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A Study on Twins Before and after Birth

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INTRODUCTION

One of the main reasons why twins always held a particular fascination for the rest of mankind right from the beginning of time was not only their frequent and disquieting likeness, but also the fact that twins had been together during the usually solitary and sheltered crucial months of pregnancy.

In myths and legends as well as in many folk tales this shared sojourn inside the mysterious cavity of the womb seemed to be charged with important and often indelible consequences and two opposite and extreme results seemed to derive from it. On the one hand we see mythological and biblical twins, such as Romulus and Remus or Esau and Jacob, ravaged by the most violent and murderous jealousy where the contenders can find solace and survival only in the actual killing and annihilation of the hated rival. On the other hand we find twins such as Castor and Pollux who seem to be so tied to each other as to be unable to survive without their companion. When Castor is doomed to die, Pollux prays to Zeus, 'Father, let me not outlive my dear brother!' and in this case the relationship with the other twin seems to be so strong and so crucial as to obliterate the importance of any other human contact. These kind of twins seem to form almost a world apart and to live in another constellation: the Gemini forever united in a timeless universe miles away from that of people populating the earth.

Many popular beliefs also surrounded the intra-uterine activities of twins. Again we see fights as we also read in the Bible, Genesis 25, apropos of Rebecca, Issac's wife, 'Sed collidebantur in utero eius parvuli ...' But we read also of twins stimulating each other or keeping each other company. Also rather common is the belief of almost inevitable incest between brothers and sisters already occurring inside the narrow space of the womb.

Generally these views seemed to attribute to twins a much more lively and 'adult' life than the one ascribed to non-twin solitary foetuses who were mostly seen (and partly still are) as much more passive, amorphous and little differentiated creatures: as if the fact of sharing the nine months of pregnancy with another companion gave twins some kind of special attributes.

Legends, myths and folk tales seemed to find often, though by no means always, a confirmation in real life, as jealousy, emotional entanglement and sometimes complete closure of the couple towards the outside world are common knowledge in daily life and all these phenomena were mostly seen to arise from something deeply intrinsic to the couple.

Though several scientists and scholars of the past took an active interest in twins, it was only with the publication in 1875 of Galton's paper 'The history of twins as a criterion of the relative powers of nature and nurture' that twins began to be investigated scientifically. Francis Galton was certainly influenced by his cousin Darwin's evolutionary theories, but he did not concentrate on evolution as such. He set out to study individual differences amongst human beings in order to discover how much these were derived from the intrinsic nature of the individual or else from the qualities and the characteristics of his environment. Twins seemed to be particularly suited for his purposes. Galton was the first scientist to realize, even if only intuitively, and to describe the differences between Monozygotic (MZ) and Dizygotic (DZ) twins: the former were derived by the splitting of the same fertilized egg and therefore carried an identical genoma,

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whilst the latter were derived from two different eggs fertilized at the same time and therefore, genetically speaking, were just like ordinary brothers. But MZ twins usually are reared together and hence share not only the same nature, but also the same nurture; therefore several of their similarities could also be explained by their shared cultural environment. Galton decided to compare the appearance of certain physical as well as intellectual distinctive features in MZ and DZ twins. He also focused on the possibility of a simultaneous appearance of certain illnesses and of mental illnesses in particular.

Since Galton's times his method has been refined and perfected and innumerable researches have been carried out on twins. In fact 'Gemellology' is now considered a science in itself, but most of the researches on twins still centre around the original debate on nature *v.* nurture. Apart from the artificiality of separating nature and nurture in real life, often the term nature seems to relate not only to the genetic endowment of the individual, but to be confused with all that is pre-natal. Very few researchers apart from Bryan and Zazzo seem to stress the potential importance of pre-natal environment on the future make-up of the individual. Twin studies have attracted mainly researchers interested in biology, epidemiology and genetics and have only been rather marginally touched by psychologists and psychoanalysts, with a few exceptions such as Zazzo and Burlingham (1952). I will not discuss here the many and often discordant contributions and conclusions reached through twin research. Some authors consider the environment as a simple catalyst rendering it possible for the genetic inheritance of the individual to unfold, some others seem to consider the individual as a kind of *tabula rasa* on which the environment leaves its indelible imprint, still others seem to view life in a totally deterministic light, as if we were determined only and once and for all by our genes. The writings of Gedda (1961), Mittler (1971), Bryan (1983) and Zazzo (1960) are fundamental reading for anyone wanting to know more about twin research.

My reasons for studying twins are slightly different from the universal query of nature *v.* nurture that usually attracted and attracts so many researchers.

One of the most intense debates within the psychoanalytical movement centres around the psychological birth of the human infant, i.e. its capacity to live mentally and emotionally in the outside world once out of the narrow boundaries of the womb. On the one hand are analysts who consider the infant not yet psychologically born for at least the first few months of its post-natal life and regard it as an ego-less creature still living inside a kind of post-natal womb, while on the other are those who consider mental life to be operative from birth and for most of them the actual event of birth is regarded as the turning point that sets mental functioning in motion. Only with the meeting of other human beings after birth do they consider that the infant begins to feel and think. Very little mention can be found in the psychoanalytical literature of the possibility of mental life, ego functioning and awareness already in the foetus and of the possible bearings of the previous stage, i.e. of foetal life, not only on the future development of the individual, but also on the mental functioning of the baby.

