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Conflicting and harmonious sibling relationships of children and adolescent siblings of children with autism spectrum disorder

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**Conflicting and harmonious sibling relationships in children  
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## Conflicting and harmonious sibling relationships in children with Autism Spectrum Disorder

### Abstract

**Background** The presence of a child with Autism Spectrum Disorder (ASD) could have a strong psychological and emotional impact on typical development (TD) siblings, with different ways of adjustment and perception of fraternal relationships. In this study we aimed to deeply investigate the experience of the TD siblings of children with ASD combining both quantitative and qualitative methodologies.

**Method** Forty-four TD siblings of children with ASD, aged from 6 to 17 years old, participated in the study. Each participant completed the Sibling Relationship Inventory that investigated warmth, rivalry and conflict in sibling relationships. Moreover, in order to thoroughly evaluate the participants' perception of their sibling relationship, they were asked to draw themselves with their sibling with ASD in a condition of harmony and conflict. The drawings were collected and coded using the well-validated Pictorial Assessment of Interpersonal Relationships. Quantitative and qualitative analyses were conducted.

**Results** In general, TD siblings showed affection for their siblings with ASD. However, males showed more conflict than females. Quantitative analyses of the drawings showed high levels of Similarity between the siblings, despite the disability. In drawings in conditions of harmony, greater Cohesion emerged and in situations of conflict greater Distancing. Content analysis of the drawings showed that the conflict is represented mainly at home and the siblings often show opposite emotions, with TD siblings experiencing negative emotions. Moreover, adolescent TD siblings displayed more annoyance, shame and embarrassment than child TD siblings.

**Conclusions** It is important to combine quantitative and qualitative tools to understand the experience of TD siblings in detail. In particular, drawing is a useful tool for providing quantitative and qualitative information, providing rich and detailed information that can be well integrated with the results coming from quantitative tools.

## Introduction

The clinical and behavioral characteristics of children and adolescents with Autism Spectrum Disorder (ASD) have implications for all family members and on family dynamics (Sivberg, 2002). The presence of a child or an adolescent with ASD could have a strong psychological and emotional impact on his/her typical development (TD) sibling, promoting different ways of adapting to and experiencing the sibling relationship (Green, 2013). Previous studies revealed that some demographic factors – such as gender and birth order – may influence TD siblings' emotional and psychological well-being and their adjustment (Tomeny, Barry, & Bader, 2014). Regarding gender differences, some studies showed that TD sisters are more involved in the care processes of the sibling with developmental disabilities, already in childhood (Cridland, Jones, Caputi, & Magee, 2015). For this reason, compared to TD brothers, in the long term, TD sisters can have an intense relationship with their sibling, characterized by positive emotions (Orsmond & Seltzer, 2000). Regarding TD individuals' perception of the relationship with their ASD sibling, many studies reported that they have both positive and negative experiences (Thomas, Reddy, & Sagar, 2015). Some studies showed a good adjustment of TD siblings characterized by psychological growth, engaging, admiration and affection as well as by conflict, rivalry, and fewer interactions (Orsmond & Seltzer, 2007). The ASD sibling can be considered a burden and create feelings of embarrassment and shame in the TD sibling (Wintgens & Hayez, 2003), specifically during adolescence (Corsano, Musetti, Guidotti, & Capelli, 2017). These mixed results are indicative of the complexity that characterizes the sibling relationships in the ASD as well as the plurality of methodologies and samples in previous studies (Meadan, Stoner, & Angell, 2010). The majority of studies involved samples of children and adolescents, without distinguishing by age, and did not allow to obtain accurate information on the different perceptions that children and adolescents have of the relationship with their ASD sibling (Thomas et al., 2015). Hastings and Petalas (2014) highlighted that there is little qualitative research, based mainly on interviews and observations, in which TD siblings provide detailed information about their personal experiences (Leedham, Thompson, & Freeth, 2020). In this regard, combining qualitative tools with quantitative ones, in the same study, as well as identifying new qualitative tools beyond interviews and observations, could allow us to deeply understand the personal perceptions and experiences of TD siblings and to further research in this field (Green, 2013; Meadan et al., 2010). According to Bombi, Pinto and Cannoni (2007), drawing is a valid qualitative method that allows children and adolescents to express and communicate their internal world. It makes it possible to investigate relational and emotional aspects such as cohesion, distancing, similarity, value,

