

Chapter 8

Multimodal Expression in Communicative Functions, Gestures, Vocalizations, and the Contribution of Early Musicality



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Abstract The communicative functions with which infants and pregrammatical speaking children use signs to interact with others have been the subject of different classifications, usually concentrated in one modality (gesture, word) or in bimodal combinations of gesture and word, or oriented by a particular criterion (for example, some were conceived thinking of types of signs, others of the illocutionary acts of utterances, etc.). With an integrative aim, we propose a classification of the communicative functions of oral, gestural, and combined modalities, also suitable to include signs of other types and especially designed to deal with pregrammatical expressive resources. The system of categories is forged in attention both to the structural scheme of the communicative act, bearing in mind its actors, roles, and component elements, and to the motives or intentions that lead pregrammatical infants and children to interact with others through behaviors performed, purposively, for the other to decode. This double consideration, together with the longitudinal recording of a single case during the period of first word combinations, allowed both to include categories usually omitted in classifications for competent speakers (adults, older children) and to exclude others that still require the acquisition of prior enabling cognitive skills. Three new categories are also posited, two of them liminal to the communication phenomenon, linked to musicality and multimodality, which allow conceiving the development of the child's semiosis as a continuity between precommunicative and later communicative dyadic behavioral skills.

Keywords Communicative functions · Precommunicative functions · Expression · Musicality

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8.1 Introduction

The idea of communication in early childhood is divided between two conceptions: that which implies connection or interaction between adult and child, a mutual ante-predicative understanding, and that which implies communication in a restricted sense, defined by the trait of deliberately exchanging signs about something (having intention, or *intentio*, in the meaning rehabilitated by Brentano in the second half of the nineteenth century). Put in other terms, there is, on the one hand, communication between individuals, where specifically saying ‘between’ excludes all content, and there is, on the other hand, thematic communication, deployed of course within the space *between-two*, but where there is room for a *what* or *aboutness*. If the first six chapters of the book that the reader has in his hands are devoted to the first version of communication, and if in Chap. 7 we started to talk about communication in a different sense (thematic communication), this chapter will continue with this second acceptance.

Under this perception, the operations by which the baby manages to understand that a fact refers to such-and-such other fact—that a movement, a facial expression, a particular morphology adopted by the hand, a glance, a turn of the head refer to something they are not—are essentially linked to social and learning situations. If an adult makes a pointing gesture at the baby’s sight, he/she will not achieve anything other than the attention on the tip of his/her finger. For him to be able to follow the imaginary line between the hand and some referent, it is necessary to have developed enabling skills that can only be explained from previous experience and the social framework. The connections between an expression and a content or empirical correlate start from experience, and the link obtains the necessary reinforcements from physical circumstances, from the agents responsible for the baby’s socialization and from cultural determinants (which are tacitly revealed through the action of these same agents). The communicative sign, from its emergence in adult-baby interactions, bears the mark of its fundamental utility, the mutual understanding with the interlocutors (who, literally speaking, only become so through the mediation of sign).

The functions historically distinguished in the study of language, centered on the descriptive-gnoseological uses of the word and the proposition, were later equated with other functions that scholars had considered to play a secondary role (even though Aristotle had already distinguished between a *lógos semantikós* and a *logos apophantikós*, respectively language understood in a broad sense and language only linked to the expression of propositional contents). At the core of the linguistic turn, Wittgenstein had pointed out that language has multiple performances: ordering, recounting an event, inventing a story, making a joke, pleading, thanking, greeting, etc. (Wittgenstein, 1953, §23). In the 1930s, Karl Bühler had suggested an outline ordering for all possibilities of language, whose general functions could be divided around the three grammatical persons. The expressive, appellative, and informative functions would respectively have their center in the first, second, and third persons (Bühler, 1934/1979). Subsequently, linguistics considered it appropriate to

distinguish a metalinguistic function from the informative function, since although both functions are concerned with informing, the latter informs exclusively about the language, which is both the content and the vehicle of expression. Later a poetic function was recognized (Jakobson, 1960), which could be understood as an extension of the expressive element in the subject, a subset within the expressive function, but between these two functions the link is not as immediate as that noted above between the informative and the metalinguistic function. Although it is clear that there can be no poetic function without expressive function, because the latter is the first communicative form of subjectivity, poetic skill requires much more than expressiveness (or else the technical expertise of poetic creation would be within everyone's grasp). In addition, two other varieties of language use constitute the most recognized cast of linguistic functions: the phatic exchange, for which the content of the message is thematically inconsequential, and the performative utterance, which enacts through signs what is uttered (Austin, 1962).

The growing interest in communication outside the limits of verbal expression brought with it, of course, research on the uses of gestures and other non-linguistic signs. In the 1970s, studies on infancy and early childhood identified, based on Austin's three types of speech acts, the successive arrangement of a perlocutionary, an illocutionary, and finally a locutionary phase (Bates et al., 1975, Chap. 2 in this volume). This implied that if in the first instance meaningful acts were simply by-products of infant behavior, they later became intentional and deliberately sought to be interpreted, and ultimately sought to be interpreted through institutionalized conventions that fixed the meaning of each term of expression.

If studies on infancy and early childhood made it possible to convert linguistic functions into communicative ones by revealing the utilities of the baby's expressions at a time prior to the appearance of the word and the proposition, the recognition and examination of bi- and multimodal combinations (to which Chap. 7 in this volume was devoted) made it possible to investigate in greater depth what the pregrammatical child could achieve, in terms of communication, before the juxtaposition of signs was ordered by rules or principles. However, the Brownian or similar categories, however much they may be detached from the propositional model to probe into the semantics of the first combinatorial forms, reveal nothing to us about the performances they satisfy. What are concretely the reasons why the child addresses to his interlocutor a gesture-word combination with agent-object or action-locative roles? Although all communicative signs are motivated by the will to interact, it is through effective and circumstantial acts of communication that the baby manages to refine the possibilities of his exchanges with the adult in such a way that this first will to exchange is broken down into more and more specific motives. Ergo, it must not be forgotten that behind the duples of juxtapositional structures (which allow us to understand how verbal and nonverbal signs are coupled), the form of expression and each content involved respond to specific intentions. In this scenario, the same sign combination could have been formulated from different behavioral aims. If the pointing gesture can be protodeclarative or protoimperative, the combination of 'I' + pointing on some object (or the utterance of the object's name) can pursue an informative purpose, highlighting that/the object is

mine/, or an appellative one (/give me the object/). On certain occasions, the goal of a certain utterance can only be established if the interpreter is aware of the melodic contour, the musicality with which it has been delivered (the interrogative purpose will be evident in the prosody of the verbalization); on other occasions, it will be the facial expression or the bodily attitude that can clarify the meaning of an oral utterance. The *in situ* consideration of the semantic duples or multiples will invariably be that which will provide access to the function behind the form.

In F. G. Rodríguez and Español (2019), we explored the field of different communicative functions. In what follows, it will be first discussed the criterion we have adopted for our observation code. Then a variety of examples of such functions (with single or combined signs) will be given. Finally, some borderline instances of the notion of communication will be examined. These instances contain features of primitive musicality intermingled with sign forms addressed to an interlocutor (discovering the continuity between primary dyadic exchanges and communicative ones). This continuity, readers will know from the previous chapters, is central to the idea of development in the narrower sense: it allows us to appreciate how the resources that structure the first relationship between a bay and an adult endure and intertwine with the subsequent communicative acts to appear, in other words with a more sophisticated type of socio-cognitive exchanges. In the exchanges with signs executed for decoding, the inaugural patterns of intersubjectivity underlie in a lasting way.

8.2 The Functional Classification of Pregrammatical Communicative Expressions

This section provides a concise review of studies on communicative functions in young children (Sect. 8.2.1), presenting their categories and discussing their problems. Then it is reported a single-case investigation conducted (Sect. 8.2.2) and is displayed the observation code developed for communicative functions prior to the emergence of morphosyntactic structures (Sect. 8.2.3).¹

8.2.1 From Linguistic Functions to Communicative Functions

As has been pointed out, the study of communicative functions has precedents in the exploration of language functions. Of these, the model that Roman Jakobson summarized in his text on poetics (1960), composed of the functions (mentioned above)

¹As in Chap. 7, some of the observations have been previously published in different contexts (Rodríguez, 2018, 2021) and are now offered in connection with others to delineate an overall assessment of multimodality in the beginnings of communicative semiosis.

informative, conative (appellative in Bühler), emotive (expressive in Bühler), phatic, poetic, and metalinguistic, has remained as a paradigm, a starting point and at the same time the target of assorted criticisms. One may immediately wonder why a research—such as ours—that wants to address the multimodal structure of adult-baby interactions would take into account a repertoire of functions originally conceived for the competent speaker *verbal* expression. The answer is that such functions are not of language, but have simply been recognized and studied in language before other modalities. Work on baby's gestures, vocalizations, and pregrammatical combinations has shown how deeply the purpose of correct sentences actually formulated is already present earlier in simpler and no less communicative sign varieties. A second objection to the adoption of the Jakobsonian model is that it does not allow us to inventory every utterance in an exclusive way. In certain cases, it becomes difficult to distinguish to which category a particular expression is more appropriate. In this regard, it can be pointed out, as the famous linguist had remarked, that there is usually a predominant function (Jakobson, 1960), even taking into account that in every expression there are harmonics or resonances of other functionalities. On the other hand, when this predominance is not sufficiently clear, the expression can always be included in more than one category. In any case, the investigation of communicative functions cannot be inhibited by difficulties of a methodological nature that can be remedied through appropriate clarifications. If, on the other hand, it is assumed that at the origin of communication is the will to achieve certain purposes *by means* of the other and to do things *together with* the other (again: protoimperative and protodeclarative gestures), research on communicative functions is linked to adult-baby interactions, and should have its first focus there.

The cataloging of linguistic functions has proliferated since the old model of Jakobson (1960), and the same has happened in the framework of prelinguistic functions (or pregrammatical, as would perhaps be preferable, since before the child forges sentences according to regulated structures he can speak, even if only half-language, and is therefore within language). Some works on pregrammatical communicative functions concentrate on certain signs: gestures, vocalizations, first words, first combinations of gesture and word. Others deal with some functions without aspiring to cover the whole arc of possibilities. The cataloguing of all the communicative variants of the child awaits the creation of a complete observation code capable of satisfying all specialists. Some attempts in this sense (Sarriá Sánchez, 1991, Rodríguez, 2021, Rodríguez & Español, 2019) are neither fully comprehensive nor multimodal and require completions.² In accordance with her multiaxial proposal, Encarnación Sarriá Sánchez explored communicative behaviors including, along with the more obvious and incontrovertible forms, the touching of objects and people, the action of pushing objects away, and eye contact. She divided the whole spectrum of the baby's communicative behavior into the functions:

²In terms of completeness, the system of categories for communicative functions developed in F. G. Rodríguez (2021) and F. G. Rodríguez and Español (2019), which is the basis of Sect. 8.2.3, fails to consider all the important aspects of the act of communication. This system is limited, as has been pointed out in the previous chapter, to the oral and gestural modalities.

object demand, help demand, interactive play with and without object, rejection, protest, and declarative expressions (Sarriá & Rivière, 1991). The first two make a distinction within the protoimperative, the third makes room for the ludic dimension, the fourth and fifth correspond to primary types of attitudinal expressions, and the last amplifies the gestural notion of protodeclaratives. The discrimination between different contents of asking (object, help) is replicated in different research (e.g., request for object, action or cooperation, in Muñetón Ayala and Rodrigo López (2011); request for information as a proto-interrogative gesture, in Southgate et al., 2007 and Rodríguez, 2009). All the ramifications around what the baby demands should be integrated, however, in a generic category: that of communications demanding something from another (conative *sive* appellative function). In our observation code (see Sect. 8.2.3), we have disregarded subdivisions for the basic communicative functions, not because they are not important distinctions, but as an ordering criterion to avoid confusion between levels, something that is sometimes overlooked.

A different case is the division of the declarative role in the pointing gesture, for which two variants have been recognized, the declarative-expressive function and the declarative-informative function (Tomasello et al., 2007; Cochet & Vauclair, 2010). The former is embodied in expressions that aim to share an experience with the interlocutor; the latter in others that provide a certain clue that the baby has noticed is missing in the adult. Rather than merging here the two alternatives into a larger category, as proposed for the various conative subfunctions, it is appropriate to make a pragmatic or *what for* criterion prevail, and therefore to separate the pointing gesture centered on referring from the pointing gesture centered on the transmission of information. From the pointing gesture, private functions have also been distinguished (Delgado et al., 2010; Lucca & Wilbourn, 2018), which have also been studied in the set of ostensive gestures (Rodríguez et al., 2009). These gestures, and indeed gestures in general, could fulfill exploratory, contemplative, self-regulatory, or other roles (see, e.g., Español, 2006), but as self-directed gestures they extend outside our field, which concentrates on communicative signs.

Classifications of gestural signs are very numerous, but they tend to be mostly established outside their functional applications. At the boundary between morphology and use, a distinction is regularly made between interactive gestures, made to moderate exchange with interlocutors, and representational gestures, which possess meaning, reference, or both independently of other gestures (Abner et al., 2015). Interactive gestures are not asemanic, but the meaning of their execution is always linked to representational gestures and context having connection or ordering tasks (they are the corresponding, in the gestural modality, of Aristotelian syncategorematic terms).³ This relative significance has been reason enough for some specialists to consider these gestures as non-meaningful (Crowder, 1996).

³Note that the designation 'representational' here encompasses more than in Chap. 7, where it only included iconic gestures, leaving out deictic and arbitrary gestures.

Murillo and Belinchón (2013), starting from the categories of imperative and declarative used in Bates et al. (1975), studied vocalizations as well as gestures and combinations, including a category for uses ‘others’ without further distinctions (accounting there for refusals, response to demands, play routines and spontaneous utterances). The result confirmed the relationship, “widely described in the literature” (Murillo & Belinchón, 2013, p. 483), between pointing gesture and declarative function, on the one hand, and on the other hand between reaching gesture and imperative function. The aim was not a structural rethinking of the uses of children’s expressions, but to evaluate how the different types of signs fit between the traditional categories of function. This bipartition between the imperative and the declarative allows us to appreciate the extent to which these categories enjoy acceptance and currency.

Sometimes, when the different functions of gesture are approached in an attempt to cover all its possibilities, there is some confusion between a functional and a formal criterion. This defect, Kong et al. (2015) point out, is present even in landmark texts such as Ekman and Friesen (1969) and McNeill (1992) (see a discussion in Rodríguez, 2021).

In an overview of head and hand gestures, Wagner et al. (2014) traces a useful inventory of gesture annotation systems to date, outlining, in two columns, function and form. In the list of the functions you find iconicity, metaphoricity, deicticity, emblematicity, shaping or placing, establishment of spatial relations, emphasis, emotion, etc. This enumeration, however, although it reflects the utilities of the gesture *qua* sign with particular characteristics different from those of other signs, does not discover what the gesture alone or in combination can effectively do by means of deixis or iconic representation. The deictic gesture, as well as the deictic word, can play distinct roles in the context of a communication.

Precisely in Kong et al. (2015) eight functions of gesture were distinguished: providing additional information to that supplied by the word, to enhance speech content, providing some meaning absent in the verbal utterance, guiding and controlling the flow of speech, reinforcing the intonation or prosody of speech, assisting lexical retrieval, assisting sentence re-construction, and non-specific function. Apart from the fact that this coding system is exclusively designed to investigate adult gestures during verbal communication, which leaves out the isolated gesture, the functions highlighted are not all communicative nor do they all correspond to the same primary level. On the one hand, primary and secondary functions seem to be mixed. For example, the functions of providing additional information and providing missing information in relation to oral discourse converge in the basic fact that gesture, in both cases, is a vehicle of information and not a manifestation of subjectivity. On the other hand, under the global category of gesture function, different cognitive competencies are included. For example, assisting lexical retrieval is not a communicative function, but an exercise of subpersonal rank oriented to naming. This is not irrelevant when studying in which general capacities the gesture intervenes during an act of communication, but it goes beyond the communicative field.

A recent study on baby gestures (Guevara et al., 2020) provides an update of the functions categories. These were first separated into ‘to others’ (communicative)

and ‘to self’. The uses of gesture in ‘to others’ functions comprise declarative, imperative, informative, interrogative, phatic, and evaluative functions. The declarative/informative discrimination follows the coordinates of Liszkowski et al. (2006, 2007) and Tomasello et al. (2007). The imperative and interrogative functions are part of what is more broadly referred to as the conative function, which concerns the sign behavior of appealing to the other *sensu lato*. The phatic function is linked to the action of giving and the evaluative function (“lifting an object as if it were a trophy [ostensive gesture] or clapping [symbolic]”—Guevara et al., 2020, p. 269) could perhaps be interpreted, rather than as a genuine intentional sign, from the baby’s perspective as an intended celebrating *ritual action*. In relation to what we are dealing with, this article, which in fact pursues an empirical objective, has the value of providing the reader with a well-organized state of the art.⁴

For language signs, pragmatically oriented authors proceeding from an inductive approach have recognized a wide variety of actions performed by babies and very young children, but this plurality also mixes levels, as is the case with gestures, and could be reorganized according to Bühler’s first discrimination. Dale (1980) distinguished fourteen functions (name; attribute; comment; tenses; request for present or absent objects; actions or permissions; request for information; nonexistence verbalization; reject; denial; affirmation; attention seeking verbalization; greetings and other ritualized forms; and unintelligible). On the one hand, these functions can be regrouped in the three aforementioned (or in other ways); on the other hand, some of the children’s actual utterances could not be counted in any of the categories (“thus unnecessarily swelling the category of ‘unintelligibles’”—Belinchón Carmona, 1985, p. 47). The difficulties therefore lie in how to achieve a template of functions that covers the largest possible number of communicative uses.

With this objective in mind, and in keeping with Searle’s (1969, 1976) theory of speech acts, Ninio and Wheeler (1984, 1988) proposed a system of categories that was comprehensive of both the utterances and the context of their production, but at the same time focused on the types of exchange, particularly child-adult exchanges. The result was a multifaceted inventory organized essentially around twelve categories of speech acts then divided into twenty-three classes according to illocutionary force (Ninio et al., 1994). Among the distinctions of this second group we find ‘Express sympathy for hearer’s distress’, ‘Express positive emotion’ and ‘Express surprise’, or ‘Ask a wh-question’, ‘Ask a yes/no question’, ‘Ask a limited-alternative yes/no question’, and for all these asking options the corresponding ‘responses’. In view of this, it seems legitimate to ask whether we are dealing with different functions or simply with the function of asking adapted to different interrogative contents and adjusted to different forms of questioning (more open or more closed questions). Even the supraordinal category ‘Questions and responses’ and the subordinate categories ‘Request for repeat utterance’, ‘Request/propose/suggest action’ and ‘Ask for permission’, separated respectively under the categories of ‘Demands

⁴From a similar point of view can also be consulted, focusing on ostensive and indexical gestures, Moreno-Núñez et al. (2020).

for clarification', 'Directives and responses' and 'Commitments and responses', can be integrated according to a fundamental principle of the conversational act: in all of them, the other is called upon to get involved, either to give an answer, or to follow an order or to take into account a warning. Likewise, the responses in each of these last four categories can be declarative, informative, or of other functional types. The cuts of this observation code are governed by the double guideline that concerns the *what* and the *how*, the generic thematic of the exchange and the different modes of interaction, but without clearly distinguishing the intentionality or functionality (in both cases abstract) of the signs themselves from the concrete act of communication. Thus, in the categories of the exchange a distinction is made between 'Discussing the non-present', 'Discussing a present event', 'Discussing the fantasy world' and 'Discussing hearer's thoughts and feelings', without grouping these different topics under the common *discussing* and without separating them on another level from 'Showing attentiveness' and 'Directing hearer's attention'. It may be somewhat necessary to dissociate here two different levels that are often superposed in texts on communicative functions. One of them concerns the functions of the signs, their signifying aptitude, and the other the functions of the act of communication as such, the latter understood as the kind of purposes that induce an individual to address an interlocutor, disregarding the content or the specific *what* (whether *this* or *that* action or thing). From this assessment, making the other attend to a certain object is only a function or a capacity of the sign: it can be achieved with gestural or verbal deictics (the gesture of pointing, names and pronouns, among other options). But what is essential in terms of communication is why we point to an object, whether to ask for it or to provide certain information to our interlocutor. Behind his communicative acts, the child intends to interact in one way or another with the partner, and to carry out this behavior he makes use of the pre-established qualities of signs (to locate physically in space, to represent, etc.). The lack of an adequate segregation between these two different functional aspects (the function of the sign as an abstract competence to do one or more things and the function that the sign undertakes in each circumstance, in a context that brings it down from its *a priori* or abstract limbo and that turns it into a sign at the service of concrete purposes in the framework of real communicative exchanges) can diversify the establishment of basal categories in an inconvenient manner.⁵

In the context of language acquisition, an inventory in Spanish and Catalan (Serra et al., 2000) that was formulated for the first one hundred word-types of the corpus Serra-Solé (1995) distinguished three sets of functions: (i) personal, social, and expressive functions (contemplating greetings, rejection-acceptance, expressions for completion of actions), (ii) regulative ones (requirements of different types –not to be confused with self-regulatory uses), and (iii) informative ones (which include both naming and the provision of various data regarding the referent). In this case, the three types of functions do not fully coincide with the Bühlerian ones,

⁵An applied work of Ninio and Wheeler's category system, extended beyond verbal communications, can be found in Rivero (2010) and Rivero García (2012).

since in (i) there is a mixture of phatic aspects, such as greeting, and elements of exchange with the peer that would be, together with (ii), part of the communicative behaviors ordered by the second person. This interweaving ends up revealing that the triad of Bühlerian functions is at least partially problematic, because, for example, not every expression that requires the other as a co-protagonist (as a receiver from whom a reaction is expected) fulfills the same utility at the basic levels. Interacting for the pleasure of interacting and rejecting a request from the other are both communicative functions but correspond to essentially different interests, which could only be homologated by allowing a criterion of grammatical persons to prevail over that of intentions as such.

According to these reasons, the determining of fundamental categories for communicative functions is open to revision and refinement. On the gesture side, McNeill's coding has dominated over others, but often overlooking the fact that in the interest of this researcher, gestures that are not produced synchronously with verbal discourse, which places the focus on adult discourse, and those that the individual does not generate spontaneously (precoded gestures), are marginalized. On the language side, and apart from what has already been pointed out, the categories have almost always been conceived for speech and have neglected multimodal forms of communication.

8.2.2 *From an Empirical Study on Communicative Functions in Early Childhood*⁶

In F. G. