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Situation-sensitive use of insincerity: Pathways to communication in young children

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The present research focused on the development of children's ability to spontaneously suspend sincerity or tell a lie according to different communicative contexts. The issue of sincerity in communication is rather complex since in everyday interactions sincerity is expected, while there are specific communicative acts where sincerity is not prescribed or even banished. This study investigated how children ($N = 80$, ranging in age from 3 to 6.5 years) handled communications involving insincerity: fantasy stories, lies, and politeness situations. The results showed that the ability to deal with insincerity emerges gradually during the preschool years with an increasing trend of difficulty, from fantasy to politeness situations, and a notable amount of variability not equally distributed among the tasks.

In recent years, considerable attention has been given to the young children's development of the ability to deal with deceit. This interest is due to the fact that being deceitful or understanding a deceit implies reasoning about others' mental states and thus, this ability can be seen as an indication of the development of a theory of mind (Peskin, 1992; Woodruff & Premack, 1979).

From the perspective of the analysis of communication, a deceit is an insincere utterance. However, the issue of sincerity is more complex, since communicative acts that do not reflect reality can be performed in a number of situations without the goal of deceiving, as in the case of story-telling, pretending, using metaphors or exaggerations, being ironic, or making jokes. For instance, adults do not usually consider someone saying *'I'm dead tired'* as a liar. Politeness is yet another case of justified insincerity. Social rules require insincerity when sincerity could appear embarrassing.

If adults make clear distinctions between the previous situations, there is evidence that children treat sincerity quite differently. In particular, it has been shown that in some cases it can be difficult for children to make a distinction between lying and other forms of insincerity. For instance, children can describe as a lie an utterance referring to *a chicken as big as an elephant* (Peterson, Peterson, & Seeto, 1983), or interpret ironic statements as lies (Sullivan, Winner, & Hopfield, 1995). Moreover, the acquisition of social rules necessary to identify the situations in which a lie is considered more

acceptable than truth is rather slow (Walper & Valtin, 1992). On the other hand, even very young children are able to understand the special character of story-telling and pretending and they are not surprised if in this context speakers say things that do not correspond to reality (Harris, 2000).

In the developmental literature, these problems have been treated separately, each of them considered as a *per se* phenomenon, without the possibility of outlining a global picture of children's use of insincere communicative acts.

The present research was aimed at studying early forms of insincere communication in young children in a unified format. We devised a task where 3- to 6-year-old children were asked to produce communicative acts in situations in which different uses of insincerity were expected. The experimental protocol comprised *fantasy stories*, *lies*, *politeness situations*, and, in addition, *control stories* where sincerity was expected. This allowed us to compare children's performances between the different tasks. Our aim was to see whether children would spontaneously suspend sincerity or tell a lie in a way appropriate to the different communicative interactions.

The development of theory of mind in deceit and white lies

Different forms of insincerity in young children are usually interpreted in the light of the development of a theory of mind. In particular, the focus has been put on proper deceit, since in *deceit* individuals have to actively distort or create items of information in order to intentionally mislead others into accepting as true what they know to be false (e.g., Sodian, 1994; Vasek, 1986). It has been assumed that in the absence of the ability to manipulate false beliefs, like in the case of very young children and autistic children, individuals cannot really deceive, since they cannot understand the effects of their deception on the others' minds (e.g., Sodian & Frith, 1991; Sodian, Taylor, Harris, & Perner, 1991). However, Chandler, Fritz, and Hala (1989) found that even children as young as 2.5 years are able to produce a variety of deceptive practices aimed at instilling false beliefs in others, even if they are too young to pass classical false-belief tasks successfully. These results leave the way open for questioning the precise role played by the theory of mind ability in deceptive behaviour, given that some forms of understanding of others' perspective are involved in every form of deception.

Lying behaviours can be considered at different degrees of complexity. At the most basic level, it is possible to mislead without intending to manipulate another person's belief. For example, very young children are able to use simple forms of lies (Bok, 1978; Sodian, 1991), and 3-year-old children are capable of verbal deception when they transgress a specific rule and are asked about it (Lewis, Stanger, & Sullivan, 1989). The subsequent stages of lying behaviour require that children consider also the listener's mental states; for example, children can manipulate other people's perception of their own intention and belief, presenting credible stories, and giving the impression that they too believe the content (Leekam, 1992). Several studies have shown that the ability to deceive and to detect deceptions increases with children's age, since they become better at lying as they acquire higher level strategies (Russell, Mauthner, Sharpe, & Tidswell, 1991).