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3 emotions and conflict, making implicit and explicit contents emerge (Pinto & Bombi, 2008). The  
4 drawing could be complementary to the quantitative method of investigation, given that it allows to  
5 provide significant elements to complete the relational and emotional framework that emerges from  
6 the use of classical verbal and observational methodologies.  
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9  
10 In order to investigate the sibling relationships by drawing, Pinto and Bombi (2008) highlighted the  
11 importance of asking the investigated siblings to make two drawings of the same relationship in two  
12 different situations: harmony versus conflict (Lecce & Pinto, 2004; Lecce, Pinto, & Primi, 2002).

13 Although drawing can be considered a valid methodology to investigate the representation of the  
14 TD-ASD sibling relationship, studies are still lacking (Saneei & Haghayegh, 2011).

15 The present exploratory study aimed to combine quantitative and qualitative approaches to obtain  
16 more detailed information on the sibling relationship of children with ASD. We propose to a)  
17 assess, by a self-report questionnaire, the presence of the typical dimensions of the sibling  
18 relationship: warmth, rivalry and conflict in the relationships with a sibling with ASD; b) deeply  
19 investigate the TD sibling perception of the specific dynamics affecting these relationships via the  
20 use of the drawing of sibling relationship.  
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23 Based on the literature, we expected to find lower levels of conflict and higher levels of closeness,  
24 affection and positive feelings in the TD sisters than TD brothers.  
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27 Regarding the age of TD siblings, we hypothesized that adolescents, based on their greater  
28 awareness of the cognitive, emotional and behavioral problems of the siblings with ASD (Corsano  
29 et al., 2017), would show lower levels of conflict and rivalry than child TD siblings (Pilowsky,  
30 Yirmiya, Doppelt, Gross-Tsur, & Shalev, 2004). Moreover, in light of the need for autonomy and  
31 distancing that emerges in adolescence (Majorano, Musetti, Brondino, & Corsano, 2015), we  
32 hypothesize that TD adolescent siblings would show in their drawings higher levels of distancing,  
33 especially in conflict situations, than child TD siblings, due to the feelings of shame and  
34 embarrassment that they may experience during quarrels and disagreements (Petalas, Hastings,  
35 Nash, Reilly, & Dowey, 2012).  
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38 In addition, we expected to find in the harmony condition drawing higher scores of cohesion and  
39 similarity than distancing both in children and adolescent TD siblings.  
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42 Finally, we aimed to conduct an exploratory investigation of the descriptive aspects of the drawings  
43 through a qualitative analysis of the content, in order to highlight emerging characteristic aspects.  
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## 48 **Method**

### 49 ***Participants***

Forty-four children and adolescents (25 females) aged between 6 and 17 ( $M_{age} = 11.34$ ;  $SD_{age} = 3.06$ ) with siblings with ASD ( $M_{age} = 8.97$ ;  $SD_{age} = 3.96$ ) participated in the study.

To be involved in the study, each TD sibling had to fulfil the following criteria: a) age between 6 and 17 years; b) the presence in the family of a sibling with ASD; c) adequate understanding and production of the Italian language; d) absence of clinical diagnoses.

### ***Instruments***

The Sibling Relationship Inventory (SRI – Stocker & McHale, 1992, Italian version by Lecce, Primi, Pinto, & De Bernart, 2005) evaluates the perception of children and young people of their behaviour and feelings towards their sibling. The questionnaire has 17 items, grouped in three scales: 1) Warmth: presence of behaviors of support, sharing and admiration between siblings; 2) Rivalry: child's perception of the affection and the attention that he/she has received from his/her parents in relation to his/her sibling; 3) Conflict: presence of episodes in which the siblings quarrel and disagree .

The Pictorial Assessment of Interpersonal Relationships (PAIR – Bombi et al., 2007) is an analytical system for collecting and coding school-aged children's and adolescent's representations of their interpersonal relationships. The participants were asked to draw her or himself with his/her sibling with ASD while “*they were doing something*” in a) a situation of harmony and b) a situation of conflict. The analysis and coding of the drawings follows a rigorous procedure of assessment of six different scales and subscales: Cohesion, Distancing, Similarity, Value, Emotions and Conflict. Two judges independently coded drawings separately (Cohen's  $K > .90$  in this study).