Recently much interest has been centred around the effect of maternal influences on the foetus during pregnancy. Many psychoanalysts tend to believe that maternal emotions and even fantasies could have a strong impact on the foetus and therefore determine the outcome of its future personality as well as its future sanity or pathology, but again the foetus is considered almost as a non-entity and in its extreme form this view tends to consider it as a totally mouldable *tabula rasa* on which the mother leaves her imprint and pregnancy is regarded as important only in so far as her state of mind is concerned. All debates on the origins of mental life are rendered even more heated by the objective difficulties encountered in studying it.

RESEARCH

And we come here to twins. My interest in twins is a longstanding one, but I only came to study them rather late in my career, following other research on the continuity between prenatal and post-natal life. Some preliminary results of that research have already been described elsewhere (Piontelli, 1987) and I will

only summarize a few points here before explaining my reasons for studying twins. My aim in that research had been to extend infant observation to pre-natal life with the aid of ultrasounds. Several single pregnancies were followed in the pre-natal stages at monthly intervals with an average of 5 ultrasonographic observations, and the same babies, once born, were followed weekly for one year together with their mothers in the natural surroundings of their homes with the method of infant observation as described by Bick (1964). Subsequently periodic follow-ups have been carried out. What seemed evident to me in all these observations was how one could detect already in utero some early markers of the future temperament of the child. All these children are now 3 years old and most of my initial impressions of them inside the womb have been confirmed by their later development.

After observing a few single pregnancies I began to wonder about twins: what happened when two foetuses were contained in the womb instead of one? Several questions and hypotheses came to my mind:

1. if one postulates that mental life proper and relationships only begin after birth with the meeting of other human beings, what consequences could be derived from the presence of another similar creature inside the womb?
2. Is the foetus anyhow too immature and therefore the presence of the other twin totally irrelevant for the development of its future mental and emotional life?
3. Or, if not, could this perhaps entail a more precocious awareness of another living entity similar, yet different from oneself?
4. Could this in other words bring about a precocious psychological birth?
5. and furthermore: could a relationship between two twins be observed already in utero?
6. Could this precocity of relation influence and in some extreme case even obliterate any future relationship?
7. Are there similarities and/or differences in the pre-natal behaviour of twins?
8. Is individuality already evident at such precocious stages as for single foetuses or does the fact of living in the same environment somehow blur any individual spur?
9. And in the case of monozygotic twins, does the fact of having the same genoma mean automatically the same reactions and the same behaviour?
10. And if one hypothesis is that maternal fantasies, emotions and states of mind have a deep impact on the foetus, what about twins: are they both affected in the same way by them? If one follows the extreme view of the all-importance of the maternal state of mind during pregnancy, both twins should receive the same kind of imprint.
11. But is it possible to oversimplify nature and real life in this way?

I don't think that in my observations of twins I gave an answer to all these fundamental questions, but I feel that their study has at least helped me to clarify a few points as well as opening up the possibility of understanding a bit more about the remote origins of our mental and emotional life.

As with single pregnancies, the ultrasonographic observations were started around the 18th week of gestational age and were then continued at monthly intervals till the end of pregnancy. Each mother was therefore subjected to an average of 5 ultrasonographic observations lasting about one hour each. No stimulation was applied during the observations. Given the difficulty of concentrating simultaneously on both foetuses, it was decided to observe first both components separately and then to focus on the interrelation between the two. Given also the difficulty of observing the whole body of each foetus after the 20th–22nd week, it was decided to focus preferentially on the cranial section of the body of each. Whenever possible these sections included also some small parts of the body of the other twin, so as to observe any possible correlation between the movements of the two. Twins were differentiated basically following four criteria: (1) whenever possible, sex, (2) presentation, (3) side and position, (4) size. With one couple of monozygotic, monoamniotic twins size was the only possible discriminating factor. The observations were then continued at weekly intervals for the first year of life of the children and subsequently once-a-term follow-ups have been carried out. This rendered it possible to study in detail not only the behaviour of each individual child and its relationship with the other twin, but also to

observe the impact of the environment on their growth and development.

Certainly observing twins requires a double effort of attention and infant observation requires an enormous amount of time and thinking on the part of the observer. Therefore I don't think it will ever be possible with this type of research based on such detailed observations to gather numbers and figures comparable to those of medical or even psychological research. Infant observation is more akin to psychoanalytical research in its slow and painstaking focusing on the dynamics of each single individual. The unusual depth of this kind of observation, though, should make up for its relative scarcity.

It is also important when dealing with such primitive stages as pre-natal life that the observer should have already had a long training at least both in child development and in meticulous observation, so as to avoid possible wild leaps of imagination. Having worked in the field of infant observation (**Piontelli, 1986**) and child analysis for almost twenty years, though this certainly doesn't make me immune from many errors and mistakes, my long training has been an indispensable support for my observations.

FINDINGS

The first thing that struck me when I started observing twins with ultrasounds was how different the intra-uterine environmental conditions were for each member of the couple. First of all it is well known that one twin is usually less favoured than the other one who grows almost at its expense, and in some extreme cases this can actually lead to the death of the co-twin. This is more common in the case of MZ twins, but weight discrepancies are often very evident also with DZ twins. From our adult point of view the uterus may well seem just a narrow and uninterestingly monotonous cavity, but for a foetus the womb represents its whole universe and therefore even small (for us) differences are presumably of a major importance for it. Many are the environmental differences in the intra-uterine sojourn of twins: their position is different, they occupy a different side, their placenta is frequently different, their cord is often different and the majority of them are separated by a dividing membrane and hence inhabit two different amniotic sacs. Presumably therefore also such sensations as noises, sounds, pulsations, or proprioceptive and tactile sensations etc., reaching each twin are quite different. For this reason one could postulate that all twins, including identical twins, do have in fact, from the start, different experiences which could have a bearing on their future mental as well as physical development.

