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The graphical representation of the self-image in early development: twins and singletons in comparison

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ABSTRACT

The construction of self, a fundamental process for development. Twins, as they grow together, may encounter greater difficulties in individuation process. The present study aims to investigate the construction of the image of the self and of the self with its own twin/sibling through the drawing of the human figure and to highlight any differences in these representations between monozygotic twins, dizygotic twins, and non-twins. A sample of 105 children aged between 4 and 6 years participated in the research. From the analysis of the drawings of the self and of the self with the sibling, differences in self-representation and representation with the sibling have emerged and can be understood in the light of the separation and individuation process that characterizes the development of the self-image. In particular, greater tendencies have emerged for monozygotic twins to represent themselves differently from the co-twin and for dizygotic twins to show identical figures.

Twin pregnancies and births have been an increasing phenomenon in recent decades. In Italy, twin births in 2013 were 8719, corresponding to 1.7% of total births recorded in the year (Basili, Di Rosa, Montorio, & Tamburini, 2015). Over time, the psychological literature has shown interest in issues related to the condition of twins, studying both the specific condition in which twin pairs grow and the process of constructing and developing the self (Pearlman, 2001). In recent years, the research on twins and their relationships with caregivers has described the peculiarities of this condition and of family relationships in the presence of twin children (Prino et al., 2016).

Compared to singleton children, the process of organization of the self in twins is more complex because of the particular bond that lies between them (Bacon, 2006; Tinglof, 1998). At a young age, children perceive themselves as part of their caregivers, but as they grow, they differ from one another and build their sense of self and their identity. Twins, on the other hand, have to separate themselves not only from the adult caregiver, but also from their co-twin. The self-image is, for each individual, a visual experience and a very deep emotional past. The construction of self, as it relates to the construction of the other separate from oneself, implies a proper separation–individuation process (Cetin, Akdemir, & Akgul, 2012; Mahler, Pine, & Bergman, 1975) that may be more complex in twins (Klein, 2002; Watzlawik, 2009). The construction of the self-image for twins is inevitably marked by the detachment and the distinction from their other twin: detachment refers to the perception of their space and to the awareness of having a body with ‘thickness’; the distinction refers, instead, to the awareness of their individuality with precise characteristics. Without such a psychic path, it is not possible to conceive of oneself as a single individual endowed with an...
autonomous identity (Stewart, 2003). For a proper development of personality in a twin, the feeling of equality with the co-twin must not interfere with the construction of an integrated personal identity (Åkerman & Suurvee, 2003). The relationship between twins is very special, different, and much more intense than the relationship between two siblings of different ages. In the early years of life, twins seek to separate their social and interpersonal identities and are a source of security for each other. To be always and continuously together can favour an excessively strong bond (Justice & Utesch, 1994; Pulkkinen, Vaalamo, Hietala, Kaprio, & Rose, 2003). Tinglof (1998) observes how often twins can feel guilt in the process of separation–individuation from the co-twin due to the need to separate themselves from someone they really love. For monozygotic twins, the addition of physical similarity further hampers the construction of the individual image (Valente Torre, 1999). Monozygotic twins, in fact, are a unique population in which to investigate self-recognition (McAdams et al., 2017) and the process of building identity given their physical resemblance. For example, some research emphasized the great difficulties encountered by monozygotic twins in the self-identification process since they have a stronger sense of identity as a couple than as individuals (Watzlawik, 2009).

Therefore, the separation–individuation process in twins is complex, especially due to their perceived closeness to each other. They have difficulty accepting as personal the space that their body occupies, having always shared the same environment since the maternal womb. Consequently, it follows that twins have a different perception of the boundary of self than singletons, since each movement of their own body is concomitant to and coexistent with that of the co-twin (Åkerman & Suurvee, 2003).

Indeed, in the relationship with the parents, the exclusive relationship with the other twin is interwoven. The other twin, unlike the mother, is a mirror that not only returns an image to the child (Winnicott, 1971), but reifies it, in order to seek and find itself in the other. The relationship between twins does not present any discrepancy between the image sent to the other and the image received from the other, as is the case in the mother–child relationship; instead, because of the deep understanding between them (Valente Torre, 1999), there is a precise reflection of the image sent. This makes the relationship between twins completely unique and rich in many evolutive possibilities. In monozygotes in particular, being similar in appearance inevitably leads to sharing an image in which aspects of both are combined together (Valente Torre, 1999).

It is important to evaluate the type of perception that twins have about themselves and their relationship: whether they perceive themselves as separated or united. In the first case, it is easier to address the critical moments for the development of an individual identity. However, in the second case the bond becomes the centre around which their existences turn, revolving around each other with a twin identity (Pearlman & Ganon, 2000).

The aim of this work is to evaluate the graphical representation of self and of co-twin and, through it, the differentiation from the co-twin. The exploratory investigation was accomplished through the drawing of the human figure adapted to the specific needs of the study. Through drawing the human figure, the body image the child is building is depicted, and the phantasmal and therefore subjective past of their body is revealed (Castellazzi, 2003). The graphical representation of self and other enables us to highlight the level of homogeneity or heterogeneity ‘desired’ by the drawer compared to the other. The need to distinguish oneself from the other was considered by analysing the differences expressed in the drawings made, respectively, by monozygotic twins, dizygotic twins, and non-twin children.

**Methods**

**Participants**

The research involved 105 children attending the second and third year of pre-school in Northern Italy. The sample consists of three subgroups: monozygotic twins (34 children: 20 males and 14...
females); dizygotic twins (36 children: 19 males and 17 females); and singletons (35 children: 17 males and 18 females). As regards dizygotic twins, 58.3% are same-sex pairs. All the singletons have a brother or sister, and the 60% have a same-sex sibling. The age of the children is between 4 years and 6 years and 6 months. The average age of the entire sample is 5 years and 5 months. As for the position of the twins in the school, among the monozygotic twins, 12 pairs are in the same classroom and 5 pairs are in separate classrooms. Considering the dizygotes, there are 14 pairs in the same classroom and 4 in separate classrooms.

**Instruments**

The representation of the self and of the co-twin image was investigated through the use of drawing. Children, taken individually in a well-equipped environment with drawing materials, were first asked to paint themselves on a sheet (A4) and then to draw themselves together with their twin; in the case of singletons, the subjects were invited to draw themselves together with their brother or sister. The analysis of the drawings was accomplished with reference to graphical indicators previously identified on the basis of work done on children’s drawing by Bombi and Pinto (2000), Tambelli, Zavattini, and Mossi (1995), Castellazzi and Nannini (1992), and Di Renzo and Nastasi (1996). The indicators considered are: the position of the drawing on the sheet, the size of the representation of the self and the other, the distance between the figures, the presence of details, clothing, and the posture depicted.

**Procedures**

The children were examined individually after a period of familiarization with the experimenter. The children first performed the drawing of themselves and then performed a second drawing depicting themselves together with the sibling. The experimenter noted what was happening during the execution of the drawings, both in relation to the behaviour of the subject and in relation to the graphic elements: execution order, pauses, erasure, etc. The coding process was carried out in a standardized and systematic way. The data were coded independently by two reviewers. Reliability coefficients were satisfactory, kappa coefficients ranged from 0.84 to 0.92. Disagreements between the coders were solved by consensus. The collected data was inserted into a matrix and analysed with SPSS 24.

**Ethical considerations**

Individual informed consent to take part in the research was collected from teachers and parents, along with written consent describing the nature and objective of the study according to the ethical code of the Italian Association for Psychology (AIP). Both parents of each pupil were asked to sign the consent form to have their child participate in our study.

**Data analysis**

Initially, descriptive analyses of the variables of the drawings were conducted, and correlations with the age of the children were investigated. Subsequently, a comparison was made between the three subgroups of participants (singletons, dizygotic twins, and monozygotic twins) and between the two drawings made by each child. Depending on the typology of the considered variable, Spearman-correlations and chi-square tests were used. Finally, some example drawings are given to illustrate specific emerging aspects of the data analysis.

**Results**

No gender differences were detected; thus the sex variable is not taken into account.
A first analysis of the drawings presents in 60% of them a good correspondence between the depicted elements and the actual features of the physical person (hair colour, eye colour, height, and detail of clothing), that is, a representation of self conforming to reality. Moreover, such compliance also appears to increase with the age of the children (first drawing: \( \rho = .393; p < .001 \); second drawing: \( \rho = .324; p < .001 \)).

The comparison between the three subgroups of the sample shows, however, a different approach to self-representation in monozygotic twins; indeed, with six-year-old children, there is a slight decrease in the correspondence between representation of the graphic image with the real one. Such a figure can be read in the light of the need for monozygotes to possess their own distinctive traits, which may sometimes lead to a self-representation more distant from reality.

From the analysis of the two drawings, no differences emerge in the self-representation, that is, the two representations have the same characteristic elements (\( \chi^2 = 80.95; \text{df} = 4; p < .001 \)). The three subgroups express the same graphical behaviour.

Getting to the heart of our research, we proceed by observing the representation of self and the other in the second drawing; a strong correlation was found (\( \rho = .857; p < .001 \)) between the correspondence with reality of both the subject and their co-twin. It can be assumed that when children have a good awareness of their self-image, they develop the ability to compare themselves with the twin or sibling, succeeding in detecting the peculiarities of each and representing them graphically.

As to the position where the subjects depict themselves, a statistically significant association can be found between the first and the second drawing (\( \chi^2 = 76.94; \text{df} = 4; p < .001 \)), but it is possible to discern small differences between subgroups. Position variations in the two drawings are more frequent among singletons than among twins. Since the placement on the sheet refers to the position the children feel to occupy in the affective environment, it can be assumed that twins are more aware of their role, which remains stable both with regard to their twin and on their own.

A correlation between the two drawings emerged regarding the size of the self in the considered sample (\( \rho = .650; p < .001 \)). Concerning the omitted elements, we observed a correlation between the two drawings for both singletons and twins (\( \rho = .692; p < .001 \)). This data confirms a good stability of the self-image, which does not change by thinking of themselves alone or together with the co-twin or sibling.

Moreover, we noticed a strong correlation with regard to the size of the depictions of self and of the sibling or co-twin (\( \rho = .800; p < .001 \)); this suggests that the process of building the self-image is due to the differentiation of the other from oneself and thus leads to the recognition and attribution of one’s identity to the other.

With the aim of investigating any differences between twins and singletons, a tendency to render uniform or differentiate the figures in the second drawing has been examined (Table 1). The difference between twins and non-twins is statistically significant (\( \chi^2 = 17.16; \text{df} = 3; p < .001 \)).

Singletons are more inclined to keep to the actual features of themselves and their sibling. Monozygotic twins, on the other hand, try to differentiate the figures in an extreme way, to distinguish themselves from the co-twin; when they cannot differentiate, they even distort reality by drawing figures with totally opposite characteristics to reality (dimensions and proportions of figures inconsistent with reality, or a net change of personal physical characteristics such as different hair or

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Table 1. Twins and singletons and tendency to uniformity or differentiation between the figures.
Among the attempts to differentiate oneself from the co-twin made by monozygotic twins is Marta’s second drawing (Figure 1). The figures are represented with physical characteristics corresponding to reality, but the little girl seeks an element of distinction for herself, in this case the crown on her head; while drawing, Marta claims that this element is indispensable to recognizing herself and differentiating her from her sister.

Some children use colour as a distinctive trait, leaving one figure colourless – usually that of the co-twin (Figure 2) – or by not colouring the face to the co-twin (Figure 3).

A behaviour similar to the previous one is to deliberately change the physical characteristics of only one of the two figures to facilitate the distinction (Figure 4). The twins here are both blonde.

**Figure 1.** Marta, monozygotic twin, 5 years and 6 months, second drawing.

**Figure 2.** Martina, monozygotic twin, 5 years and 4 months, second drawing.
with light-coloured eyes, but are drawn differently just in order not to look the same. Other monozygotic twins decide to change the physical characteristics of one or both figures, as in Figure 5.

However, dizygotic twins show an unexpected tendency to render the figures uniformly. Such an attitude may be due to the fact that, being physically different, adults in general and parents in particular tend to make them as similar as possible: interacting with them in the same way, buying them the same clothes, giving them the same toys, and getting them to play the same sports and play activities, as evidenced by the data provided by teachers and conversations with the children. Twins, living in a context that tends to make them resemble each other as much as possible, grow up having a self-image joined to the co-twin, and as time passes, they begin to feel the same and thus draw themselves by rendering the two figures uniformly.

In Figures 6 and 7, the shapes appear almost identical to such an extent that the authors cannot confidently attribute a figure to themselves.

Figures 8 and 9 are carried out by two dizygotic twins belonging to the same twin pair and in both representations the process of making the images uniform emerges.

In Figure 10 there is a clear attempt to make the images uniform: the shapes are also represented with the same colour. Finally, in Figure 11, the desire for uniformity is so strong that although the two twins are of opposite sexes, that characteristic is not visible from the drawing.
Figure 5. Claudio, monozygotic twin, 5 years and 6 months, second drawing.

Figure 6. Patrizia, dizygotic twin, 5 years and 5 months, second drawing.

Figure 7. Dario, dizygotic twin, 6 years old, second drawing.
Figure 8. Laura, dizygotic twin, 6 years and 4 months, second drawing.

Figure 9. Marika, dizygotic twin, 6 years and 4 months, second drawing.

Figure 10. Walter, dizygotic twin, 6 years, second drawing.
It was also considered to include twins from the same or separate classrooms to investigate whether this variable affects the children’s identity building process. The literature emphasizes that special attention should be paid to twins when they enter school to assess whether to put them in the same or different classrooms (Hay & Preedy, 2006). The data analysis shows a statistically significant association ($\chi^2 = 18.51; \text{df} = 6; p < .01$) between placement in the same classroom and uniformity of the figures. Twins who are placed together generally tend to render uniform figures. Placement in the same classroom seems to have a negative impact on building the identity of the individual, as it strengthens the identity of the pair at the expense of the individual. In everyday life at school, indeed, twins are often confused with each other, likened, compared, and called by collective names (e.g. ‘geme’, from the Italian word for twins ‘gemelli’). When twins live together all the time and are considered exclusively as members of a pair, they themselves will internalize a pair image and feel identical.

As a last aspect, it is worth highlighting a cross-reference mark of duplication in the drawings of some twin children when inserting other graphic elements. In many drawings of themselves or with the co-twin made by twin children, there are objects (animals, natural elements, etc.) repeated twice. It is as if the subject expresses their twin-heartedness even among the elements of the external environment. Some drawings even have a perfectly symmetrical setting (Figure 12). It should be

Figure 11. Alessio, dizygotic twin, 6 years and 2 months, second drawing.

Figure 12. Massimo, monozygotic twin, 6 years and 1 month, first drawing.
noted that this graphical behaviour is present only in pairs consisting of mirror twins (one left-handed and the other right-handed), but not all mirror pairs show a mirror depiction in the drawing.

**Conclusions**

Significant differences in representation of the self and of the self with the twin between the subgroups considered have emerged from the research. If in reality the most important physical differences are among siblings and dizygotic twins, while they are small among monozygotic twins, this situation appears to be in conflict with the graphical representations made by the children. In fact, the dizygotic twins and singletons who participated in the research produced representations much more similar to themselves and the other whereas the monozygotic twins differentiated themselves more from their co-twins.

However, in the subgroup of dizygotes, there was a greater tendency to make the figures of themselves and their twins similar, extending the similarities not only to the figures but also to the landscape in which they are depicted. This fact emphasizes that graphic activity is not a copy of reality: the children do not represent reality as they see it or know it, but represent an emotional image, especially when it comes to depicting themselves (Quaglia, Longobardi, Iotti, & Prino, 2015). The graphical behaviour of greater differentiation of the figures recognizable in monozygotic twins may be a reflection of the strong identification need that characterizes them and which is fundamental in the process of growth and construction of self (Greven, Harlaar, Kovas, Chamorro-Premuzic, & Plomin, 2009). Although the data is insufficient and merely indicative, it suggests that besides the imitation (Gastaldi, Longobardi, Pasta, & Prino, 2017) and identification processes – essential to personality formation – there is also a different tendency, that is, the propensity to differentiate. This propensity can be highlighted considering the different behaviour that emerged between dizygotic and monozygotic twins. The dizygotic twins depict themselves as very similar to their twins and extend similar resemblance even to the landscape and to the background behind the two figures, while monozygotes draw themselves more differently from their twins. Between these two tendencies there could, at some level of conformity and homogeneity, be a response inclined to distinction and differentiation. However, further research is needed to support this hypothesis and, in particular, it would be important to investigate the attitudes of parents, who, together with the children themselves, play a key role in the construction and development of twin identity (Bacon, 2006). Parents, in fact, sometimes tend to consider twins as an indistinct unity in which one is the perfect copy of the other, while at other times they tend to emphasize the differences. Since the self-image is tied to what others refer to, the children – who grow up living in a context of being made uniform – end up interiorizing this and, being reflected in the gaze of those who see them identical (or would like them to be identical), come to feel identical (Beaver, Boutwell, Barnes, Schwartz, & Connolly, 2014). Twins, in fact, need to be treated as individuals, not as a twin pair, to be able to progress optimally in the development of the self. Over-identification among twins limits their chances and ability to construct relationships other than the twin ones and their ability to separate and identify one another (Klein, 2002). To further confirm this, research has shown that twins, who tend to represent themselves in a homologous way, being put together in the same classroom are considered by others as two inseparable individuals and their identity is connected to the twin pair. It would be interesting to study this dual tendency from an evolutionary perspective, looking for resemblances and differences, taking into account different moments of the twin life cycle to indicate whether there is an age-related effect, that is, whether there are times or moments in which one of the two processes tends to prevail.

Finally, the importance of an educational action directed at twins that does not ignore the construction process of the self-image emerges. This should be a process in which physical analogies must not overcome the differences, nor the affinities of character cancel their peculiarities, in the awareness that the construction of the self oscillates between the need to identify oneself with
the other and the need to specify oneself with respect to the other (Longobardi, Gastaldi, Prino, Pasta, & Settanni, 2016).

**Disclosure statement**

No potential conflict of interest was reported by the authors.

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