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Pretending emotions in the early years: The role of language and symbolic play

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Abstract

Although 3-year-old children sometimes simulate emotions to adapt to social norms, we do not know if even younger children can pretend emotions in playful contexts. The present study investigated (1) what emotions infants of 1–2 years old are capable of pretending and (2) the possible role of language and symbolic play in the ability to pretend emotions. The sample included 69 infants aged 18 to 31 months and their parents. Infants were administrated the Test of Pretend Play, and their parents responded to the MacArthur-Bates CDI-II inventory, part of the MacArthur-Bates CDI-I, and a questionnaire about the expression of pretend emotions. Results suggest that very young children simulate emotions. Furthermore, children's simulation of emotions was related to both symbolic play and language. Specifically, the ability to label emotions was linked to the ability to simulate them. The role of language and symbolic play in the development of the capacity to express and understand pretend emotions is discussed.

1 | INTRODUCTION

Research suggests that infants under 2 years of age might (implicitly) understand that people pretend emotions, that is, that people express certain emotions with the intention of playing (see Walle & Campos, 2014). Infants as young as 20 months old are able to understand the causal relation between

a person's beliefs and their emotional expressions, in that they anticipate a person will show surprise only when their belief is contradicted by reality (Scott, 2017). Thus, although infants show an early (and implicit) understanding of emotions, and even of pretend emotions, it is unclear when children begin to generate pretend emotions with other people for the purpose of playing. The present exploratory research aims to investigate whether infants engage in simulating emotions in pretend play contexts, and if they do so, which emotions they pretend, and how language and symbolic play are related to this behavior.

Infants' implicit knowledge about emotions seems in contrast to the later abilities of children to label emotions and to reason verbally about them. In reference to the ability to label facial emotions, although approximately half of children at the age of two and a half years use words referring to sadness, anger, joy, or fear (see Serrat & Sidera, 2018), the interpretation of faces communicating certain discrete emotions develops gradually. So, while children use the expected verbal labels to label some emotional expressions (such as for a happy smile, a sad cry, or an angry scowl) at an early age, for other emotional expressions (e.g., fear gasp, surprise startle, disgust nose scrunch) the correct use of verbal labels is protracted (Widen, 2013).

On the other hand, results from prior studies suggest that the capacity to explicitly reason about an emotion appears after implicit understanding of that emotion. For example, only from the age of 5 do children become capable of reasoning about the fact that surprise depends on the violation of expectations (MacLaren & Olson, 1993), which contrasts with the early capacity to understand surprise implicitly before age 2 (Scott., 2017). This delay in explicit reasoning compared to implicit understanding has also been observed for other aspects of social understanding. For example, while the explicit understanding that people can have false beliefs about reality (understanding of false beliefs) occurs around the age of four or five (Wellman, 2018), other researchers have found evidence of sensitivity to other people's behaviors based on false beliefs (or implicit understanding of false beliefs) even before the age of two (see for example, Onishi & Baillargeon, 2005). However, it is unclear what form this implicit knowledge takes. On the one hand, the modular nativist view is that knowledge about false beliefs exists early, and that some limitations, such as memory or executive functions, prevent its expression. On the other hand, the more constructivist conceptual change account is that implicit and explicit knowledge are distinct types of knowledge: one unconscious, and the other conscious and abstract. Others argue that children's ability to anticipate the others' behaviors stems from their applying learned rules of behavior, without necessarily understanding mental states. In any case, there is evidence of continuous development from the implicit to the explicit understanding of false beliefs (Low & Perner, 2012; Scott & Baillargeon, 2017; de Villiers & de Villiers, 2014).

Studies such as Walle and Campos (2014) suggest that development from implicit to explicit understanding could also occur for understanding pretend emotions, although in this case it is not clear what type of knowledge would assist an implicit understanding of pretend emotions. In this sense, knowing how language and symbolic capacity are related to the expression of pretend emotions could give us useful information when it comes to understanding what kind of knowledge is behind the capacity to pretend emotions for playful purposes.