The ultrasonographic observation of twins is much more complicated as compared to single pregnancies. (Ideally to obtain a better visualization one should use two different sets of ultrasonographic equipment and two different probes, one for each twin. Unfortunately this was far beyond the very limited resources available for this research.) Also with twins it was possible to note clear individual temperamental differences between the two members of the couple from the early stages. In this respect twins seemed to behave like ordinary brothers, each with their own distinct temperamental endowment. Individual differences found their expression in various somatic manifestations, such as the choice of preferential postures, the repetition of certain activities and patterns, the higher or lesser frequency of bodily movements and their quality etc. As with infant observations such differences acquired a particular relevance and meaning only if they could be noted repeatedly over several ultrasonographic sessions.

What was also striking was the variety of individual reactions towards the other member of the couple. In this respect twins were far from behaving and reacting always according to a few simple patterns. Some apparently showed no reaction at all even to the strongest punches and kicks. Some seemed to perceive contact and actively reacted by withdrawing and turning away from it. Some others seemed to respond to contact. Still others not only responded to contact, but actually seemed to search actively for it.

The responses to contact from the other member of the couple, when present, also varied a lot. For instance they could be gentle and the two twins seemed then to engage in a mutual and seemingly affectionate cheek to cheek stroking. Or else they could be violent and each contact seemed to end up in a fight. At other

times the contact could just be characterized by an almost instantaneous countercontact followed by an immediate withdrawal, as if the twin, during the touching, had been struck by something akin to an electric shock.

Each couple, in fact, seemed to have from the early stages its particular mode of relating which continued throughout pregnancy and could still be noted in post-natal life. Therefore from the very early stages one could observe the emergence of both individual and couple patterns which continued to be seen in later life.

Two rather detailed examples will be given to illustrate these points. For reasons of simplicity my choice fell upon two couples of DZ twins, as with MZ twins things are certainly more complicated and in such debatable matters as the themes discussed in this research, I'd rather proceed step by step.

OBSERVATION N.1 — DZ twins (1 male, 1 female)

Mrs C, a woman in her mid-twenties, came accompanied by her husband (also in his mid to late-twenties) for the first observation. Rather tall and strongly built, she looked pale and plain, without a shadow of make-up or a hint of an even distant visit to the hairdresser. Her clothes looked perhaps intentionally out of fashion and she conveyed an impression of inhibitions coupled with a kind of timeless respectability. She looked somehow like a 'good girl' of the 50s, quite untouched by the sexual revolution of the 60s, or by the happenings and movements of the 70s and the 80s: the typical old image of the safe good girl one marries as opposed to the woman one loves or has fun with. Her husband, in fact, showed no signs of affection towards her and if anything kept rather at a distance from her and even dropped a few derogatory remarks. He immediately managed to let me know that he was also a doctor, though a rather jobless one, while his wife was only a nurse.

I was later to know through the obstetrician that they had met through the same religious organization, a very powerful one amongst many young people in Italy and which is also known for finding jobs and wives for its rather frustrated and fanatical adherents. Mr C himself was certainly no Adonis, but seemed to use his slightly superior economical and intellectual background to look down on his wife. All this conveyed an impression of sadness and of dullness, as if life had already passed them by.

When the obstetricians arrived and we started the observation, Mrs C looked rather dutifully at the screen, while Mr C seemed rather uninterested and perhaps only worried that his wife should be up to our doctoral standards with her infrequent questions and remarks. Mrs C was 18 weeks pregnant at the time and we could already detect during the preliminary measurements of the children their sex: a boy and a girl. The girl (later named Celia) seemed much more lively though conspicuously smaller than the boy (Mark, as he was later called). She moved her hands, her legs, her head, her feet and her arms a lot: she rubbed her feet, yawned, bent her legs, stretched her head, stretched her legs, joined her hands, put her fingers in her mouth etc., and I can read from the notes I took at the time, 'She seems lively and interested in trying different movements, positions, sensations; she looks like someone who might become quite interested in her surroundings and in life ...' This same liveliness, though, seemed to worry her parents who both commented, 'Let's hope she will calm down after birth ...'

Her brother, though he also moved a lot, conveyed to me a totally different impression, 'He seems restless, as if constantly in search of an impossible inanimate peace ...' He kept turning and folding his legs tightly while screening his face with his hands and particularly, as one obstetrician commented, 'He uses the placenta like a pillow ... look how he keeps trying to bury himself in it ...' He tried repeatedly to plunge his head in it. Again from my notes, 'I have the impression that any stimulus disturbs him ...' In fact he responded to any stimulation coming from his sister by turning away and burying his face even more deeply inside a distant corner of the placenta. Then if she didn't give up her attempts at making contact with him with rather gentle motions of her feet and her hands, he responded by violently kicking her back and to this she withdrew instantly as if frightened by his strength. These same patterns seemed to continue in the following observations: Mark buried

himself more and more inside his placental pillow while Celia continued to be active and added new movements to her already wide repertoire. She continued also trying to make contact with her brother and again each time he withdrew from it and often punched her back in her place.

During the following observations Mrs C came accompanied by an aunt and both spoke about children and family events. Mrs C had decided to give up her work at least for a while and said laughingly that she was hoping to produce more twins soon as she liked traditional large families and since twins ran in her family she was pretty sure to reach her aim.

With me Mrs C was always rather shy and a bit distant and I always had the impression that though she liked my presence, she also found it a bit of a threat, as if I represented someone too different from her safe and well known style of life.

When Mrs C was 27 weeks pregnant she was taken into hospital as she had felt some rather strong contractions and her cervix was found to be already slightly dilated. She was administered tocolytic drugs and was bedridden practically till the end of her pregnancy. She endured the first few days in hospital with resignation, but then became increasingly anxious and restless. I visited her a few times and she told me that she couldn't stand being in hospital, out of the familiar surroundings of her home. At first she was very anxious about the children, aiming at reaching at least the 34th week of pregnancy for their survival, but as time passed her anxiety seemed all-pervasive and she was afraid of going out of her mind.

When I visited her she kept saying 'I can't stand this any longer ... I don't even care about them any more ... I will go mad if I stay here any longer ...' and she seemed really on the verge of some dangerous breakdown. Her husband was of no support to her, worried as he was exclusively about what his colleagues thought of her. I spoke to the obstetricians and they also got worried about her mental state and since she was now 34 weeks pregnant, her contractions had ceased and dilation had remained virtually the same, she was allowed to continue her treatment at home. Mrs C was later to worry many times about the effect that her stay in hospital and her mental condition at the time might have had on her children, 'They say that your mental state during pregnancy affects the child ... I was so anxious ... I am afraid that they suffered a lot ...'

During the ultrasonographic observations while she was staying in hospital, however, the behaviour of the two children was practically unchanged. Only perhaps they moved a bit less, but probably because they were also less free to move. Mark continued to bury his head inside his placenta and to screen his face with his hands. Sometimes he could also be seen hanging on to the cord as to a sea-anchor and once he was seen licking it. Celia, now that she could move less, began moving the muscles of her face a lot and many and varied expressions could be detected on it: smiles, yawns, sucking movements, frowns, movements of her tongue and her lips etc. together with an intense ocular activity. This same activity seemed almost continuous in the last observation before delivery when Mrs C was almost 38 weeks pregnant. During that observation though, Celia was found to have ceased growing and it was decided to induce labour soon. Two days later the obstetrician phoned me to say that the children were born and well. She was sorry not to have phoned me before, so that I could have been present at the delivery, but it had all happened rather precipitously.

When I went to visit Mrs C in hospital the following day she seemed very pleased to see me and she immediately and proudly announced, 'In a minute they will bring the boy!' She then told me about the delivery. 'It all went so fast ... I couldn't believe it ... they induced it ... I didn't even realize what was happening ... the obstetrician told me to push ... I tried ... but I didn't know what was happening ... I felt something warm between my legs ... I thought it was still the amniotic fluid ... while it was the child ... the boy ... I didn't even have the time to look at him ... they took him away from me ... I had to think about the other one ... I almost forgot about her ... but she too, she had to be pushed out ... in fact a few minutes later she came out ... she cried immediately ... he didn't cry ... at least not for a very long time ... their character is completely different ... she is a nervy type—he is very quiet ... you forget that he is there ...'

Then she told me that even their weight was

all right (Mark weighed 2·800 gm and Celia 2·200 gm) She said 'Luckily now it's all over ... I lost my head completely on Saturday ... they had told me that I had to stay in hospital till Monday ... waiting till the obstetrician was back ... I lost my head ... I screamed and screamed ... I was swearing at everybody ... I just wanted to be left in peace ... at that moment I didn't even care about them ... I was past caring for them ... luckily now it's all over ... in 3-4 days I will be able to go home with him ... she will have to stay in hospital a bit longer because of her weight ... but I am quite happy to go home just with him ...'

A few minutes later the nurse arrived carrying Mark. Mrs C picked him up and showed him to me proudly saying, 'He just looks like his father!' Then she told me how Mark had not yet realized what the breast was. 'He plays with it ... he touches it and hangs on it ... he does with it what he did with the cord ... he has no idea of the breast ... I am just trying ... but it is very likely that I shall have to give him the bottle ...' Mark, in fact, looks very much like his father, with his black hair, small eyes and rather pointed nose. His eyes are kept half-closed and his forehead is permanently corrugated; somehow he looks permanently tried and old. He screens his face constantly with his hands and is otherwise completely immobile. She tries to force the nipple inside his mouth, but he withdraws immediately and cries, covering his face and his mouth even more. She tries again two or three times and again he cries, withdraws and covers his face. She tries with the other breast. He leans his face against it. She says, 'He is not sucking ... he is leaning against it ... it's not a pillow, you know!' Then she gives up trying and says, 'probably it is useless ...' and she sits him in between her legs. Again he covers his eyes with his hands with a painful expression on his face, as if noise, light, movement etc., all were too much for him. It is time for me to go and Mrs C says that she will phone me when she is back home. Celia practically remains unmentioned till the end.

