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Pragmatic study of agreement and refusal messages in young French children☆

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Abstract

The purpose of this study was to analyze how the gestural and/or verbal forms of agreement and refusal messages in young French children aged 21 to 27 months vary according to the social function they fulfill. Two types of messages were considered: assertives and directives. Children interacting with an adult were observed individually. The adult prompted the child to produce agreement and refusal messages of the assertive or directive type by proposing objects (puzzle pieces) that either fit or did not fit into the interaction situation (e.g.: 'Is this an X?', where X was/was not the piece being presented, or 'Should I give you the X?' for pieces that did/did not go with the puzzle the child was doing).

The results showed that the children's message forms varied with age (21 or 27 months), type of message (agreement or refusal), and type of speech act (assertive or directive). The different variations are discussed and show that by the age of two, children indeed have different forms at their disposal (gestural and/or verbal) for expressing agreement and refusal in accordance with the two types of speech acts achieved in these messages.

Keywords: Speech acts; Conventional gestures; Children's messages (of agreement, refusal, assertion, direction); Child language; Children's gestures

1. Introduction

This paper presents a pragmatic study of conventional agreement and refusal gestures produced by children right before and after their second birthday. Particular

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interest is paid both to how these gestures are combined with words, and how the resulting combinations vary with the social function these messages perform.

Research on children's pragmatic skills has flourished over the past ten years (Andersen, 1996), not only regarding children who already have some mastery of speech (Bernicot and Laval, 1996; Ervin-Tripp et al., 1990) but also during the prelinguistic period (Golinkoff, 1993). The pragmatic aspects of speech and communication are based on the social functions and extra-linguistic conventions that govern their use. Authors like Austin (1962) and Searle (1979), the originators of speech act theory, define the illocutionary component of an utterance as the social act (asserting, promising) performed by a speaker when the utterance is produced. In children, the development of communication relies both on the acquisition of a repertoire of gestural and verbal signals that become the constituents of messages, and on the ability to use those signals and interpret them in a way that fits with the social context. We know, for example, that when reformulating assertions or requests, very young children are capable of changing the form of their messages to adapt them to their addressee (Marcos and Bernicot, 1994, 1997).

Some of the gestural signals that enable a child to communicate with others are carried over into adult communication, forming the repertoire of conventional gestures, as they are called, which develops at the same time as verbal language (Guidetti, 1988).

Such gestures convey precise meanings that can be expressed in one or two words (e.g. 'yes', 'no', 'bye', 'come here') and are produced in the same way by all individuals belonging to a given cultural group. Unlike other hand movements that accompany speech, conventional gestures require an emitter, a receiver, and a message to transmit, as in language. They are produced using the upper part of the body, with either the head, the hands, the arms, and even the shoulders. Some are achieved in a single movement (e.g. shoulder shrugging) while others consist of repeated movements (e.g. waving goodbye); for still others, a simple posture suffices (e.g. 'be quiet', which in France is expressed by placing the index finger across closed lips).

At a more general level, conventional gestures should also be studied in relation to the recent perspective developed by Bonvillian et al. (1997), wherein "the roots of language are in gesture" (1997: 220). For these authors, the progression, in the history of humanity, from gestural communication to verbal communication occurred through the conventionalization of motor behaviors, which at first were icon-based (i.e. related in a non-arbitrary way to the concept signified). This same process would also apply to the set of conventional gestures as an independent culture-specific communication system individuals use to communicate when speaking is not possible (due to noise or distance, for instance; see Payrató, 1993) or during ordinary conversation, in order to reinforce, replace, contradict, or contextualize the spoken words. Conventional gestures have primarily been studied among adults, and the repertoires established in different societies exhibit extreme cross-cultural diversity. They are based on a shared code known by all members of the same cultural group. This accounts for why a given gesture may not have the same meaning in different cultures (e.g. a circle formed by the thumb and the index finger means 'money' in Japan, is an obscene gesture in certain countries like Brazil, and in France can mean

'zero' or 'very good', depending on the facial expression that accompanies it. Inversely, one and the same concept can be expressed gesturally in different ways; this is true, for example, of gestures of greeting, agreement, and refusal.