### ***Procedure***

After informed consent was obtained, the researcher proposes the task to the TD sibling in a quiet room, providing a material for the drawing: A4 sheet of paper, a pencil and 12 Crayons. No time limit was set.

Forty drawings are made in conditions of harmony and thirty-six in conditions of conflict. The task took about 20-25 minutes. Subsequently, Sibling Relationship Inventory was proposed. All TD siblings completed the questionnaire. Ethical approval of the study was obtained from the Research Ethics Committee in the Northern Emilia Romagna (Italy) (Protocol No. 0018261).

### **Results**

#### ***Warmth, rivalry and conflict in sibling relationship***

Descriptive statistics for the SRI scales are reported in Table 1.

Table 1

The U Mann–Whitney test revealed higher scores of Conflict in males than in females ( $U = 137$ ;  $p < .05$ ). No significant differences emerged ( $p > .05$ ) for age.

### ***Perception of harmony and conflict in the sibling relationship***

Descriptive statistics for the PAIR dimensions are reported in Table 2.

Table 2

The Wilcoxon test highlighted higher scored of Cohesion ( $z = -3.30$ ;  $p < .01$ ) and Similarity ( $z = -2.07$ ;  $p < .05$ ) in the drawings of harmony, and higher scores of Distancing in the conflict drawings ( $z = -.29$ ;  $p < .01$ ).

Most of the drawings in harmony conditions (thirty) showed a shared Emotional Climate, five unilateral and five neutral. The Conflict was absent in all the drawings.

In the conflict condition fifteen drawings showed shared Emotional Climate, ten opposite, seven unilateral and four neutral. Specifically, twenty-five drawings presented opposition, ten explicit aggression, one absence of explicit conflict.

For the drawings in condition of harmony and conflict, descriptive analysis for gender and age, for the PAIR dimensions are reported in Tables 3 and 4.

Table 3

Similarity showed the highest average scores. However, the U Mann–Whitney test did not reveal differences for gender and age ( $p > .05$ ).

Table 4

In conflict drawings, the Similarity between the figures had the highest average score.

The U Mann–Whitney test indicated that males showed a significantly higher level of Cohesion in conflict condition than females ( $U = 81$ ;  $p < .05$ ). Females showed a significant higher level of Distancing ( $U = 94.5$ ;  $p < .05$ ) than males. No differences emerged ( $p > .05$ ) for age.

### ***Content analysis of drawings***

In order to better comprehend the TD sibling's perception of their relationship with a sibling with ASD, we carried out a content analysis of the drawings, considering the following indicators: the place where the scene is represented (inside/outside the home) (*where*), the type of activity carried out (*what*), specific and shared emotions shown by the siblings (*emotions*), and, in the conflict drawings, the reasons for the conflict (*why*).

#### ***Harmony***

*Where:* In drawings of harmony, twenty-eight TD siblings portrayed themselves doing something with their ASD sibling at home. Twelve TD siblings represented themselves doing something outside, specifically in a park.

*What:* They represented many activities: playing together (Fig. 1), drawing, doing homework, dancing, listening to music, riding a bike, taking the dog out for a walk, doing the cuddling.

Fig. 1

In many drawings, TD siblings represented some moments of great cohesion, such as a hug during a reconciliation. In these drawings, it can be seen proximity, mutual approach and direction of the gaze (Fig. 2).

Fig. 2

*Emotions:* In almost all the drawings, the prevailing emotion of both figures is contentment (Fig. 3) or neutral expressions. In some drawings, however, only one sibling showed the emotion of contentment (mainly ASD sibling), the other was neutral.

Fig. 3

#### ***Conflict***

*Where:* In drawings that represented conflict situations, most TD siblings (thirty-two) drew themselves and their ASD siblings at home. Only four TD siblings drew themselves outside the house (park or restaurant).

*What and Why:* The situations of conflict depicted concern discussion about possessing objects (e.g., mobile phone, game) or discomfort caused by the sibling with ASD that disturbs the activities that the TD sibling is carrying out (e.g., studying, relaxing) (Fig. 4).



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5 Fig. 4  
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8 Many TD siblings represented themselves and their ASD sibling as separate and distant, without  
9 coordinated activities, cohesion and mutual gaze (Fig. 5).  
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13 Fig. 5  
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17 One TD sibling identified the meal as a significant occasion for conflict (Fig. 6). Colors are used  
18 only to represent food, to which the highest degree of graphic processing is reserved. The greater  
19 value attributed to the ASD sibling is evident from the great disproportion with which the siblings  
20 are represented. The ASD sibling is depicted in full figure, with some details of the body but  
21 without facial features. The TD sibling is almost completely hidden.  
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28 Fig. 6  
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31 In another drawing the meal is an occasion for conflict out of the house (Fig. 7). The TD sibling  
32 represents the family in the restaurant, emphasizing the condition of unease and embarrassment. TD  
33 sibling accompanies the drawing with the following words: *“It often happens that we go out to  
34 dinner and my brother starts shouting at the table. They all look at us and I feel so ashamed”*.  
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39 Fig. 7  
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43 *Emotions:* In numerous drawings, emotional climate is characterized by opposite emotions: one  
44 subject experienced an emotion that does not correspond to the emotion experienced by the other.  
45 The sibling who experienced negative emotions (e.g., hostility, discontent), is always the TD  
46 sibling, while the ASD sibling experiences a positive emotion of contentment (Fig. 8). We can see a  
47 sister who portrays herself as engaged in an independent activity, annoyed by the intrusiveness of  
48 her brother, who instead appears amused by the situation.  
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55 Fig. 8  
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58 In the conflict drawings there are few examples of shared emotions. In these cases, the emotions  
59 experienced are both negative, as the siblings experience discontent and hostility.  
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3 In the most drawings, the conflict is the result of an action taken by the ASD sibling. Only in a few  
4 drawings does the conflict express itself through pictorial indices of verbal aggression. Some  
5 siblings enriched the drawings with comics that add further meaning to the representation. From a  
6 graphic point of view, the type of conflict is determined by non-verbal indices, such as expression  
7 of the eyes and mouth and direction of the body.  
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11 Finally, adolescent TD siblings exhibit more feelings of discontent, embarrassment, annoyance  
12 towards the ASD sibling. Child TD siblings showed a greater alternation between feelings of  
13 annoyance and discontent and positive emotions shared with ASD siblings.  
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## 18 **Discussion**

19  
20 In line with the literature (Green, 2013; Thomas et al., 2015), our quantitative analyses showed the  
21 presence of warmth by the TD siblings, compared to the presence of dynamics characterized by  
22 rivalry and conflict. This result is significant because it highlights how the overall experience,  
23 despite the disability of siblings with ASD, is characterized by feelings of affection and warmth.  
24 This finding is also confirmed by the high scores of Similarity identified, which testify to the  
25 perception of closeness and intimacy (Bank & Kahn, 1982) toward the sibling with ASD.  
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28  
29 In line with our hypothesis about a difference between the TD brothers and the TD sisters, our data  
30 confirm that TD brothers tend to show more conflict in the relationship with their ASD sibling. This  
31 result can be interpreted considering that females are often more involved in the care of siblings  
32 with ASD and this could have positive implications on the relationship with their siblings (Cridland  
33 et al., 2015). Furthermore, this result could be explained in the light of research carried out in the  
34 absence of disabilities, which indicate a different relationship style of males compared to females,  
35 already in early childhood. Males show greater disagreements with their siblings, also characterized  
36 by physical clashes. The presence of conflict in sibling relationships can also be considered a  
37 common aspect in sibling relationships in the absence of disabilities (Lecce & Pinto, 2004).  
38 Moreover, higher levels of Cohesion emerged in conditions of harmony and higher levels of  
39 distancing in conflict conditions. This aspect is in line with the literature (Orsmond, Kuo, & Seltzer,  
40 2009), which highlights that the TD siblings show discomfort in situations of conflict with their  
41 siblings with ASD and therefore the desire to distance themselves may be present, in order to  
42 interrupt the conflict in a short time. In addition, there may be an idea that one should not argue  
43 with siblings with ASD, because a quarrel could trigger a crisis in the latter. More specifically,  
44 females seem to distance themselves more in conflict situations. We can hypothesize that sisters,  
45 since they experience a more affectionate relationship with their siblings with ASD, prefer to  
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maintain an attitude of detachment during conflicts, so as not to clash with their sibling and not to undermine the relationship.

A qualitative analysis of the drawings was conducted based on their content. The results showed that in conflict situations most of the TD siblings portrayed relationship dynamics carried out at home. Only four participants portrayed themselves with their sibling outside the house. This aspect could be attributable to the fact that during conflict situations, siblings with ASD can have strong emotional and behavioral reactions, which can make their sibling with ASD uneasy (Mascha & Boucher, 2006), therefore conflict situations are mainly enacted at home.

In harmony situations the TD sibling drew themselves at home, but also outdoors, portraying themselves while carrying out shared activities typical of the fraternal relationship.

Furthermore, an interesting result, which has not emerged from quantitative analyses, concerns the emotional climate present in the relationship between siblings. In numerous drawings concerning a conflict situation, opposite emotions emerged between siblings. In these cases, TD sibling had negative feelings of anger, annoyance or embarrassment, while his/her ASD sibling mainly showed positive emotions of contentment. From a psychodynamic point of view, it could be argued that such a split representation of the emotional connotations of the sibling relationship may be due to TD siblings' defense mechanisms (i.e., idealization) used to manage their anxiety related with ambivalence. In this vein, previous studies (McHale, Sloan, & Simeonsson, 1986) revealed that the special attention that a son or daughter with ASD receives from parents may favor idealized representations and arouse envy in the TD sibling. Future qualitative studies on conflictual domain of ASD-TD sibling relationships, would benefit from combining drawings with in-depth interviewing methods.

Finally, another interesting result concerns the age differences. Although these did not emerge from the questionnaire data, the analysis of the drawings allowed us to confirm the hypothesis according to which the TD adolescent sibling shows higher levels of distancing, annoyance, embarrassment, anger especially in conflict situations. In particular, these dynamics emerge when the ASD sibling does not respect the need for autonomy and privacy of the TD sibling, or when he or she takes possession of his or her sibling's games/materials (Majorano et al., 2015).

The study has some limitations. First of all, it is based on a small sample, that may limit the transferability of the findings. Second, we investigated the TD sibling's perceptions by using only two tools. Multidisciplinary mixed-methods studies are greatly needed to display quantitative relationships that are relevant for predicting positive outcomes complemented with in-depth qualitative information.

Despite the identified limitations, this study provided useful reflections and suggestions on the importance of using quantitative and qualitative tools, in particular drawing, in order to analyze the experience of the TD siblings, which could inform the development of tailored interventions for TD siblings who display discomfort in the relationship with their ASD sibling.

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**Table 1.** Descriptive statistics of the Sibling Relationship Inventory

	6–10 years				11–17 years			
	Males		Females		Males		Females	
	M	SD	M	SD	M	SD	M	SD
Warmth	2.10	.86	2.43	.52	2.32	.39	2.42	.85
Rivalry	1.38	1.30	1.19	.91	.98	.70	.85	.79
Conflict	1.63	.23	1.26	.50	1.46	.46	1.02	.51

**Table 2.** Descriptive statistics of PAIR dimensions

	Cohesion		Distancing		Similarity		Value	
	M	SD	M	SD	M	SD	M	SD
Condition of harmony	4.73	1.20	1.48	1.01	7.37	1.48	2.90	1.63
Condition of conflict	3.16	1.66	2.97	1.52	6.39	1.81	3.58	2.01

**Table 3.** Condition of harmony: descriptive analysis for gender and age

	6–10 years				11–17 years			
	Males		Females		Males		Females	
	M	SD	M	SD	M	SD	M	SD
Cohesion	4.67	1.15	4.77	1.01	4.50	1.68	4.92	.90
Distancing	2.00	1.00	1.69	.75	1.67	1.30	.92	.79
Similarity	7.00	1.73	7.69	1.18	6.83	1.95	7.67	1.15
Value	3.67	3.06	2.92	1.50	3.08	1.73	2.50	1.38