I meet her the following time when I go and visit Mrs C at home. Mrs C opens the door with Celia in her arms and I am immediately struck by Celia's intense and interested stare. Her eyes are wide open and she looks around. She looks much more lively and pretty than Mark. Mrs C says, 'He is still asleep ... it takes him a very long time to wake up ... he goes on yawning and stretching and turning for hours ... waking is a painful process for him ... she is different ... she is much more alert ... she moves a lot and likes looking around ... he always looks sad and forlorn ... he just wants to be in my arms ... but I don't think he can discriminate ... I don't think he realizes it's me or anybody else's arms ... provided he can bury his head inside someone's chest he is all right ...'

Mark's painful difficulty in waking to this world continued during the following months. As his mother often said 'He hates waking up ... he sleeps for hours on end ... 36 hours a day ... he likes to be inside ... in his cot or in my arms ... all wrapped and covered up ... while she is just the opposite ... she hates being inside ... she can't even stand the walls of her pram as they don't allow her to have a good look at the outside ... he would like to sleep all day ... even light disturbs him ... going out of the house, as you can imagine is, an ordeal ... the light disturbs him and the noise upsets him ...' Therefore she kept the children inside. She also bought for him a kind of pouch which she called his 'marsupium' and went around carrying him in the house often saying, 'I am his pillow ...' After returning home Mrs C had given up breast-feeding him (with Celia she had never tried) and now Mark ate quite well and continued to put on weight. His feed, though, had a monotonous, quasi-hypnotic quality. He clung to the bottle keeping his eyes out of focus or else completely closed and sucked for hours on end always making the same slow and monotonous sound and his mother used to say, 'when I feed him, I fall asleep ...'

Mrs C, though, seemed to like him much better than Celia whom she found too alert and demanding (though at least in my presence she never made any demand). Mrs C endured silently and with missionary patience the hardships of looking after twins. Her mother and mother-in-law were helping her with her spotless house and Celia was picked up almost exclusively by them. I think that the fact that Celia was a female also added a lot to her mother's rather distant behaviour towards her. Mrs C's behaviour always changed whenever any man was around

and all her attention was directed immediately towards him, while Celia and I were completely left out. Celia, in spite of all this, seemed to show little or no jealousy towards her brother and she often looked smilingly at him. As time passed she began trying to touch him, as if searching for a contact with him. But he always reacted by turning away, or else, as Mrs C said, 'he doesn't discriminate ... she touches him ... and he licks her hand ... he probably thinks it's his hand ...'

After the first 3 months Mark began opening his eyes a bit more, but his stare was always blank and out of focus and his expression always had the same sad and pained quality. His mother now told me how Mark could not stand any strong emotion: 'whenever he laughs ... or something excites him ... he vomits ...' but she didn't seem concerned about this. Mark, in fact, with his dead personality seemed to fit in well with the rest of the household, much more than his livelier sister. Mrs C seemed more and more devoid of life. Her house, in its spotless tidiness and with its dark and heavy furniture, looked gloomy and totally uninhabited. The people who came to the house were either belonging to her numerous and closely linked family or to her equally closed religious circle. She seemed afraid and disturbed by anything else. All her liveliness and repressed excitement seemed to be projected on to Celia, whom she often called 'a little whore' just because she smiled at people and liked looking outside. She also attributed to her an enormous interest in her brother's penis. To me she seemed more interested in his face. Mrs C in fact almost lived confined to her house.

She once told me that she had never ventured as far as Milan, though the little town where she lived was only a few miles away from it. The big town, with all its novelties, stimulations and perhaps temptations was probably too much for her, something that she could not take in. When the summer approached, Mrs C also gave up making any project about possible holidays and preferred to spend the summer at home. Her husband appeared on the scene less and less and took up more and more work. His choice, though, fell on geriatric hospitals and old people's homes. He envied his younger brother who seemed to be disapproved of by everyone for having numerous affairs and acting like a Don Juan, but he seemed totally incapable of even thinking of living a less dead life. As he said, one day, pointing to his wife, 'I am stuck forever with that!'

Celia somehow seemed to be out of place with the rest of her family, though gradually I had the impression that her liveliness became rather shallow in its quality. When 8 months old she began to stand and to walk. Mark was much slower in his motor development, though he was still considerably stronger than her. Celia often approached him, but almost inevitably he pushed her away and later often even knocked her out.

When they were one year old Celia was interested in moving from room to room and touching and exploring new things and new toys, while Mark (though by now he could walk) mostly sat on his mother's lap and, as she said, 'He always stubbornly holds on to the same toy ... and to me ... but I am just like his pillow ... if I am not there he immediately finds another one ...'

Case 2 – DZ twins (1 male, 1 female)

I met Mrs D, a woman in her late twenties, a few days before the first ultrasonographic session, as she had asked the obstetricians to meet me in order to receive some detailed explanation about our research. She came to the appointment dressed and made up in a rather unfashionable manner that seemed to indicate more of a humble social origin than the quasi-ideological statement which was Mrs C's case. Mrs D, with her short light blue coat, her long ear-rings, her small patent bag and her pointed high-heeled shoes, conveyed a totally different impression from the dull shyness of Mrs C. One was immediately conquered by her warm, open smile, by her bright and tender big blue eyes and by the intelligence and directness of her remarks. First of all she wanted to be sure that the ultrasounds were not going to be dangerous for the children and then seemed very interested in my research, as she said, 'Babies are all different ... you can see it from the start ... I don't see why foetuses shouldn't be different too ... and twins ... even with identical twins, I am sure there are some differences ... we all have different selves ...'