A particular kind of deceit consists of hiding one's own feelings for politeness reasons. Children's use of politeness has been studied particularly with respect to two different aspects. One issue is the use of polite utterances. In particular, most studies focus on the use of polite formulas for requests (Axia & Baroni, 1985; Bates, 1976a, 1976b; James, 1978; Gordon & Ervin-Tripp, 1984). These findings do not have a direct relationship to

the problem of flexible use of insincerity but they are interesting for our study because they show that politeness is a later acquisition in children. Children do not formulate polite requests before 4–5 years and their use increases during childhood. The prevalent hypothesis is that children have to master the social situation and to single out the conventional means that are more likely to succeed in order to phrase the adequate polite formulas.

More relevant to our work is the study of *white lies*, that is, lies uttered in situations where sincerity is considered socially inappropriate and thus insincerity is prescribed. There are a few studies on this topic, some of them using the disappointing scenario paradigm (Saarni, 1984) designed to study children's monitoring of their expressed emotions. Broomfield, Robinson, and Robinson (2002) presented experiments where 4- to 10-year-old children had to suggest a verbal response to a story character who had received a disappointing gift. The results showed the increase of insincere responses over age. Moreover, the authors found that children who gave a false answer understood the consequences of the different responses and passed a second-order false belief test. However, both results were also confirmed for many children who suggested sincere answers. Talwar and Lee (2002) asked 3- to 7-year-old children to take a picture of the experimenter, but before taking the picture the experimenter who had a red mark on his or her nose asked "Do I look okay for the picture?" Most of the children, regardless of age, told a white lie. The same authors in subsequent research suggested the possibility that such a precocious use of a white lie could have been justified by the children's intention to please the adult and to avoid possible negative reactions (Talwar, Murphy, & Lee, 2007). Using the undesirable gift paradigm with 3- to 11-year-old children, the authors found that the ability to tell white lies increased with children's age, and that such ability was already present in the youngest group, where 3- to 5-year-olds also told white lies. However, considering the whole preschool group (3- to 5-year old) without studying different age groups makes it difficult to determine if children as young as 3 already significantly used white lies that serve politeness purposes. Reddy (2008) discusses the work by Newton (1994) who studied lying in young children in two longitudinal studies. Newton found that 2- and 3-year-olds used several kinds of lies. The only category they did not use was white lies. This led Reddy to the conclusion that white lies are different from other lies.

The available studies on children's use of white lies seem to lead to the conclusion that we have to distinguish white lies from other lies. This ability is rarely acquired before school age. Young children do not spontaneously use white lies even when they understand the different consequences for the other person of being sincere or insincere. A precocious use of white lies has been found only in situations where it was not possible to discern whether the children were saying a white lie or a typical lie aimed either to please the partner or to avoid negative consequences for the speaker. Moreover, the study by Talwar *et al.* (2007) showed that there was a significant increase of the use of white lies in the coaching conditions where the children were instructed to resort to them by their parents.

The development of theory of mind in pretence and fantasy

Fantasy and pretence are also situations in which what is said does not correspond to reality. However, in these situations there is no intention to mislead the interlocutor and we can say that sincerity is suspended. The development of the acquisition of this ability shows a different trend with respect to the various forms of deceit. In particular, children

as young as 18-month-old engage in pretend play (Piaget, 1945). Leslie (1987, 1994) has maintained that in the comprehension and production of pretence, we can see the first appearance of the meta-representational ability, which is at the basis of the capacity to represent others' mental states. The existence of a precocious specialized theory of mind mechanism would be confirmed by researches, which have shown that in non-verbal tasks comprehension of pretence and false belief is verified in children under 2 years of age (Onishi & Baillargeon, 2005; Bosco, Friedman, & Leslie, 2006; Onishi, Baillargeon, & Leslie, 2007).

In the current literature, the meta-representational viewpoint has been compared to the so-called 'as if' approach. In this perspective, young children do not possess a concept of pretence, but they just behave *as if* what happens in the pretence world were true (Lillard, 1993b; Perner, 1991). In this way, young children show the ability to simulate hypothetical situations, distinguishing them from the real world (Harris, 1991). The relevant aspect of this approach is that it enables connecting pretence to the more general comprehension of fantasy, the child's 'work of the imagination' (Harris, 2000). In both cases, the child explores different possible worlds. Children interpret pretend actions in the same way they interpret serious actions, supplying in their imagination the outcome that the real action would have produced (Harris & Kavanaugh, 1993; Harris, Kavanaugh, & Meredith, 1994). Some studies have also shown that 3-year-old children distinguish among different pretence worlds (Harris, 2000) and that 4-year-old children consider that characters of separate fictional worlds are fictional to each other (Skolnick & Bloom, 2006). Moreover, it has been shown that when pretence involves fantasy characters, children's understanding of mental qualities is more advanced (Lillard & Sobel, 1999; Sobel & Lillard, 2001).