There is a strong association between language and symbolic play throughout development (Lillard et al., 2013; Orr & Geva, 2015; Quinn et al., 2018). McCune (1995), who studied the relationship between spontaneous play development and language, categorized symbolic play into five levels, and found that the transition from one play level to the next preceded the emergence of the language ability related to each level, although she acknowledged that this did not necessarily imply a causal relationship (Lewis et al., 2000). Pretend play could foster linguistic development because it scaffolds the development of cognitive abilities that are also needed for language acquisition, and also because pretend play promotes the development of strategies to negotiate pretend play scenarios. At the same

time, the development of complex linguistic constructions could promote more complex forms of pretend play (see Pleyer, 2020).

There is evidence that understanding of mental states is underpinned by an underlying symbolic capacity that also supports both language and symbolic play, as suggested by Piaget (Lillard, 2017; Lillard & Kavanaugh, 2014). Furthermore, according to some authors, the explicit understanding of mental states could be related to the mastery of certain grammatical structures, suggesting language would play a role in the development of the explicit understanding of mental states (San Juan & Astington, 2012; de Villiers & de Villiers, 2012). As the understanding of pretend emotions involves at least an implicit understanding of mental states, it seems plausible that language and/or symbolic play could be related to the early expression of pretend emotions.

Around 4 years of age, some children already understand that people can pretend or simulate emotions in order to play (Sidera et al., 2013), and this understanding is related to different components of language, such as vocabulary or grammar (Sidera et al., 2014; Sidera et al., 2020). However, the ability to regulate emotional expression to adapt to social norms may appear before the awareness that we can regulate our emotional expression (or simulate emotions). Cole (1986) found 3- and 4-year-old girls were able to smile in front of the researcher upon receiving a disappointing gift, although they were unaware of the possible deceptive effect of their emotional expression on the observers. Thus, there is evidence that young children can simulate emotions by age three. Here, we ask a) When does the capacity to simulate emotions for *playful* purposes appear? b) What emotions do children simulate in playful contexts? c) To what extent is the ability to pretend emotions related to language and to symbolic play?

2 | METHOD

2.1 | Participants

A total of 42 girls and 27 boys participated in the study, together with one or both parents. Participant data were collected in Catalonia (Spain) in 38 cases and in Virginia (USA) in 31 cases. The mean age of the participants was 23.59 months (SD = 3.62; range = 18–30 months). In 8 cases both parents answered the questionnaire together, while in 61 cases the mother did it alone.

The present study was conducted according to guidelines laid down in the Declaration of Helsinki, with written informed consent obtained from a parent or guardian for each child before any assessment or data collection. All procedures involving human subjects in this study were approved by the IRB for the Social and Behavioral Sciences from the University of Virginia, and also by the IRB Comitè d'Ètica i Bioseguretat de la Recerca from the University of Girona.

2.2 | Instruments

We administered a test of symbolic play to children, and two questionnaires to their parents.

2.2.1 | Symbolic play ability

The Test of Pretend Play (ToPP; Lewis & Boucher, 1997) is designed to assess the capacity for symbolic play, which is a type of pretend play that occurs when a child substitutes an object for another

object or person, attributes imagined properties to an object or person, or refers to an object, person, or substance as if they were present. In this study, the structured condition in its non-verbal version was used. In this version, the capacity for symbolic play is assessed through specific materials and procedures (modeling and specific requests). The structured non-verbal version can be used with children up to 3 years old, and has 4 sections. In the first section (Self with everyday objects), the child's ability to refer to an absent object from everyday objects is measured. In the second section (Toy and non-representational materials), the child's ability to substitute non-representational objects for fictitious objects is measured. In the third section (Representational toy alone), the child's ability to use a doll to perform different types of symbolic actions is measured. Finally, in the fourth section (Self alone), the child's ability to perform symbolic play without objects is measured.

2.2.2 | Evaluation of language

To evaluate children's language skills, we used the MacArthur-Bates Communicative Development Inventory (CDI) in its English (Fenson et al., 2006) and Catalan (Serrat et al., in press) versions, depending on which was the first language of the child. The CDI is a systematic tool designed to evaluate the language of infants from 8 to 30 months, using their parents as informants. The instrument has a good validity and reliability. The CDI has two inventories (CDI-I and CDI-II) describing linguistic and communicative behaviors that parents need to respond about their children (see Fenson et al., 2006).