She was very relieved when I told her I was going to visit her at her home, once the children were born. 'It is so much better for me ... I am sure I will be pretty busy with two ... and this is also the first time for me ...' Then she told me how she had been married for four years and 'tasted a bit of freedom' before deciding to have children. She and her husband loved travelling and had visited many countries in Europe, 'always with another couple of friends and our motorbike ... you know we have limited means ... but it was such fun travelling and seeing new countries and meeting new people ... but now I am going to be 30 soon ... and they say that it is better to have children before then ... so we decided to settle ... we had planned to have two children ... so here we are ... this will be enough now ... we couldn't believe it when they told us we were expecting twins ... at first we were shocked ... but then we were actually pleased ... perhaps we were also a bit nervous ... and we laughed and laughed ...'

Mrs D came back the following week for the first ultrasonographic observation. She was 20 weeks pregnant and was on her own. She seemed very pleased to see me and seemed very relieved to know that the children (we could already tell their sex) seemed to be growing well, though one, the boy, was certainly smaller than the girl. She participated throughout the observation with keen interest and with intelligent remarks. The little boy (Luke) seemed much more active than the girl. He kept turning and kicking and changing position and stretching his leg against the uterine wall, showing none of the desperate restlessness that had characterized all of Mark's observations. As his mother remarked, 'Oh, my God! ... look at him ... he is so small and he seems already fed up with being in there ...' He conveyed the same impression to me and I wrote in my notes, 'Watching him is more like watching a few months old baby or even a little adult ... one almost forgets he is a foetus ... he seems to have a strong and interesting personality ...'

From time to time he would interrupt his motor activities and seemed to turn his attention towards his sister. He reached out with his hands and through the dividing membrane he touched her face gently, and when she responded by turning her face towards him, he engaged with her for a while in a gentle, stroking, cheek-to-cheek motion. From then on they were nicknamed by us 'the kind twins'. His sister, Alicia, seemed much more sluggish than him. Most of the time she seemed asleep, or else moved her head and her hands slowly, almost imperceptibly, but each time responded to her brother's gentle stimulation and once he went back to his turning, stretching etc. she seemed to plunge back into her state of passivity and/or sleep.

During the following observations, Luke continued to be active and Alicia rather passive. He also continued to seek a gentle contact with his sister from time to time, very much in the same way we had observed the first time, first reaching out for her face and then engaging in a mutual face-to-face stroking. Mr D was also present from the second observation. Rather shy and reserved and also apparently from a humble background, he was very gentle and loving towards his more exuberant wife. He was also very interested in the children and made very intelligent and sensitive remarks. He also noted Luke's 'maturity' and as the children's volume increased he became more and more worried that Luke in particular might be feeling claustrophobic. 'Poor thing ... he looks so constricted in there ... he seems to be wanting to get out ...'

A few days later Mrs D felt some contractions. She was given some treatment and was told to stay in bed for a while. When she came back for the following observations she seemed rather anxious and was greatly reassured by the fact that all now seemed to be going well. The stroking contacts between the two children were particularly evident on that day and Mrs D commented, 'they seem to cuddle up together ... look how he strokes her ...' Her husband was also struck by their contact, and while observing them posed some very important metaphysical questions in his simple, but intelligent way, 'I am quite convinced that they know there is another person in there ... that they feel boundaries ... and have a sense of being themselves ... but other people perhaps could argue that she is not aware that his movement comes from outside herself ... or perhaps that they are too self-centred and absorbed to realize the existence of something or someone outside themselves ... though these images are pretty convincing ...' Later he added, 'of course I cannot prove it ... but they seem to me to be

already two very separate beings ... each with its own clear identity ...'

On the following observation Luke was found to have grown very little since the last time and Mrs D's blood pressure was up slightly. She seemed rather anxious on that day and her husband seemed very concerned about her. He was silent and kept stroking his wife's hair and face gently while holding her hand. The behaviour of the children seemed pretty much unchanged and we could observe a lot of head-to-head contact. A few days later Mrs D was taken into hospital as her blood pressure was found still to be high. Soon after, she began to feel labour pains and the children were born rather quickly.

When I went to visit her in hospital the following day, Mrs D seemed very pleased to see me and told me about the delivery saying, 'He came out first ... then she came out too ... their difference of weight is very noticeable ... he is all skinny and bony and looks like a small bird ... and their character, you know ... just like we had seen inside ... he is very lively and alert ... you remember how he used to move and play all the time ... she is completely different ... she is very calm ...'

Later on her husband and her father also came in. She introduced her father to me. He looked like a farm-worker, with big rustic hands and thick leathery skin wrinkled by the wind and the sun. He spoke with a marked southern accent and soon made a rustic comment saying, 'we will need a cow and a goat and plenty of grass to feed them ...' I was later to know him as a very gentle man who came in every day to bring his daughter all the shopping, the newspapers, and give her a lot of help. Mr D also seemed pleased to see me and confirmed that they were, 'just like in the womb ... he is much more active and alert ...' We could only glance at them through the screen of the nursery. Mrs D told me that she was hoping to go home soon. 'They told me that I could have already gone home with one, with Alicia, leaving Luke here ... but I couldn't bear the thought of leaving him here all alone ...' Then she told me that she was very relieved that they were both well, 'They breathe ... eat ... and digest well ... I was so scared ... I was really anxious when I was pregnant ... I worried about them all the time ...'