If we move from experimental settings to real life, we know that children frequently encounter narratives and imaginary worlds in their social interactions (Bruner, 1990). Talks about the current situation and storytelling frequently alternate (e.g., during feeding and bedtime stories). Young children learn that different frames are possible beyond reality (Kavanaugh, 2002). Thus, young children are able to make the distinction between reality and fantasy (Samuels & Taylor, 1994) and at the same time they can easily shift from one world to the other.

Insincerity in communication

The development of insincere communication has been typically evaluated through the comprehension of story tasks linked to the theory of mind ability, such as Strange Stories, Faux Pas, and the Ice Cream Story (Baron-Cohen, 1989; Baron-Cohen, O'Riordan, Stone, Jones, & Plaisted, 1999; Happé, 1994). In our research, we proposed to examine different uses of insincerity, in order to deceive or to be polite, and suspension of sincerity as in the case of fantasy and pretence situations, in a communicative context. This format allowed us to compare children's abilities in different communicative situations. In particular, we compared performances on insincerity and performances on pretence and fantasy, two kinds of task that are generally studied, separately. Moreover, while the literature has centred mainly on comprehension, our study was focused on production of communicative acts. The development of the theory of mind can be seen as the precondition for comprehension of deceptive communicative acts but does not straightforwardly forecast children's actual performance when they have to produce communicative utterances. In this case, other factors can be expected to affect children's abilities. For example, in planning an insincere act moral evaluation plays an important

role, while in dealing with fantasy situations familiarity could matter, because children handle them since very young even if they do not have yet a full comprehension of others' mental states.

In the current study, we initially tested our subjects on linguistic abilities to be sure that children within each age group were homogeneous in their ability to comprehend the linguistic content of the story task.

Then, children were presented with different stories and they were asked to produce a communicative act in response to one character's communicative act. The situations were everyday stories, which we considered as control, fantasy stories (some of them involving pretence), stories where a deceit was the only means to avoid a predictable problem, and stories where to say the truth would have been impolite. The stories were presented one after the other in a random order without any cue allowing to identify the type of story (further details in the *Materials* section).

Moreover, instead of testing children on classical theory of mind tasks, after their first spontaneous answers, we asked them what they thought would be the effect of their communicative act on the interlocutor, with the aim of understanding if they had taken into account the partner's mental states in producing their answer.

In summary, the basic hypotheses of the current study were as follows:

- (1) We expected that children in all age groups would be able to easily use sincere communicative acts in everyday situations and suspend sincerity when fantasy or pretence was involved. We did not expect significant differences between fantasy and pretence tasks because these contexts feature prominently in child-adult interactions from early infancy and very young children are able to alternate between reality and works of the imagination, even if they are not able to give pretence a special mental status (Lillard, 1993a; Lillard, 1996; Sobel & Lillard, 2002).
- (2) We expected that as age increases, children will be more likely to tell a lie or a white lie since with age children become more sophisticated in their communicative interactions and then resort more frequently to insincerity to avoid an undesirable consequence. However, we expected that white lies will be less frequently performed than lies even in the older group of children.
- (3) In our study, children who spontaneously produced a sincere answer in lies/politeness stories were asked to think about the possible effect of their answer on the interlocutor, in some cases an adult and in others a peer. When reasoning about the communicative context, we expected that older children would be more likely than younger children after prompting to change their answer and adopt a white lie, showing a significant increase with age in their ability to reason about the communicative context. This is because it may be possible that older children already have the ability to modulate insincerity according to different contexts, even if they do not spontaneously use such ability.

In conclusion, the present paper proposes to examine the use of insincere communicative acts in young children in a new light. In the literature, this was traditionally considered as a theory of mind issue; here, we explored the perspective that in real life, sincerity or insincerity are attributes of communication: insincerity is involved in a number of communicative acts, which children acquire through different modalities, and which will display different pathways of acquisition. Our study thus attempts to clarify the paradoxical fact that some uses of insincerity – namely fantasy and pretence – are in normal use in young children, while others are rarely used even by first graders.

Table 1. Sample characteristics: Demographic details and Peabody scores of participants

Age group	No. of subjects	Gender		Mean (<i>SD</i>) age (months)		Range (years)	Mean (<i>SD</i>) Peabody score	
		Female	Male					
3-year-olds	20	10	10	38.6	(2.18)	3.0–3.5	87.7	(9.78)
4-year-olds	20	10	10	50.1	(1.81)	4.0–4.5	93.85	(13.85)
5-year-olds	20	10	10	62.8	(1.39)	5.0–5.5	87.1	13.83
6-year-olds	20	10	10	74.8	(2.16)	6.0–6.5	97.25	12.39
Total	80	40	40	56.63	(13.78)	3.0–6.5	91.48	13.05

Method

Participants

Eighty 3- to 6.5-year-old children participated in the study: 20 3- to 3.5-year-olds ($M = 38.6$ months; $SD = 2.18$), 20 4- to 4.5-year-olds ($M = 50.1$ months; $SD = 1.81$), 20 5- to 5.5-year-olds ($M = 62.8$ months; $SD = 1.39$), and 20 6- to 6.5-year-olds ($M = 74.8$ months; $SD = 2.16$). For the sake of simplicity, we will refer to the four age groups as 3-year-olds, 4-year-olds, 5-year-olds, and 6-year-olds. Each age group included an equal number of boys and girls. Criteria for inclusion were that participants had no history of speech and language difficulties, were Italian native speakers, and had no known significant medical or neurological conditions. All children were recruited from nursery and primary schools in the Torino and Vercelli area (Italy). Parents were informed in detail about the research and provided informed consent for their children to participate in our study.

In order to guarantee the consistency of language comprehension ability in each age group, children were administered the Peabody Picture Vocabulary Test – Revised (PPVT-R; Dunn & Dunn, 1981; Italian adaptation: Stella, Pizzioli, & Tressoldi, 2000). The mean scores for each group and other participant details are reported in Table 1. Grubb's test was used in the statistical evaluation of the data to identify outliers. For the PPVT-R, no outliers were detected at the 95% significance level within each age group, consequently we did not exclude any participants from the sample.

Half of the children were from the middle social class (49.8%), but other classes were also represented (lower: 8.9%; lower-middle: 17.5%; upper-middle: 18.9%; and upper: 4.9%).

Materials

The experimental protocol consisted of 16 short stories, conceived specifically for the present study (see Appendix A). The experimenter told each story to the children, showing at the same time a sequence of three vignettes illustrating the main elements in the story, in order to limit the memory requirement. The stories were equivalent in terms of length and syntactical difficulties. The vignettes were prepared to illustrate events in the stories and were presented to children on 4'' × 6'' paper in a protective sheet. The vignettes remained in front of the subjects while questions were asked.

In each story, two characters were engaged in a communicative interaction; at the ending, one character asked something to her or his partner: the children were requested to answer by assuming the partner's perspective.

There were four different types of stories (four stories for each type; a total of 16 stories):

- (1) *Fantasy stories*, showing simple situations involving pretence play (two stories) or fantasy context (two stories); in both cases, children were expected to adhere to the fantasy/pretend communicative context proposed and thus to produce a pragmatically insincere communicative act.
- (2) *Lie stories*, representing situations where telling the truth might have involved disagreeable consequences for the speaker (e.g., scolding); consequently, in these situations, children were expected to produce insincere communicative acts, in order to avoid negative consequences.
- (3) *Politeness stories*, representing situations where to tell the truth wouldn't have been polite, and thus sincerity suspension was expected for politeness purposes.
- (4) *Control stories*, representing simple situations where sincerity was expected.

After each story, children were asked an open-ended test question: 'What does *X* reply to *Y*?' Then, other broader questions were asked in order to allow precise understanding of the children's replies and accurate coding; the broader questions varied across story typologies (examples of the different questions are shown in the Appendix A). The aim of the open-test questions was to elicit children's communicative acts in a very natural way, as they were free to continue the story as they preferred.

Procedure

The participants were tested individually in a quiet room at their school, away from other children. The Peabody Test was presented first, and then the 16 short stories of our experimental protocol. In order to control possible position effects, the stories' presentation order was varied across two protocols (A and B), and each order was given to half of the children in each age group; children were randomly assigned to protocol A or B. The examiner told the stories to the children, showing them at the same time a sequence of three drawing vignettes representing the main points of each story (initial situation – central event – partner's question), in order to limit the memory task demand and to keep a high level of attention. While mentioning the characters in the test question, the examiner also pointed at them on the drawing vignettes. The examiner's questions were constant throughout story types in order to adequately compare children's performances. Children's answers were audio-recorded and written out by the examiner on separate sheets, in order to allow off-line scoring.

Coding procedure

Two independent judges assigned scores using the audio-recorded files alongside the experimenter's handwritten reports. Judges were trained how to attribute scores by the authors; scoring instructions were also provided on separate tutorial sheet. Judges were blind to the aim of the present experiment.

Insincerity score

The main goal of the present study was to investigate the emerging ability of children to make different use of insincere utterances according to different communicative contexts. Consequently, we scored the *use of insincerity* in children's answers. The scores were assigned as follows:

- (1) *Fantasy stories*: The answer got 1 point if the child produced a pragmatically *insincere* communicative act, adhering to the fantasy context depicted in the story, and thus remaining in the fantasy/pretend play without referring to the unreality of the situation; the response got 0 points if the child made the unreality explicit (e.g., saying 'It's not an oar, it's a broom!').
- (2) *Lie stories*: The answer got 1 point if the child lied, since in this kind of story the communicative context proposed a situation in which to tell the truth could involve disagreeable consequences; thus, sincerity was not expected. The answer got 0 points if the child told the truth.
- (3) *Politeness stories*: The answer got 1 point if the child told a white lie, in order to be polite with the communicative partner. The answer got 0 points if the child told the truth.
- (4) *Control stories*: The answer got 1 point if the child told the *truth*, since in normal situations sincerity is expected. The answer got 0 points if the child lied.