Few authors have analyzed conventional gestures from a pragmatic standpoint. One study by Kendon (1995) deals specifically with the production context of four conventional gestures observed in conversations in southern Italy. Kendon considers such gestures to be 'pragmatic' to the extent that they correspond to a particular type of speech act. In a review of the literature on adult gesturing, Payrató (1993) was the first to draw up an inventory of Catalonian gestures and to classify them according to their illocutionary value, in reference to the five speech acts defined by Searle (1979). The assertive category appears to be the most prevalent (representing more than half of the gestures compiled); assertives were followed by directives (22%) and then expressives, with the commissive and declarative categories containing the fewest instances (6% and 1%, respectively). According to Payrató (1993), these categories are not mutually exclusive insofar as the same gesture can have more than one illocutionary value, as in gestures of threat, which can be included in both the directive category and the commissive category.

The legitimacy of attributing illocutionary values to conventional gestures can be debated, to the extent that doing so involves applying a linguistic behavior categorization system to non-linguistic behaviors. This approach is only valid if one considers (a) that such gestures are acts of communication that can be produced and understood autonomously (i.e., without being accompanied by speech), and (b) that their illocutionary force is equivalent to that attainable through verbal expression. An example is telling someone to be quiet, which can be achieved in France solely in the gestural modality by closing the hand with the four fingers against the thumb several times in a row (with the palm facing downwards) or by placing the stretched out index finger across closed lips. As Austin (1962: 119) stated, one can speak of illocutionary value only in regards to conventional systems. This is indeed applicable to the gestures of interest to us here, since they are based on conventions shared by all members of the same cultural group.

In children, we know that few such gestures are produced before the appearance of the first words (some examples of early gestures are pointing with the index finger, agreement and refusal gestures, greetings and clapping), and that the repertoire expands as the child grows older. Except for pointing (for a review, see for example Marcos, 1998), early child gestures have scarcely been studied. We shall focus here on agreement and refusal behaviors, which appear some time after pointing at the beginning of the second year (Capirci et al., 1996). Gestures of this type have two advantages for the study of the emergence of pragmatic skills: (1) they are produced frequently during the prelinguistic period, and (2) they can have several illocutionary values (assertive or directive), as stressed by Volterra and Antinucci (1979) in one of the rare studies on this topic (though limited to verbal refusal viewed as an aspect of negation). In the present study, agreement messages will be treated as symmetrical to refusal messages, and the terms agreement and refusal 'behaviors' or 'messages' will be used insofar as we are interested in gestural forms that can be produced either alone and/or in conjunction with verbal forms.

The aim of this study was thus to examine the gestural and verbal forms children right before and after their second birthday use to produce agreement and refusal messages. More specifically, we shall look at how these behaviors vary in form, in relation to the child's first words and the social function they perform. In their role as responses to another speaker's propositions, agreement and refusal behaviors can indeed fulfill several functions. One can express agreement or disagreement with the propositional content of the other person's remark (e.g., 'It's a nice day' – 'Yes/No'), or indicate one's desire to have the other person do or not do something (e.g. 'Should I hand you the salt?' – 'Yes/No'). In the former case, the agreement and refusal messages are assertives; in the latter, they are directives. For Searle (1969; see also Vanderveken, 1990) four conditions must be satisfied for an illocutionary act to be performed: a propositional content condition, a preparatory condition, a sincerity condition, and an essential condition.

For assertive speech acts, when the child says 'yes, it's a nice day' in the above example or 'no, it's not a nice day', the propositional content condition corresponds to a description of the state of the world. The preparatory condition is the child speaker's belief that his/her description is true; the sincerity condition is the fact that the child confirms or does not confirm the description of the world expressed by the adult, and the essential condition for the child amounts to transmitting his/her mental state to the adult. For directive speech acts, when the child says 'yes, hand me the salt' or 'no, don't hand me the salt', the propositional content condition corresponds to the adult's future action (or non-action). The preparatory condition is that the adult be in a position to carry out the action; the sincerity condition is the child's wish that the adult carry out the action, and the essential condition is that message production amounts for the child to leading the adult to carry out or not carry out the action.