In the present study, we administered to the parents the full *CDI-II*: *Words and sentences* (Toddler form), which is designed to be used with children aged between 16 and 30 months. We also administered parts of the *CDI-I*: *Words and gestures* (Infant form), which is designed to be used for children from 8 to 18 months of age. Although the CDI-I is designed for children younger than those in our sample, it measures knowledge that is of particular interest here. First of all, the Descriptive Words section includes vocabulary for basic emotions, and unlike the CDI-II, the CDI-I considers not only if the child says the word (production), but also if the child understands the word (comprehension). This allowed us to better analyze children's emotion-related vocabulary. Nevertheless, there are some words for basic emotions that are not included in this tool. Specifically, the Catalan version includes the words "content" (happy), "enfadat" (angry/mad), "ensurt/susto" (scared/afraid), and "trist" (sad); but not the words "sorpresa" (surprised) and "fàstic" (disgusted), which we added. The English version includes the words "happy" and "scared" (the latter was reworded to "scared/afraid" to make it more similar to the Catalan version), and we added the words "angry/mad", "disgusted", "sad", and "surprised". The second reason for using the CDI-I is that the Actions and Gestures part includes the section Pretending to be a parent, which includes pretend play items with dolls or stuffed animals. Thus, from the CDI-I we used the section "Descriptive words" from Part 1 (Early Words), and "Actions and Gestures" from Part 2.

2.2.3 | Questionnaire about the expression of pretend emotions

Parents were first asked if they simulated or exaggerated emotions with their child in play, and then the same question was asked about their children. To answer, parents filled in a table with the frequency with which they or their child simulated or exaggerated emotions in order to play (see Appendix 1).

2.3 | Procedure

In the USA, a laboratory-maintained database of families willing to participate in research was used to contact families. In Spain, families were contacted through letters sent to nursery schools. Parents who were willing to participate in the study were provided with information about the objectives and procedures. If they agreed to participate, a date was scheduled to administer the ToPP to the child, with the mother present. One week before administration of the ToPP, the questionnaires were sent to the parents, and they were asked to complete them before attending the session at the lab. Labs were equipped with 4 video-recording cameras that recorded the session.

2.4 | Scoring

For the ToPP, raw scores were used. The scoring ranges for each section are as follows: section 1: 0–2 points; section 2: 0–8; sections 3 and 4: 0–1. The total score of the ToPP ranges from 0 to 34.

For the CDI-I, the part *Pretending to be a parent* was scored with one point per item. Both the Catalan and English versions have 13 items, so the range of scores was from 0 to 13. We also calculated the number of emotion-related words that the participants understood (regardless of whether they said them or not), and the number of emotion-related words they said. The range varied from 0 to 6 in both cases.

For the CDI-II, all items on the vocabulary list were added (sections from 1 to 22). Given that the Catalan version has 678 items and the English one 680 (and they are not the same words), the raw score could not be used, so the percentage of words that children used from the full word list was calculated.

In relation to the Questionnaire about the expression of pretend emotions, we analyzed, for each emotion, whether the parents or the children simulated it at least once (i.e., *rarely*, *sometimes* or *very often*). We also calculated the number of emotions that a parent or child had simulated at least once (range 0 to 6). To carry out correlations between the frequencies of the emotions simulated by the child and their parent, we gave a score of 0 to *Never*, 1 to *Rarely*, 2 to *Sometimes*, and 3 to *Very often*.

Data were analyzed using SPSS 25.

3 | RESULTS

3.1 | Emotional simulation

Table 1 shows the percentage of emotions that children or parents had simulated at least once. All parents reported having simulated one emotion at least once, and 90% of children were reported to have done so. The emotions most frequently simulated by both parents and children were happiness and surprise. The least simulated emotion in both cases was disgust.

To relate the frequency between the emotions simulated by the children and those simulated by parents, Pearson's correlations were carried out. They revealed significant parent–child correlations for all emotions: anger ($r = 0.606$; $p < 0.001$), surprise ($r = 0.508$; $p < 0.001$), happiness ($r = 0.580$; $p = 0.001$), sadness ($r = 0.516$; $p < 0.001$), fear ($r = 0.472$; $p < 0.001$) and disgust ($r = 0.696$; $p < 0.001$). The sum of frequencies of all 6 emotions for parents and children also correlated significantly ($r = 0.699$; $p < 0.001$).