It is important to note that we didn't orient the children towards the production of deceit or polite utterances, allowing them to communicate as they preferred in replying to open-ended questions (e.g., 'What does X reply to Y?'). When children gave incorrect answers, the examiner provided a more leading question (*cue condition*) in order to permit further analysis on the effect of cues in the children's replies. Examples of children's answers and respective scores are provided in Appendix B. The level of agreement using Cohen's kappa was .98, indicating almost perfect agreement (Landis & Koch, 1977).

Qualitative analysis

We performed also a qualitative analysis of children's answers. The qualitative approach represented a deeper investigation of children's communicative flexibility in the use of insincerity, since it allowed us to make some remarks on the answers' content. Thus, we performed a qualitative analysis of answers only for lie and politeness stories, where a more articulate range of answers was expected. In lie stories, we observed the complexity of the communicative acts produced; in the politeness stories, we wished to understand more precisely the kind of errors that children could make.

More specifically, for lie stories answers, we noted on the scoring sheet: (a) *sincerity with justification*: if the child told the truth (insincerity score = 0) but provided at the same time some justifications; (b) *simple lie*: if the child did not tell the truth (insincerity score = 1), producing a simple lie; (c) *complex deceit*: if the child did not tell the truth (insincerity score = 1), producing a complex deceit instead of a simple lie. Complex deceit refers to situations in which the child not only denied the real situation (e.g., 'I don't know', 'It wasn't me'), but also invented a credible alternative story (e.g., 'Maybe your brother ate the biscuits').

For politeness answers, we noted on the scoring sheet: (a) *no comprehension of the impoliteness*: if the child told the truth (insincerity score = 0) without noticing that it was impolite; (b) *comprehension of the impoliteness*: if the child told the truth (insincerity score = 0), even if she/he noticed that it was impolite; (c) *impoliteness with justification*: if the child told the truth (insincerity score = 0), noticing that it was impolite but justifying the answer (e.g., saying 'You always have to tell the truth!').

Table 2. Percentages of correct responses to the different types of stories

	Fantasy	Lie		Politeness		Control stories
		No cue	Cue	No cue	Cue	
3-year-olds	97	5	9	4	6	100
4-year-olds	88	18	25	5	8	100
5-year-olds	95	36	45	25	36	100
6-year-olds	94	55	74	43	65	100
Overall	94	28	38	17	29	100

The qualitative analysis was performed only with the purpose to better articulate children's answers, with no quantitative aims. Examples of children's responses and scores are given in the Appendix B.

Results

Use of insincerity

Percentages of correct responses for the four types of stories (fantasy, lie, politeness, and control stories) are displayed in Table 2.

We conducted analysis of variance (ANOVA) in order to investigate a trend towards a difference among the age groups and to assess children's performance in the production of the communicative acts required in the different situations investigated. To investigate children's performance in fantasy, deceit, politeness, and control stories, data were entered into ANOVA with two between-subjects factor (*age-group*, with four levels, corresponding to the four different age groups, and *gender*, with two levels, male and female) and one within-subjects factor (*type of story*, with four levels: fantasy, deceit, politeness, and control). The ANOVA analysis revealed a main effect of the type of story, $F_{(3,198)} = 298.46$, $p < .0001$, $\eta^2 = .82$: as expected, in control stories children used sincere communicative acts showing a ceiling effect, the expected use of *insincere* communicative acts obtained very high levels (with no ceiling effect) in fantasy stories, while in lies and politeness stories children obtained lower scores (see Table 2). There was also a main effect of age-group, $F_{(3,66)} = 14.58$, $p < .0001$, $\eta^2 = .4$, indicating that children's performance increased with age in the expected direction. *Post-hoc* analysis using the Bonferroni correction revealed significant differences between 3- and 5-year-olds ($p = .04$), 3- and 6-year-olds ($p < .0001$), 4- and 6-year-olds ($p < .0001$), and 5- and 6-year-olds ($p = .01$). The effect of gender was not significant, $F_{(3,66)} = .856$, $p = .465$.

In a further analysis, we investigated whether there was a difference between fantasy and pretend: the difference was not significant both in the overall sample, $t_{(79)} = .65$, $p = .52$, or within each age group, $.62 < t_{(19)} < 2.03$, $.06 < p < .54$. When we compared control stories and fantasy stories, the difference was significant only for the 4-year-old group, $t_{(19)} = 2.35$, $p = .03$, whereas the comparison was not significant within the other age-groups, $1 < t_{(19)} < 1.45$, $.163 < p < .33$.

Finally, we analysed in the politeness stories, the effect of whether the communicative partner was a child or an adult; the four politeness items were purposely created involving child-to-child communicative interactions (two items), and adult-to-child communicative interactions (two items). Overall, the analysis revealed no differences

between adult versus child condition, $t_{(66)} = 1.62, p = .16$. The same result emerged in each age group, $.6 < t_{(19)} < 1.83, p > .05$.

In order to evaluate the effect of the *cue condition* on children's performance, we performed the same ANOVA analysis focusing on children's correct responses provided after more direct examiner's questions for lies and politeness stories (see Insincerity Score section). Thus, data were entered into ANOVA with one between-subjects factor (*age-group*, with four levels, corresponding to the four different groups of age) and one within-subjects factor (*type of story*, with four levels: fantasy, deceit, politeness, and control). The ANOVA analysis revealed a main effect of the type of story, $F_{(3,228)} = 219.35, p < .0001, \eta^2 = .74$: as previously, the expected use of *insincere* communicative acts was more frequent in deceit rather than in politeness stories. There was also a main effect of the age-group, $F_{(3,76)} = 22.96, p < .0001, \eta^2 = .48$, indicating that children's performance in the expected direction increased with age. Then, we performed paired *t*-tests in order to determine the specific effect of the cue condition on children's replies (see Table 2). Overall, the difference between the *cue condition* and the *non-cue condition* was significant both for lie stories, $t_{(18)} = 3.74, p < .0001$, and politeness stories, $t_{(18)} = 2.97, p = .004$. No gender differences were found ($.4 < t_{(18)} < 1.8, p > .05$).

Qualitative analysis

In order to better understand the use of insincere communicative acts in *lie* stories, we examined the content of the children's replies. The results showed that children very rarely used justifications (only seven cases in the whole sample). Moreover, while the proportion of lies and deceptions increased with children's age, complex deceptions were virtually absent in 3-year-olds (just one child in the group), rare in 4- and 5-year-olds (four in each age group), and are more frequent in 6-year-olds. Still even in the 6-year-old group, deceptions were almost as frequent as lies (15 vs. 12).

The same kind of descriptive analysis was performed for politeness stories. The youngest children did not understand the impoliteness implied in the situation in nine cases. Incomprehension was verified only three times for the 4-year-olds, while the two older groups never manifested incomprehension of impoliteness. Also in politeness stories, children very rarely used justifications, only two cases in the whole sample.

Discussion

In the study presented here, we tried to clarify the use of insincerity in 3- to 6-year-old children by asking them to produce communicative acts in everyday situations in which in some cases sincerity was expected, whereas in some others insincerity was expected. The main features of the task were that (a) the children were completely free to formulate their communicative acts, without explicit instructions concerning the use of sincerity/insincerity expected and that (b) the different communicative situations were presented to the children in exactly the same format, without any cue helping to distinguish one kind from another. This procedure allowed us to investigate children's *spontaneous* use of insincerity in the different situations. In the case of unexpected answers, children were encouraged to reflect on the effects of their answer on the interlocutor and possibly also provide another answer. In this way, it was possible to elucidate the reasons for their failure. Was it due to the incomprehension of the pragmatic situation and of the possible effects of their communicative utterances or was it a communicative choice?

All our experimental hypotheses were confirmed. As expected, the children in the four age groups produced sincere communicative acts in the control situations. All the children obtained good results also in the fantasy stories. However, only the 4-year-old group showed significantly poorer performance on fantasy stories compared to the control ones, thus displaying more difficulties than all the other groups of age, including younger children. We propose to explain this result by maintaining that at this stage of development, children start to handle the mental representations involved in communicative interactions explicitly, and for this reason they commit more errors than younger children when encountering pretence or fantasy elements in communicative exchanges. This is in line with theoretical perspectives, which assume that human development is a process by which information that is in the cognitive system becomes progressively explicit knowledge to that system, and that shifting from one stage to another can involve decrements in performance as children reorganize their internal framework (e.g., Karmiloff-Smith, 1992). We interpret the overall good performance in the fantasy stories as the result of young children's familiarity with fantasy worlds: it is more than enough for them that their communicative partner performs an utterance within an imaginary context to enter in the same world and react accordingly. This is true both when the context is a fantasy story, and a pretence situation. This is consistent with previous studies on pretence that have shown that young children, starting at 28 months of age, when they enter a fantasy world are able to immediately suspend the objective truth, replacing such truth with the truth of the fictional world in which they are in (Harris & Kavanaugh, 1993). What our study adds to this point is the ease with which young children enter a fantasy world and communicate about it without any cue allowing them to distinguish it from real life. With respect to our second hypothesis, age groups differed in their performance in lie and politeness situations (white lies). There was an increasing developmental trend in performance on both tasks, and white lies were used less than lies in all age groups.

Moreover, in our study, there was no difference in the use of white lies if the interlocutor was a peer or an adult. Other studies have shown that children are aware of the differences of status in communication (Bates, 1976c; Sachs & Devin, 1976; James, 1978; Ervin-Tripp, 1982). These studies were focused particularly on making requests: in requests, taking into account the other's status increases the probability of achieving one's own goals. On the other hand, our tasks proposed situations in which a more sophisticated use of politeness was required, that is preserving others' feelings. It is possible that for these kinds of communicative acts, young children may not vary their response according to peer/adult status because they constantly need to relate to other children and adults in everyday life. If they think that a white lie is desirable in order to respect others' feelings, they can use it indifferently with both peers and adults. For requests, on the other hand, it is reasonable to think that children vary their utterances on the basis of the partner's status because parents may explicitly and consistently direct them to perform more polite linguistic behaviours with adults than with other children.

An interesting result is the general proportion of lies and white lies produced. The percentage of lies increased with age but still in 6-year-olds remained at 55%; also the percentage of white lies increased but it did not go beyond 44% in the older children. In both cases, there was an increase when children received an explicit cue by the examiner: cues increased the performances in all age groups. As expected, this effect was particularly marked in the older groups, thus showing that older children were more proficient in exploiting the facilitating condition offered by the adult (i.e., the experimenter).

The qualitative analysis focused on the content of the produced lies revealed that there was an increase of complex deceptions with age. Complex deceptions were virtually absent in 3-year-olds, rare in 4- and 5-year-olds, and were more frequent in 6-year-olds. Still even in the 6-year-old group, complex deceptions were almost as frequent as lies. These results showed that even when children should in principle be able to construct complex deceptions, they often still produce simple lies. This pattern of response can be explained by a tendency to simplify as long as this remains possible, as previous literature has shown for other tasks. For instance, it has been demonstrated that children still use more frequently desires and goals in the explanation of others' behaviour than beliefs even if they have already acquired the ability to use beliefs (Bartsch & Wellman, 1989). The authors of this study reported that in their data at all ages – including adulthood – desire explanations outweighed belief explanations about two to one. Moreover, in our study, few children – with no difference among the age groups – used justifications to mitigate sincere responses.

In politeness stories, younger children did not understand the situation and the fact that it demanded a special treatment. Starting at 4 years of age, they were aware that in some situations other people could be disappointed by their answers, but they still remained sincere. Also in this case, like in the lie stories, they rarely used justifications to mitigate their impoliteness. Comprehension of impoliteness was particularly present in 4- and 5-year-olds. This can be explained by the fact that at this age children are starting to explicitly think about others' minds.

These results in deceiving behaviour and white lies production deserve some comments. With respect to lies, even the older children – who were aware of the fact that sincerity may result in some sort of troubles – often gave sincere answers. These data show that there is an interesting distinction between the ability to comprehend that the situation should require a deception and the choice to use it in communication. In some of the older children, the moral solution prevailed (Bussey, 1992), and this can explain also the performance in white lies. Insincere answers can substitute for the previous sincere ones if a cue prompted by the experimenter leads in this direction. We think that the children who had opted for the moral solution may take the adult's invitation to reflect on the consequences of sincerity as a kind of permission to be insincere. With respect to white lies, it must be noted that children did not necessarily understand that these kinds of lies have a different status with respect to other types of lies: in order to acquire this awareness, a more sophisticated knowledge of social rules seems to be required. Adults consider that protecting others' feelings is very important to keep good social relationships and that sometimes a lie is preferable to truth when the aim is to maintain appropriate social relationships; children acquire this knowledge either directly or indirectly from parents or significant others in general (Lewis, 1993). We can expect that children acquire precociously the appropriate behaviour in the most familiar situations and that it takes time for them to generalize to all comparable situations. This could explain why they seem to perform better in the undesirable gift situation (Talwar *et al.*, 2007), than in our task.

In summary, in our study we have investigated young children's use of insincerity in different communicative situations. Traditionally, this issue has been treated merely as a problem of theory of mind, investigating the developmental stages of the ability to comprehend deceit. Our results derived from the spontaneous production of communicative acts showed that there is a notable amount of individual variability, even when on the basis of children's age we can expect that they have already acquired the ability to deal with insincerity. However, the variability was not equally distributed

among the different tasks. It was almost completely absent in the fantasy and pretence situations while present in the other tasks. Young children learn in interactions with adults to communicate on fictional facts in the same way they communicate on entities of the real world. For that a concept of sincerity is not necessary. Instead, deceiving is both more difficult and against adults' explicit teaching. It takes children time and exposure to many examples to share with adults the understanding that, sincerity is not always to be praised. In conclusion, children gradually learn to deal with the rules of communication in their everyday interactions.