The following week Mrs D was still in hospital. She told me again that they had suggested she go home with Alicia, 'but I refused ... I couldn't bear the thought of leaving him behind all alone ...' While I was there she was trying to feed Luke (she was using a bottle, filled with her milk). He looked really tiny and had enormous blue eyes. He looked very alert and, though certainly not in size, much older than his age. His stare and expression had a peculiar intensity and somehow also dignity, like someone not wanting to be pitied or treated with special care, but as a persona. Mrs D told me that she took turns with the nurses when feeding them. 'I don't want to be unfair ... so once it's him ... and once it's her ...' She also told me how she had always tried to be near them. 'When he was in the incubator ... I went near them ... I touched them and I spoke to them ...'

In the following few months when I visited Mrs D at home I rarely saw the children as they were mostly asleep when I came and I had the impression that Mrs D also had a particular need to have me there for herself. She had decided to give up work until they were old enough to go to nursery school and she told me that she found the isolation (not from her family: they were all there to help) and the constant demands from the children rather heavy to bear, though she was also very pleased to be with them. Each time I visited her she told me about her family and her life, while she offered me coffee and quite a few bottles of delicious olive oil from her little village. She wanted also to know about me, my children, my family and my work etc. But far from feeling intruded upon, I found her warmth and her spontaneity as well as generosity quite touching. Her life had been hard, but Mrs D spoke about it with dignity and seemed always to have faced her difficulties with great courage and faith. Born in a small poor village in southern Italy and being the eldest of six children, she had helped her mother in rearing them, while her father was away in Germany trying to earn a living for them. 'We all lived together in the same room ... even my small flat now looks like a palace to me ...' When she was 14 her father lost his job as he fell ill and they decided to try their fortune in the North, in Milan. She had to start working at 14 and still remembered the harsh impact of Milan and its

sophisticated people teasing her for her accent and her clothes. 'But now it is different ... I am older now ... then at 16 I met my husband and it made all the difference ... he is loving and kind ... and all that didn't matter any more ...'

Traces of her husband could be seen everywhere in the house, as apparently as soon as he came in, he built some new toys for the children and spent hours playing and talking to them. The children were far from being absent from Mrs D's conversation; actually they were the centre of it and each time Mrs D told me how they were getting on. As with many young mothers she received advice from practically everybody, but she seemed to know intuitively what was good for them. 'The doctor told me to keep their room dark as light might upset them ... but this seems nonsense to me: they are not still inside! They have to get used gradually to this world ... they need to learn to distinguish between day and night ... he also told me: not too many sounds ... but of course they hear our voices ... they have to get used to people ... they actually like sounds and respond to them ... my husband is very fond of classical music ... so we put an amplifier in their room and they seem to love it!'

From the little I saw of the children at the time, they seemed in fact really to love life, though each in their own particular way. Luke was remarkably alert, he looked around with great interest, he smiled and even moved his lips as if wanting to utter some words while making some sounds. Alicia seemed much more babyish and cuddly and on the whole less interested and aware of her surroundings. As Mrs D said, 'He is much more intelligent ... he realizes immediately when I pick him up ... he is delighted ... he likes to interact ... I noticed that he even makes some sounds ... I couldn't believe it ... at such a young age ... Alicia is different ... she is more of a baby ... she likes to eat a lot ... she just seems very concentrated on her mouth ... she is less bright than him ...' This was also my impression: with Alicia it was probably not so much a problem of not accepting (as it had been for instance with Mark) living in the outside, but more a problem of intelligence. She was certainly happy and content, but basically much less bright than her brother.

Then Mrs D went on holiday for two months; the heat was rather unbearable that year and her mother-in-law had offered her her small house on the lake. When I saw them again Alicia and Luke were about 6 months old. Alicia now appeared to be a contented and rather placid child who smiled a lot, but did little. As Mrs D said, 'Physically she is still much bigger than him ... but he is certainly much more alert ... but we knew that already from the womb, didn't we? He was much more alive, he moved and changed position a lot ... he has always been smaller, but more lively ...' But certainly Mrs D didn't use Alicia's less bright disposition against her. 'She is much more gentle than him ... sometimes I wonder if I prefer one or the other ... sometimes I think one ... sometimes I think the other ... she seems more gentle ... more unprotected ... probably I have a soft spot for her ... Luke knows what he wants ... and he attracts everybody's liking ... my husband probably has a soft spot for him ...'

It was around this time that I also began to watch some social interaction between the two. 'Now they really look at each other ... they really interact ... sometimes he is jealous of her ... but mostly he is not ... usually he starts the contact, and touches and strokes her ... and she smiles ...'

During the following months, Luke began to expand his activities widely. He was interested in everything and particularly in rather 'adult' activities such as playing the piano and looking at pictures in books. He also continued to be very sociable and began very soon to utter a few words. As his mother said, 'He's always wanted to grow ... sometimes one forgets how small he is ... I am reminded of it each time I give him a bath and he still looks so small and frail ... but he always looks at you in an adult way ...' Alicia was mostly engaged in rather monotonous and repetitive activities and though she smiled a lot, she began speaking much later than him. She also walked later. As her mother said, 'she is always a couple of months behind ...'