**Table 4.** Condition of conflict: descriptive analysis for gender and age

	6–10 years				11–17 years			
	Males		Females		Males		Females	
	M	SD	M	SD	M	SD	M	SD
Cohesion	4.67	1.53	2.67	1.44	3.83	1.53	2.44	1.74
Distancing	1.67	1.53	3.58	1.68	2.50	1.24	2.90	1.66
Similarity	6.00	.00	6.67	1.87	6.67	12.19	5.78	1.48
Value	4.33	.584	3.83	2.04	2.92	2.31	3.89	1.83

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**Figure 1.** Brother and sister at the park playing with kites (A., 10 years)



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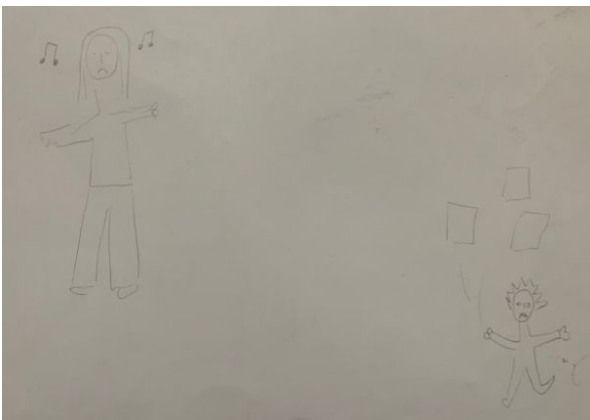
**Figure 2.** Two sisters hugging (F., 12 years)



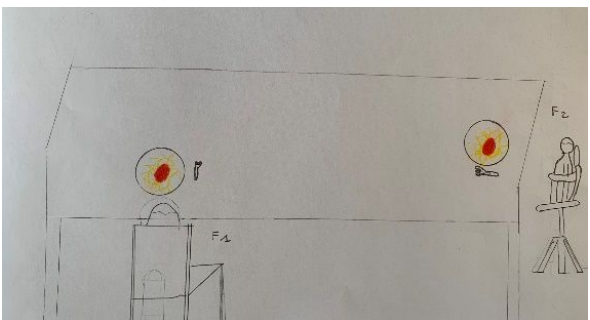
**Figure 3.** Both sisters smiling (N., 7 years)



**Figure 4.** TD sibling's rest is disturbed by her brother (A., 13 years)



**Figure 5.** Two very distant siblings (R., 9 years)

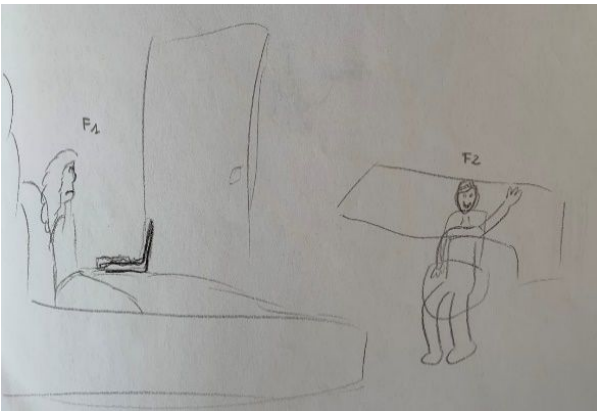


**Figure 6.** Quarreling during a meal (F., 11 years)

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**Figure 7.** The family at the restaurant (G., 13 years)



**Figure 8.** Divergent emotions between siblings (V., 13 years)

## Key Messages

- The relationships between typical development children and their siblings with Autism Spectrum Disorder are characterized by the presence of affection, warmth and perception of similarity.
- The conflict between siblings is mainly represented at home.
- In the drawings concerning a conflict situation, opposite emotions emerged between siblings. In many situations, the typical development sibling has negative feelings, while his/her sibling with Autism Spectrum Disorder mainly showed positive emotions.
- Typical development adolescent siblings show higher levels of distancing, annoyance, embarrassment and anger, especially in conflict situations.
- Drawing is a valid methodology for investigating the representation of the sibling relationship in the Autism Spectrum Disorder, because it provides detailed quantitative and qualitative information.