3.1.1 | Emotion vocabulary

Table 2 reports the proportion of participants who understood or said different words referring to emotions. The most frequently spoken emotion words were *happy* and *scared/afraid*, and the least frequently spoken ones were *disgusted* and *surprised*. The most understood words (regardless of whether children said them or not) were *happy* and *sad*, and the least understood were *disgusted* and *surprised*.

3.2 | Emotional vocabulary and emotional simulation

A chi-square test (2x2) was used to analyze the relation between the words that the children "say" and the emotions that they simulate (at least once or never), for each of the emotions. We found a significant relationship for the words *scared/afraid* (X^2 (1, N = 66) = 13,687, $p < 0.001$; Cramer's V = 0.455), *sad* (X^2 (1, N = 67) = 11,213, $p = 0.001$; Cramer's V = 0.409), and *angry/mad* (X^2 (1, N = 69) = 5.301, $p = 0.0021$; Cramer's V = 0.277). Hence, the children who said these words also were more apt to simulate the emotions associated with them. In contrast, there was no significant relation ($p > .05$) between the spoken word and the simulated emotion for *happy*, *surprised* or *disgusted*.

We also used a chi-square test (2x2) to analyze the relation between the emotion words that children understand (regardless of whether they say them) and each of the emotions that children simulate (at least once or never). We found a significant relation with understanding of the words *angry/mad* (Fisher's test: $p = 0.013$; Cramer's V = 0.314), *sad* (Fisher's test: $p = 0.018$; Cramer's V = 0.309), *disgusted* (X^2 (1, N = 66) = 9,782, $p = 0.002$; Cramer's V = 0.385), and *scared/afraid* (X^2 (1, N = 66) = 4,889, $p = 0.027$; Cramer's V = 0.272). Thus, a greater understanding of each of

TABLE 1 Proportion of children and parents simulating each emotion at least once

	Children	Parents
Anger	0.62	0.70
Surprise	0.73	0.99
Fear	0.50	0.81
Happiness	0.78	0.96
Sadness	0.61	0.93
Disgust	0.45	0.68
Any emotion	0.90	1

TABLE 2 Proportion of participants parents reported understand or say the emotion-related words

	Don't understand or say	Understand only	Understand & say
Disgusted	0.61	0.30	0.09
Scared/afraid	0.26	0.26	0.48
Sad	0.17	0.39	0.44
Angry/mad	0.19	0.41	0.41
Surprised	0.45	0.35	0.20
Happy	0.10	0.30	0.60

these emotional words was associated with a higher likelihood of simulation of the related emotion. No significant relation was found for the words *happy* or *surprise*.

In sum, comprehension and production of several emotion terms was related to simulation of the corresponding emotions. The exceptions to this were *disgusted*, for which the association was found only for understanding, and "happy" and "surprise," for which no relation was found with emotion simulation.

3.3 | Language, pretend play, and pretend emotions

We analyzed the relation between the number of simulated emotions (how many emotions participants were reported to simulate, regardless of frequency) with the linguistic and symbolic play variables (see Table 3). Significant correlations were found between the number of simulated emotions and: (a) vocabulary; (b) understanding of emotion words; (c) use of emotion words; and (d) the pretending to be a parent section of the CDI-I. On the other hand, no significant correlation was found with the total score on the ToPP. When correlations were carried out with each of the ToPP sections, a significant correlation was found ($p < 0.05$) with the section 4 of the test, but not with the other three sections.

A stepwise linear regression was performed taking as a dependent variable the number of emotions simulated by the child, and as independent variables those which correlated with it (see Table 3). Table 4 shows a summary of the resulting model, in which the number of emotion words the child says was the only predictor (adjusted R square = 0.203).

4 | DISCUSSION

The first question addressed in this research was when children start pretending emotions with other people in order to play. Although some research suggests that children could implicitly understand pretend emotions before age two (Walle & Campos, 2014), to our knowledge this is the first study to investigate young children's ability to pretend emotions in playful contexts. According to their

TABLE 3 Pearson's correlation between number of pretend emotions, language, and symbolic play abilities

	Number of emotions simulated by the child
Test of Pretend Play (Total)	$r = 0.180; p = 0.141$
Test of Pretend Play (section 4)	$r = 0.243; p = 0.046$
Pretending to be a parent_CDI-I	$r = 0.243; p = 0.044$
Vocabulary_CDI-II	$r = 0.347; p = 0.005$
Emotion words the child understands	$r = 0.337; p = 0.005$
Emotion words the child says	$r = 0.461; p < 0.001$

TABLE 4 Regression model of the predictors of the number of emotions simulated by the child

Variable	*B*	95% IC	β	*t*	*p*
(Constant)	2.524	[1.869, 3.180]		7.695	0.000
Emotion words the child says	0.465	[0.245, 0.685]	0.464	4.223	0.000

parents, approximately 90% of children in our study (aged between 18 and 30 months) pretend emotions in order to play.

The second question was which emotions children simulate. Previous research had found that 3- and 4-year-olds are able to adjust their emotional expression to display rules, for example expressing joy upon receiving a disappointing gift, without being aware of their own regulation of the emotional expression (see Cole, 1986). But it is not until age 6 that children can produce a simulated expression to deceive (Kromm et al., 2015). Moreover, 2-year-olds are unable to *pose* (or produce) facial expressions when asked verbally to do so in front of a camera; children can only pose happiness and surprise at age 3 (Lewis et al., 1987). Those emotions were the most simulated by the children (according to the parents) in our study, which contradicts what Lewis et al. found. Our finding that children generate pretend emotional expressions in a play context well before they can do so in real contexts is a novel and important contribution.

In Lewis et al., (1987), children were required to show certain emotional expressions using verbal labels in front of a camera and a stranger. Moreover, in their study emotional expressions were studied by analyzing facial movements. In natural situations young children may be capable of intentionally modifying their emotional expressions in order to pretend an emotion. For that, it is not even necessary that the resulting emotional expression resembles the intended emotion (in terms of muscular movements); it is only necessary that the other person understands the communicative intention of the child, as in our study. Therefore, it is possible that in spite of the difficulties 2-year-olds have posing facial expressions in laboratory situations, they are able to simulate them in playful contexts. Thus, we suggest that the regulation of emotional expression in play is different from the regulation of emotional expression in adapting social norms or in response to an experimenter's directive.

We know that by age 4 children regulate their emotional expressions to adapt to social norms depending on the person in front of them. For example, they smile when they are given a disappointing gift in the presence of a researcher, but not if their parents are there as well (Chaplin et al., 2017). This raises the question of whether in regulating their emotional expressions in play, children would show differences depending on who was present. Our study suggests that children pretend emotions at an early age with their parents, but our study does not address when they begin to do so with other people (e.g., other children).

One caution is that we relied on parent report, and parents might overestimate their children's capacity to simulate emotions. Although future research should use observational measures to determine this, the parental perception that children can simulate emotions at such early ages is consistent with the aforementioned studies that suggest understanding of pretend emotions around these same ages (see Walle & Campos, 2014.) Apart from this, all parents reported engaging in pretend emotions in play with their children (and they are surely better at understanding their own pretense), so this type of game seemed not to be strange among families. Moreover, a relation was found between the frequency of simulated emotions by parents and their children.

4.1 | Relation between language and pretend emotions

The present research intended to deepen our knowledge about the possible role of language in the ability to pretend emotions in the early years. In relation to language, we found that children's capacity to understand and say certain emotion words was related to simulating those emotions, although this relation was not found for the words *happy* and *surprised*. This could suggest that the ability to simulate certain emotions develops in parallel with the ability to understand and use the words related to those emotions. Unfortunately, the present research cannot determine the direction of possible influence between emotion labels and the capacity to pretend emotions.