At one year of age they could walk and were beginning to talk and took a great delight in playing with each other. On the day of their birthday Mrs D told me, 'I hope I have not made many mistakes with them ... I am sure I have made some ... perhaps I spoilt them a bit ... though I don't think so ... how can one with two? It is incredible how time passes ... you

remember ... we used to call them the kind twins ... I think that is still true today ... they are kind with each other ... sometimes perhaps he may scratch her ... but it is usually by mistake ... they touch each other to express their fondness ...' By that time their favourite game had become hiding each on one side of the curtain and using it a bit like a dividing membrane. Then Luke put forward his hand through the curtain and Alicia reached out with her head and their mutual stroking began, accompanied by gurgles and smiles.

CONCLUDING REMARKS

For reasons of space my report of these observations can only be incomplete, but I hope that some conclusions, or perhaps better, some impressions could be derived from them.

Leaving aside, in this paper, MZ twins and further and more complex questions relating to them, how many tentative answers can now be given to the original questions I had in mind before starting this research?

Certainly, as for single foetuses, individuality seems to be present from the early stages in twins too and the fact of sharing the womb during pregnancy doesn't seem to affect the basic temperament of each individual child much, whilst it does probably affect their prenatal experiences.

These observations seem to suggest a rather cautious approach towards the question of maternal influences on the foetus, in terms of fantasy or emotional life. Not that what a mother thinks or feels during pregnancy is irrelevant for the foetus, but perhaps it is not so relevant as to determine its future mental outcome. Or at least matters are not so simple as to be reduced to one linear and simple equation, and the individual personality of the foetus should always be accounted for. While in both these observations maternal attitudes can be seen to be of extreme importance in fostering or thwarting innate tendencies after birth, these same attitudes have a more doubtful effect on the basic personality of each twin before birth. Both Celia and Mark or Alicia and Luke shared the same mother, yet they were very different from the start. Both mothers were very anxious during pregnancy, or at least at some point during it. Mrs C was even on the verge of a severe psychotic breakdown for a while. Yet her children continued to act pretty much as before: Celia still seemed interested in life, while Mark's intolerance for it seemed to date further back.

Together with the question of individuality goes the question of psychological birth as the propensity to it seems again highly individual. Perhaps in the case of the foetus one should talk about psychological awareness, as the term psychological birth, with its temporal connotation, could be restrictive and misleading. Some children, such as Luke, give the impression of being psychologically aware long before birth: some others, like Mark, seem to refuse to be psychologically born long after the natural caesura of birth. From what I have been able to observe, such caesura (at least in cases with uncomplicated deliveries) does not seem to be a turning point that sets everything in motion: regression and sanity alike. Birth certainly represents a major environmental change and it represents also the transition from an environment in which the foetus goes through stages of development and maturation with incredible speed to another environment in which maturation is a slowly enfolding process.

Some babies seem absolutely mature for it and for them birth seems to be a natural and even welcome event. Others seem to dread it, as perhaps they just dread any form of life. One could postulate that, 'The biological birth of the human infant and the psychological birth of the individual are not coincident in time ...' (**Mahler et al. 1975**), but perhaps in a different sense from what was meant by Mahler, as psychological birth seems again to be a highly individual matter. According to the basic temperament of the child and to external circumstances of the pre- and post-natal period, psychological birth can take place at various stages of development. In some cases even before birth, in other cases not even before death. External circumstances (including a traumatic pregnancy or birth), could later produce a regression or render impossible from the start a disclosure to this world. I have discussed some of these points in two previous works (**Piontelli, 1986**), (**1988**).

The presence of another twin doesn't seem *per se* to be an element precipitating a more precocious

awareness: Mark continues to fight back from the awareness of his sister's kicks while burying his head deep inside his placenta shelter. Luke, on the contrary, seems to find pleasure in his sister's company as he found pleasure in exploring the limits of the womb. Certainly one thing that can be noted is how a pattern of relating is established early within each couple of twins, non-relating, as with Mark, also being a form of reacting and hence relating.

Though I have heard many mothers say, 'he (or she) is more important to him than I am ... I only come second for them', I cannot say that this was so for all the couples I observed. Only one couple of MZ twins seemed to be locked in an exclusive relationship of total closure to the outside world, but their post-natal environment had also played an important role in fostering their pre-natal tendencies. Certainly a twin is a twin and for good or for bad the other co-twin seems to represent always a landmark in his life. During the observations this perhaps becomes particularly evident in enlarged situations such as the beginning of nursery school: even those twins who seemed to hate each other and could only fight when at home found an immediate cohesion when confronted with an unfamiliar circle of people.

One would need to observe many couples before drawing more general conclusions and many more impressions and evidence could be derived from the study of twins. For the moment, as Mr D said, 'of course I cannot prove it ... though these images are pretty convincing ...' This is the dilemma and the problem with infant observation. But I hope that I have sounded at least sufficiently convincing in my descriptions to stimulate enough interest in other people to continue this line of research until one could really 'prove it' with greater conviction.

SUMMARY

This paper describes research on twins. Several couples have been observed pre-natally with the aid of ultrasound and subsequently with the method of infant observation as described by Bick.

First I mention the mythology surrounding twins and the classical literature on twin studies. A description of the research follows and two examples are given to illustrate how early markers of individual temperament can already be observed in the womb. Each twin seems to have its own temperament from the very early stages and each couple seems to establish a characteristic pattern of behaviour very early on. Both temperament and behaviour of the couple seem to continue in the same direction after birth.

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