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Appendix A

Examples of stories and test questions

I. Fantasy story

Lisa is looking at the moon. Sara told her that the moon is all made of cheese! The moon is almost finished so Lisa asks Sara: "What we can do if the star eats all the moon?"

- Examiner: "What does Sara reply to Lisa?"
 - *Control question (only applicable if the child does not understand the fantasy situation):*
Examiner: "Is it impossible to pretend to eat the moon?"



II. Lie story

Alice took her mom's new sunglasses and broke them while playing. So, she hides the sunglasses in the sofa since she doesn't want to be scolded. Her mummy arrives and asks Alice: "Do you know where my sunglasses are?"

- Examiner: "What does Alice reply to her mummy?"
 - *Control question (only applicable if the child tells the truth):*
Examiner: "Could Alice play with the sunglasses?"
 - *Cue condition (only applicable if the child had understood that Alice couldn't play with the sunglasses):*
Examiner: "Alice doesn't want to be scolded, so what she could say to her mummy?"



III. Politeness story

Daniela had as birthday gift a new puppet, a big, fat frog. The puppet is very ugly, but Daniela cares about it since it was her daddy's gift. Daniela shows the puppet to her friend Giovanni and asks him: "Do you like my puppet?"

- Examiner: "What does Giovanni reply to Daniela?"

- *Control question (only applicable if the child says that the puppet is ugly):*
Examiner: "Will Daniela be upset after this reply?"
- *Cue condition (only applicable if the child says that Daniela will be upset):*
Examiner: "What could Giovanni say in order to be kind to Daniela?"
- *Control question (only applicable if the child says that the puppet is nice):*
Examiner: "Is it true that the puppet is nice?"



IV. Control story

Mummy read a nice bedtime story to Lucia. Lucia likes the story and she is so happy that mummy read that story to her. Mummy asks to Lucia: "Do you like tonight's story?"

- Examiner: "What does Lucia reply to her mummy?"
 - *Control question (only applicable if the child replies "No"):*
Examiner: "Really? Doesn't Lucia like the story?"



Appendix B

Examples of children's answers and assigned scores

1. Fantasy story

Lisa is looking at the moon. Sara told her that the moon is all made of cheese! The moon is almost finished so Lisa asks Sara: "What can we do if the star eats all the moon?"

- Examiner: "What does Sara reply to Lisa?"
 - Example of correct response:
Child's answer: "We can take a rocket and throw the star out!" → Insincerity Score: 1
 - Example of incorrect response:
Child's answer: "The moon is not made of cheese!" → Insincerity Score: 0
 - *Control question (only applicable if the child does not understand the fantasy situation):*
Examiner: "Is it impossible to pretend to eat the moon?"

II. Lie story

Alice took her mom's new sunglasses and broke them while playing. So, she hides the sunglasses in the sofa since she doesn't want to be scolded. Her mummy arrives and asks Alice: "Do you know where my sunglasses are?"

- Examiner: "What does Alice reply to her mummy?"
 - *Control question (only applicable if the child tells the truth):*
Examiner: "Could Alice play with the sunglasses?"
 - *Cue condition (only applicable if the child had understood that Alice couldn't play with the sunglasses):*
Examiner: "Alice doesn't want to be scolded, so what she could say to her mummy?"
 - Example of correct response:
Child's answer: "No, I don't." → Insincerity Score: 1
→ Qualitative Score: simple lie
 - Example of correct response:
Child's answer: "Maybe someone took them, I'm just arrived. . . ."
→ Insincerity Score: 1
→ Qualitative Score: complex deceit
 - Example of correct response in the cue condition:
Child's answer: "I broke them. . . ."
Control question (since the child told the truth): "Could Alice play with the sunglasses?"
Child's answer: "No"
Cue condition (since the child had understood that Alice could not play with the sunglasses): "Alice doesn't want to be scolded, so what she could say to her mummy?"
Child's answer: "That she doesn't know what happened to the sunglasses."
→ Cue Condition Score: 1
 - Example of incorrect response:
Child's answer: "I broke them. . . ."
Control question (since the child told the truth): "Could Alice play with the sunglasses?"
Child's answer: "No"
Cue condition (since the child had understood that Alice couldn't play with the sunglasses): "Alice doesn't want to be scolded, so what she could say to her mummy?"
Child's answer: "I'm sorry Mom, it was an accident. . . ."
→ Insincerity Score: 0
→ Qualitative Score: sincerity with justification