Our goal here, then, is to determine whether the form of children's agreement and refusal messages varies with age (21 or 27 months) and with the type of speech act performed (assertive or directive). One can assume that between the second and third years, the development of linguistic skills will play an important part in how children associate and combine gestures and words, as demonstrated by Capirci et al. (1996).

In the current state of research on agreement and refusal, it is difficult to make more precise predictions about the direction of the differences between the two age groups or between the two speech acts studied here. Regarding the latter, we can only attempt to verify the results of the Marcos and Bernicot study (1997) mentioned above, although it deals more generally with the development of speech acts in older children (two-and-a-half-year-olds) in a situation that was not aimed specifically at triggering agreement and refusal. We can predict accordingly that the number of gestural productions for requests will outnumber those for assertions, and vice versa for verbal productions.

2. Method

2.1. Subjects

Thirty-two children living in Paris (France) were observed. Sixteen of them were 21 months old (plus or minus one month) and sixteen were 27 months old (plus or minus one month). In each age group, there were eight girls and eight boys. The children were all from a middle-class background and their native language was French. They were filmed individually in one of the rooms of the day-care center they attended daily.

2.2. Materials

The materials consisted of two puzzles (P1 and P2) with six different pieces each: six toys for P1 (a train, an airplane, a doll, a ball, a car, and a boat, denoted a1, b1, c1, d1, e1, and f1, respectively) and six animals for P2 (a cow, a sheep, a horse, a rooster, a pig, and a dog, denoted a2, b2, c2, d2, e2, and f2). Given that the procedure was supposed to constrain the children to produce agreements and refusals, the task had to be easy enough for children of this age. To this end, simple puzzles with a board showing the locations of the pieces were chosen.

2.3. Procedure

Each child was placed in an interaction situation with an adult who prompted him/her to produce agreement and refusal messages that had an assertive or directive function. The child and adult were seated at a table facing each other, and the adult proposed puzzle pieces that either corresponded or did not correspond to the statement she was making. As Table 1 indicates, each child was confronted with two different situations.

The first situation (A) was designed to make the child agree or refuse by means of an assertive act; in other words, the child had to 'make a statement' about the truth of the adult's remark. The experimenter asked six questions of identical form ('Is this an X?') as she presented six puzzle pieces (three belonging to puzzle P1 and three belonging to puzzle P2). For three of the questions, the piece mentioned belonged to the puzzle the child was doing, and for the other three, it did not. An agreement message was expected when the question and piece coincided (e.g., the adult showed a pig and asked, 'Is this a pig?'), and a refusal message was expected otherwise (e.g., the adult showed a horse and asked, 'Is this a doll?').

The second situation (B) was designed to make the child agree or refuse by means of a directive act aimed at getting the adult to do something. The child was instructed to put together the puzzle placed in front of him/her using the pieces proposed by the adult. The experimenter asked the child six questions of identical form ('Should I give you the X?'[1]) as she proposed six different puzzle pieces. Three of the proposed

[1] The questions used in French ('*est-ce que c'est un X*', '*est-ce que je te donne le X*') were similar in structure since both began with '*est-ce que*', a common and simple way of asking questions.

Table 1
Materials and procedure

Subjects		Agreement	Refusal
1-4	*Situation A*	Is this? (right object)	Is this? (wrong object)
	Assertive messages	1–a1	4–a2 (showing d1)
		2–b1	5–b2 (showing e1)
		3–c1	6–c2 (showing f1)
	Situation B	Should I give you?	Should I give you?
	Directive messages	(right object)	(wrong object)
	'Let's do this puzzle (P2)	1–d2	4–d1
	I'll give you the pieces'	2–e2	5–e1
		3–f2	6–f1
5–8	*Situation A*	Is this? (right object)	Is this? (wrong object)
	Assertive messages	1–a2	4–a1 (showing d2)
		2–b2	5–b1 (showing e2)
		3–c2	6–c1 (showing f2)
	Situation B	Should I give you?	Should I give you?
	Directive messages	(right object)	(wrong object)
	'Let's do this puzzle (P1)	1–d1	4–d2
	I'll give you the pieces'	2–e1	5–e2
		3–f1	6–f2

Same table with situations A and B reversed for subjects 9–12 and subjects 13–16.

pieces belonged to the puzzle the child was doing, in which case an agreement message was expected (e.g., the child was working on the animal puzzle and the adult asked, 'Should I give you the dog?'), and the other three belonged to the other puzzle and therefore could not be used, in which case a refusal message was expected (e.g., the child was working on the toy puzzle and the adult asked, 'Should I give you the cow?').

