of the social environment "turns back" on the psychology of the twins in the sense that it reinforces the links between them. On the one hand, they know that they attract more attention and acquire advantages if public opinion perceives them together. On the other hand, the twins have long experience of the confusion they can create and exploit using the ease with which one twin is taken for the other when they act separately in order to obtain practical advantages. For example, a twin can show up twice for the same examination, once in his own name and once for his brother. Or, one well-rested twin can take the place of his exhausted brother during half-time of a football game. It is only just to point out that phenomena of this type do not derive from the desire to deceive people, but rather from a subtle spirit of humor, with which the twins play games with their social environment.

This paired reaction to the environment is one of the marks of the personality of the human twin.

The characteristics of the human twin which I have rapidly described involve primarily the subconscious. That is, they are forms of behavior that are originally instinctive and then become conscious and deliberate. Since the subconscious is linked to nervous structures which are well known, and since these structures are spatially and chronogenetically identical, it is easy to explain the agreement of the individual and mutual psychic reactions which characterize identical twins. Having said this, the question posed earlier increases in its importance: does the human twin have his own personality?

By the term personality, I mean the psychological individuality of the twin which, at the unconscious level, because of the reasons I have given and because of many other reasons which I have not mentioned, is not easy to distinguish from that of the other twin. The personality of the twin emerges gradually during the course of life in the sense that the higher faculties of the mind learn to exercise judgment over the subconscious and to use self-control in regard to the instinctive reactions that appear under stress: the higher faculties come to dominate anxiety, defense, phobias, and the rest.

The personality of the twin is manifested on the level of the conscious psyche, which possesses the capacity for abstract judgment and independent choice, despite the great similarity of the unconscious, which makes it hard for an observer to recognize the individuality of identical twins.

This special situation of the human, of the difficulty of discriminating between twins on the unconscious level and of the precise subjective and objective identification of the ego on the conscious level, is shown in the context of married life.

It sometimes happens that two identical twin brothers marry two identical twin sisters, but it is more usual for the identical twins to marry partners born singly in different families.

In the majority of all cases, the choice involved is absolutely individual and does not raise any problems. Cases of marital competition – that is, two twin brothers who court the same woman – are exceptional and attract attention precisely because they are so rare. I know of no cases of the wife of a twin leaving him for his twin brother. This shows the psychological uniqueness of the identical twin with respect to his cotwin both in the active sense – that is, in making an individual choice – and in a passive sense, in being chosen instead of the cotwin. Each twin is himself, feels that he is, and in the intimacy of his ego demonstrates it despite the identity of the body and the notable equivalence of the subconscious.

The marital relationship is therefore a test of the real personality of the human twin, and the twin couple is a very specific test for studies in experimental psychology applied to the differentiation of conscious and unconscious psychic functions and of afferent and efferent psychosomatic relations.

The special psychological situation which emerges from the study of twins yields results which are worth analyzing so that the picture we have of the human twin may be clearer for scientists.

The first result concerns the simultaneous starting point of what we call, by analogy, the assembly line of the organism. Because of the fact that they start at the same time, the phases that follow are concurrent, both in terms of physiological or normal phases, as well as of pathological phases of sickness. Obviously, this is true, all other things being equal – that is to say, in similar environments.

Einstein and Langevin had the idea of comparing twins to two watches that are synchronized. In order to explain the theory of relativity, they used the famous “twin paradox.” If one twin stays on earth and the other twin is launched into space and returns after a certain time, this second twin will be younger than the cotwin who stays on earth. In reality, the twins who pass their lives in a similar environment exhibit a very special phenomenon which we call “twin synchronism.” That is, they mark the same parallel times in the life cycle.

This synchronism produces, in turn, a special cognitive effect which is located in the “objective” or “external” or “de-personalized” knowledge of his own physical and psychic qualities which the twin acquires every time that he observes himself in his cotwin. In fact, all of his own hereditary qualities are present and objectifiable in the other twin. This knowledge enriches the human twin.

The ancient maxim of the Oracle at Delphi, “know thyself,” is easier to fulfill for the human twin who has the ability of perceiving himself from the outside by studying his twin partner. The single-born person does not have this possibility.

A second effect consists in the possibility of knowing the inner life of one’s own twin partner with an accessibility which no single-born person can have in regard to another individual. This possibility corresponds to the task of an actor, who must “impersonate” a character. The actor divests himself of his own personality and behaves according to the

personality of the character, of the part he is playing. This task is not easy, and is therefore a profession. But the twin can play the role of his cotwin with an instinctive naturalness and with a depth of insight that is all his own and which allows him to know what his cotwin is thinking and doing, because the thought and behavior of the cotwin correspond to his own. Here again, we have a psychological mechanism which looks like telepathy but which is not telepathy.

The higher level of knowledge which the twin has about his twin partner gives him concrete opportunities, like his ability to evaluate and treat his twin partner in an exemplary way. The twin can exercise this potential either in praise or in correction, or in emulation, but always in a positive and useful way.

The classic case here is that of the Belgian MZ twin brothers, Auguste and Jean Felix Piccard. Auguste began to explore the stratosphere by inventing a special balloon which carried him to an altitude of 16,770 meters. Then he explored the sea bottom, building a bathyscaphe with which he reached a depth of 3,150 meters in the Gulf of Naples. Jean Felix, in turn, built another stratospheric balloon with which he broke his brother's record by reaching 17,500 meters of altitude. Auguste died in Lausanne in 1962 and Jean Felix in Minneapolis in 1963.

The exceptions are frequently mythological, like the murder of Remus by Romulus, or attributable to sickness, alcohol, or drugs.

The totality of normal cases shows that there exists in a pair of twins a type of heightened sociality which, as a human phenomenon, offers both positive and negative aspects which we must study, in order to accentuate the positive and eliminate the negative.

The micro-society of the twins is negative when it isolates its members from the rest of the community. Here we sometimes find phenomena like cryptophasia, or a secret language between the two twins, who make up phonemes, words, and grammatical constructions that are incomprehensible to outsiders, and which are extremely harmful for the twins who use this primitive means of communication. In the files of more than 15,000 pairs of twins which exist at the Mendel Institute in Rome we have, tape recorded, the secret language used by several pairs of identical twins. I think that cases of this type can be useful for the specialists doing research on the formation of human language, but I feel strongly that this secret language is harmful and must be avoided, because it delays the psychological maturation of the twin, just like everything else that isolates him from the social context, whether it be identical dress, identical beds, or the same toys. With these considerations, I now come to touch on the problem of the education of twins, which is a delicate problem especially for their parents. In the human species the birth of a single child in each pregnancy has profound significance in that an intelligent and free man must be the object of special attention on the part of parents who give him not only life, but the experience of their own lives, and a civilization.

When we are dealing with identical twins, we find that their parents are not capable of correctly posing the problem of the twins' education, which is not just a double problem, given the fact that there are two children, but in reality a triple problem, because the educational process must overcome the special link between the twins. This is another reason for the delay in the psychological maturation of the human twin — the need to free the twin from his twin conditioning as well as from all forms of psychic contagion connected with this. We need to educate the parents of twins to carry out their task with wisdom.

The micro-society of the twins also presents interesting and useful lessons for the broader society to which all men belong.

It was once believed, as a result of the work of Schulte and von Bracken, that within each pair of twins there was a leading twin who made the most important decisions, or a twin foreign minister whose job it was to negotiate, orally and in writing, in the name of

the other twin in external relations in the family, at school, in sports, shopping, and so on. But today we think that these and other individual tasks of judgment and behavior are done in rotation, according to the psychic characteristics of each single twin in the light of his original or acquired abilities.

In each pair of twins there is a division of labor, not according to the psychoanalytic model of a dominant subject and a dominated subject, but rather in the mutual respect governed by greater competence or efficiency. This would come as no surprise in the DZ pairs, because there the twins are different. But it does come as a surprise in the case of identical twins, and demonstrates the existence of a distinct personality of each human twin, on the level of the higher faculties of mind, of intelligence, and of freedom.

Finally, here in the city of Jerusalem, at the crossroads of the world, here where spoke the prophets and Jesus Christ, I am happy to point out that twins give us a meaningful and exemplary image of that commandment which says: "Love thy neighbor as thyself." What other man knows his neighbor as himself, what other man loves his neighbor as the human twin loves his twin?

"Love thy neighbor as thyself" is thus the message of peace that twins, throughout their lives, bring to the world.