We observed that the correlation between the number of emotions simulated by children (at least once) and their use of emotion words is greater than the correlation between simulation and understanding of emotion words. This could be due to parents better detecting produced words than comprehended words. Although general vocabulary also correlated with number of simulated emotions suggesting the importance of language for the development of emotion simulation, the emotion words that children say were even more strongly linked to emotion simulation. Previous studies have shown that the ability to explicitly understand pretend emotions is linked to aspects of language such as vocabulary or complementation syntax (Sidera et al., 2013; Sidera et al., 2014). In this sense, the present study shows that not only is understanding of pretend emotions linked to language development, but early simulation of emotions in play contexts is as well.

4.2 | Relations between symbolic play and pretend emotions

We were interested into what extent the capacity for symbolic play is linked to the capacity to simulate emotions. Our results suggest that certain aspects of symbolic play are related to young children's emotion simulation behaviors. First, regarding the ToPP, only section 4 was linked to emotion simulation. Whereas in the sections 1, 2, and 3 of the test, objects or dolls are used to carry out the symbolic play, in section 4 no objects are used; the child must substitute their own body for an object or person, imagine absent objects, attribute imaginary properties, or perform imaginary action sequences without objects. Simulating an emotion is also a symbolic action in which no object is used, but consists of attributing imaginary properties, and specifically, imaginary (in the sense of not actually present) emotions. For this reason, perhaps the correlation between simulating pretend emotion and section 4 of the ToPP is unsurprising.

On the other hand, we also found a correlation between the CDI-I section *Pretending to be a parent* and the simulation of emotions. The items in this part of the inventory refer to play with objects (specifically, stuffed animals or dolls), and therefore do not necessarily require the ability to symbolize imaginary objects. On further view, however, their items are related to the attribution of absent or imaginary properties to dolls (e.g., sleep, hunger), and therefore, this symbolic capacity could also be related to the attribution of properties (emotions) to oneself. Hence, our results suggest that symbolic play could facilitate emotion simulation behaviors. This could be because pretend play is a context that facilitates the negotiation of perspectives and understanding of mental states (Lillard, 2107), and also because it facilitates children learning about stereotypical situations and roles (Pleyer, 2020), for example, which emotions children express in certain situations.

Cole and Jacobs (2018) asked what kind of knowledge is required to be able to control emotional expression. Here, we investigated the role of language and symbolic play in the simulation of emotions in play situations. However, we have not investigated children's *understanding* of pretend emotions, or how it relates to the behavior of pretending emotions. It is possible that the ability to (implicitly) understand pretend emotions is required to perform an emotional simulation to play. For example, in order to play at being scared one may need to understand that the other person is just playing at being scared. Friedman (2013) argues that understanding pretend play does not require comprehension of a mental state called "pretend," but rather only requires that one understand the communicative intentions of the other person. Thus, emotion simulation may require understanding that certain expressive behaviors have a playful intention, without the need to carry out an explicit contrast between the person's real and imaginary mental states. That is, a child might understand that her mother plays at being surprised, without asking how the mother really feels. This type of knowledge could be called implicit understanding of pretend emotions, which later, perhaps around the age of 4, would begin to become explicit (see Sidera et al., 2013).

The main limitation of the present study is that both the measures of children's vocabulary and of children's pretend emotions were obtained through parent report. Therefore, it cannot be ruled out that their relations were influenced by the parents' ways of answering the questionnaires. Future research should corroborate the results with observational measures.

In conclusion, this study showed that infants at 18 months of age already pretend different emotions in order to play. In addition, this early capacity for pretending emotions is linked to certain types of symbolic play and vocabulary (and in a specific way, to the knowledge and use of emotion words), and could in part lay groundwork for the development of a theory of mind.

CONFLICTS OF INTEREST
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APPENDIX 1

Questionnaire about the expression of pretend emotions

Do you pretend or exaggerate emotions in front of your child in order to play? Does your child ever pretend or exaggerate emotions in order to play? Examples of this would be pretending to be in pain, cry, or to laugh.

		Never	Rarely	Sometimes	Very Often
Do you pretend	Anger				
	Surprise				
	Fear				
	Happiness				
	Sadness				
	Disgust				
	Other:				
Does your child pretend	Anger				
	Surprise				
	Fear				
	Happiness				
	Sadness				
	Disgust				
	Other:				