Thus, in some cases, the child was forced to express his/her agreement or refusal of a proposal made by an adult who was in front of him/her. The social significance of this situation may be subject to debate, granted, as it may seem that asking a young child to contradict an unfamiliar adult is beyond the abilities of two-year-olds. However, this appeared to be the only possible situation that could be set up for now, given the scarcity of research on this subject.

As Table 1 shows, the testing order for situations A and B was counterbalanced, i.e., half of the children began with A and half with B. The order of the two puzzles was also counterbalanced. Moreover, in an attempt to avoid any systematic responding strategy for agreement and refusal, the six questions were asked in random order.

Three agreement messages and three refusal messages were expected in each situation (A and B), making for a total of twelve responses per child (six agreements and six refusals). For each type of message (agreement or refusal), there were three responses per type of speech act (assertive or directive).

3. Data coding

The children's responses were classified into four categories: expected responses, opposite responses, other responses, and non-responses. Expected responses were ones expressed in agreement or refusal terms ('yes' and 'no'). They could take on one of three forms: gestural, verbal, and combined gestural/verbal. In gestural responses, the child responded solely by nodding his/her head in agreement or shaking his/her head in refusal. In verbal responses, the child responded solely by saying 'Yes' or 'No'. For combined responses, the child used a gestural response in conjunction with a verbal response. In all three categories, the response could match the expected message, i.e., the child could respond with an agreement message when agreement was expected and with a refusal message when refusal was expected; these were scored as 'expected responses'. On the other hand, the child's response could be the opposite of that expected, i.e., the child could respond with a refusal when agreement was expected or with an agreement when refusal was expected; these responses were scored as 'opposite responses'.

The children also produced other types of responses. They were classified in the 'other' category. Some of these were correct responses and could be regarded as unconventional agreement or refusal forms. These included labelling, where the child named or repeated the name of the toy or animal shown on the puzzle piece (e.g. 'It's a dog'), which is in fact an unconventional but correct way of expressing agreement or refusal; and irrelevance responses indicating that the experimenter's question was not relevant to the situation (e.g. 'Not there'). The 'other' category also included more 'backward' responses such as pointing to the puzzle piece being shown or reaching out to grab it.

The final category was non-responses, which were grouped together with gibberish.

4. Analysis of results

Table 2 gives the mean number of responses per subject, broken down by type. Agreement and refusal messages (regardless of whether they corresponded to the expected response), for all age groups, types of messages, and types of acts taken together, represented 72% of the responses. The "other" category contained 23.3%, leaving 4.7% for non-responses.

In the analyses that follow, variations in the mean number of responses per subject were tested in a three-factor analysis of variance: age group (2: 21 months, 27 months) x type of message (2: agreement, refusal) x type of speech act (2: assertive, directive). Only between- and within-group differences with a significance level of at least 0.05 are reported.

Expected responses. As a whole, expected responses represented nearly 55% of all productions obtained. Age had an effect ($F(1,30) = 14.679$, $p < 0.0006$), since there were significantly more expected responses among the older children. The type of message also had an effect ($F(1,30) = 13.384$, $p < 0.0009$), leading to signifi-

Table 2
Mean number of responses per subject in each category (maximum 3 by type of message in each row)

Age (months)	Type of act	Type of message	Type of response			
			Expected	Opposite	Other	Non-response
21	Assertive	Yes	1.6875	0.125	0.875	0.3125
		No	0.75	0.875	0.9375	0.4375
	Directive	Yes	2	0.0625	0.9375	0
		No	0.4375	1.75	0.75	0.0625
27	Assertive	Yes	2.375	0	0.5	0.125
		No	1.9375	0.375	0.6875	0
	Directive	Yes	2.5625	0	0.375	0.0625
		No	1.4375	0.9375	0.5	0.125

cantly more expected responses for agreement than for refusal. There was a significant interaction between the type of message and the type of speech act ($F(1,30) = 6.756$, $p < 0.01$) indicating that for agreement, the expected response was given more frequently for directives, while the opposite was true for refusal, where expected responses were produced more often for assertives.

The results for the form of the *agreement and refusal messages*, expressed as a percentage of the total number of expected responses in the same category, are given in Table 3. For all speech acts, message types, and age groups pooled, the responses were 27% gestural, 21% gestural and verbal combined, and 52% verbal.

Table 3
Form of agreement and refusal messages in expected responses (percentage of total number of expected responses in the same category)

Age (months)	Type of act	Type of message	Type of response		
			Gestural	Gestural and Verbal	Verbal
21	Assertive	Yes	40.9%	16.7%	42.4%
		No	21.4%	16.7%	61.9%
	Directive	Yes	27.8%	36.1%	36.1%
		No	25%	12.5%	62.5%
27	Assertive	Yes	31.1%	31.1%	37.8%
		No	8.3%	19.4%	72.2%
	Directive	Yes	40.5%	11.9%	47.6%
		No	24.2%	18.2%	57.6%

The results were tested using the χ^2 statistic. Only between and within-group differences with a significance level of at least 0.05 are mentioned. Purely gestural responses in agreement messages outnumbered those in refusal messages, both for 21-month-olds ($\chi^2 = 6.45$, $p < 0.01$) and 27-month-olds ($\chi^2 = 20.79$, $p < 0.00001$).

The gestural modality alone was also used more often in directive messages than in assertive ones, but only by the older children ($\chi^2 = 8.07$, $p < 0.004$).

Responses combining gestures and speech were also more frequent as a whole in agreement than in refusal ($\chi^2 = 6.83$, $p < 0.009$). Gestural/verbal combinations were produced more often by 21-month-olds when the message was directive ($\chi^2 = 3.9$, $p < 0.04$), and more often by the 27-month-olds when it was assertive ($\chi^2 = 6.25$, $p < 0.01$).

Purely verbal responses occurred more frequently in refusal than in agreement, for both age groups (21 months: $\chi^2 = 21.16$, $p < 0.00001$; 27 months: $\chi^2 = 40.58$, $p < 0.00001$). Moreover, the older children's verbal assertive refusals outnumbered their verbal directive ones ($\chi^2 = 4.3$, $p < 0.03$).

Opposite responses. Opposite responses were infrequent, representing only 17% of all responses. Again, these were cases where the children did in fact produce an agreement or refusal message, but it was the opposite of what was expected. The results of the analysis of variance presented in Table 2 provide a better picture of these unexpected responses.

The age effect was great ($F(1,30) = 4.826$, $p < 0.03$), with opposite responses being much more prevalent for the younger children, and totally lacking for the 27-month-olds in situations where agreement was expected. The type of act also had an effect ($F(1,30) = 8.344$, $p < 0.007$), giving rise to a significantly higher opposite response rate for directives than for assertives. There was a type-of-message effect ($F(1,30) = 28.272$, $p < 0.000009$): opposite responses were mostly produced when a refusal was expected. The type-of-act by type-of-message interaction was significant ($F(1,30) = 10.614$, $p < 0.002$), indicating that most opposite responses were produced when refusals of the directive type were expected.

These results seem to reflect the children's overall tendency to agree – especially the younger ones – which, for the task proposed here, led them not to contradict the adult. This point will be discussed below.

Other types of responses. Again, responses in the 'other' category (see Table 2) represented 23% of the responses. This category contained a variety of different response types, as stated above. Given that less than a quarter of the responses fell into this category, it would have been difficult to divide up this category any further.

Broken down by type, they are presented here in order of how close they were to the expected response. Labelling (where the child named or repeated the name of the toy or animal shown) made up 35% of the 'other' category. Irrelevance responses (e.g., 'No dog') were rare (3.5%). Finally among the remaining 'other' responses, 61.5% were ones considered to be 'backward', where the child either merely pointed to the puzzle piece presented by the adult (13.5%) or tried to grab it (48%). The percentages with respect to the total number of 'other' responses in the same category are given in Table 4.

The χ^2 analyses yielded the following results. For labelling responses, there was a massive effect of speech act type, since labels were found in assertive messages only. Labelling was also done significantly more often by the older children ($\chi^2 = 13.62$, $p < 0.0002$). Irrelevance responses were only produced by the 27-month-olds, and solely in cases where the situation called for a directive refusal. Pointing

Table 4
Percentage of 'other' responses of each type (with respect to the total number of 'other' responses in the same category)

Age (months)	Type of act	Type of message	Type of response			
			Labelling	Irrelevance	Pointing	Reaching
21	Assertive	Yes	21.4%	0%	35.7%	42.9%
		No	60%	0%	6.7%	33.3%
	Directive	Yes	0%	0%	20%	80%
		No	0%	0%	25%	75%
27	Assertive	Yes	100%	0%	0%	0%
		No	100%	0%	0%	0%
	Directive	Yes	0%	0%	0%	100%
		No	0%	37.5%	0%	62.5%

responses were lacking in the older children. In the younger children, they were produced significantly more often in agreement than in refusal ($\chi^2 = 14.65$, $p < 0.0001$). Reaching for the puzzle piece was significantly more common for directives than assertives ($\chi^2 = 66.07$, $p < 0.00001$), and was non-existent in the latter case for the older children. This may be due to the circumstances in the directive situation, where the child's task was to fit the proposed pieces into the puzzle; rather than answering the adult's question ('Should I give you?'), they simply reached out to get the piece. These responses were also produced significantly more often for agreement than for refusal ($\chi^2 = 13.52$, $p < 0.0002$).

Non-responses. Non-responses were few and far between, representing only 4.7% of the messages. They did not occur at all for directive agreements in the younger children or for assertive refusals in the older children.

5. Discussion

The aim of this study was to find out whether the format of children's agreement and refusal messages varies with age (21 or 27 months) and with the type of speech act (assertive or directive). This goal was reached insofar as even the youngest children turned out to be capable of producing messages in different ways, depending on what speech act the messages were supposed to accomplish. In the current state of our knowledge on these issues, it was difficult to make any more precise predictions about the direction of the expected differences. Based on the Marcos and Bernicot (1997) study, we could only predict that the number of gestural productions would be greater for requests than for assertions, and inversely for verbal productions. The results obtained supported this hypothesis.

Our main goal was achieved as a whole, given the overall scarcity of non-responses (4.7% of all responses) and the small proportion of opposite responses (17%). Opposite responses were mainly produced by the younger children in situations where a refusal message of the directive type was expected. Apparently, when

the children had to do the puzzle, the most important thing was to accomplish that task (to follow the instructions telling them to put the puzzle together). This led them to start by getting the piece (either by responding in the opposite way to that expected or by reaching out), even if it meant giving the piece back to the adult when they realized it was not the right one. The children thus tended to agree at first in order to get the piece before checking to see whether it went with the puzzle being put together. In a situation like this one where children are interacting with an unfamiliar adult, contradicting or expressing disagreement may be difficult at this young age. This finding is worth noting, since the greater part of the studies on this issue have focused on refusal rather than agreement.

The expected responses (the 'correct' ones) represented more than half of the productions (55%). They will be discussed first in terms of their variations in number, and then in terms of their variations in form. Age had a clear-cut effect on the number of expected responses: the older children more often responded (agreed or refused) as expected. Although this is a typical developmental effect, note that in the age range studied (right before and after the child's second birthday), the difference between the two age groups was only 6 months. This period therefore seems to be a key period in the development of the behaviors observed here, as suggested by the fact that behaviors where the child pointed to the proposed piece represented 13.5% of the responses of the 21-month-olds, while not being produced at all by the older children. We can conclude from the developmental standpoint that this behavior is a more backward way of carrying out this task.

Expected responses were also significantly more frequent for agreement than for refusal. This may be linked to the finding noted above for the opposite responses, where the reverse tendency was found: the children were inclined to agree when expected to refuse.

Finally, expected responses also varied with the type of act (assertive/directive): expected responses were significantly more frequent for agreement messages of the directive type and refusal messages of the assertive type. This too may be linked to the fact that in agreement messages, opposite responses were scarce or lacking altogether (in the older children).

Looking at the variations in the form of the expected responses, for the three forms distinguished here – gestural, combined gestural/verbal, and verbal – we can see that verbal responses made up half of all productions. However, the children, even the older ones, still produced the other two forms, which confirms the fact that conventional gestural behaviors indeed persist during development and continue to play an important role in communication even after the acquisition of speech. As such, they should not be viewed solely as transitional forms employed before the ability to produce two-word utterances is acquired (Capirci et al., 1996).

Expected response form also varied with the type of message. Agreement messages were more frequently produced via gestures alone or by combining gestures and speech, whereas refusal messages were more often purely verbal. Thus, these two types of messages do not appear to be strictly symmetrical as one might have assumed. It is possible as Kendon (1995: 277) suggests – and this remains to be analyzed in greater depth with children interacting in more natural settings than the one

chosen here – that gestural or verbal behaviors are used to produce different 'communicative effects'. For example, for a shy child who is not sure how to respond and has trouble contradicting an unfamiliar adult, as we have seen, it may be less threatening to respond gesturally than verbally.

Responses that combined gestural and verbal forms also represented a non-negligible portion of the messages produced (more than 20% of the expected responses). Capirci et al. (1996: 668)[2] distinguished three functions in such productions: equivalency (the gesture and associated word refer to exactly the same thing), complementarity (gesture and associated word point to a common referent), and supplementarity (the gesture denotes a semantically different element from the one expressed by the word). It is clear that the combined productions observed here fulfilled the first function, and one can assume along with these authors that this form of production reinforces the message emitted by the child. Productions fulfilling the other two functions were not observed here; this can certainly be ascribed to the limited amount of variation allowed here by the experimental situation and the behaviors studied. It is likely that greater behavioral variation would have been observed in a more natural setting, or if other types of conventional gestures had been examined. But as stated above, a child's repertoire is limited at this age. Another consideration is the fact that cases of non-congruence or partial congruence between gesture and speech could also have been observed under these conditions, in which case gesture and speech would be in a situation of 'reciprocal contextualization' similar to that described by de Fornel in his analysis of adult conversation (1991).

Finally, the expected response form also varied with the type of speech act: gestural responses were more frequent for directives than for assertives in the older children, which confirms Marcos and Bernicot's (1997) result. As for combined gestural/verbal responses, such responses for directives outnumbered those for assertives in the younger children, while the opposite was true for the older children. The older children's refusals were produced more frequently in verbal form when the message was assertive than when it was directive. This can be further analyzed by examining the effects of the forms used. Again, the first two forms (gestural and gestural/verbal combinations) mostly occurred in agreement messages. In the case of directives, since the aim of the agreement was to prompt the adult to give the right puzzle piece, one can hypothesize that gesturing alone was sufficient to achieve what was at stake in the interaction. In contrast, when the response involved contesting the 'state of the world' expressed by the adult, a child wanting to do so – remember that agreement messages were produced significantly more often than expected – would use the verbal modality.

Labelling responses were produced only for assertives. These responses provided a logical alternative to an agreement or refusal; the child's naming of the object shown (e.g. 'It's a dog') validated or refuted the label expressed by the adult in the question asked. Reaching responses were also affected by the type of act, as manifested by their greater frequency in directive messages and their total absence for the

[2] Note that these authors studied all types of gesture-word combinations produced during the second year, not just conventional gestures.

older children in assertive messages. This may be linked to the experimental situation used here, where getting the piece to do the puzzle took precedence for the child over answering the adult's question.

Although studies like Darwin's (1872), Morris' (1977), and Jakobson's (1972) on the expression of refusal have shown, contrary to what is traditionally assumed, that cross-cultural universality of form does not exist, it is nevertheless normal in the present study to find little variation in the forms used, and in any case, much less variation than that permitted by speech (see for example the different request forms described by Bernicot, 1992). The children studied here were relatively young and came from the same cultural background. It is likely that if older children were observed in different situations, the gestural form variations would be greater, as suggested by Calbris (1990), who compiled ten or so different forms of refusal in French adults.

At the ages studied here, children have been producing and understanding agreements and refusals for several months, but the situation chosen was not applicable to younger children, for whom the study of the age at which these behaviors first emerge, of the forms they take on, and of the functions they fulfill remains to be conducted in more natural settings.

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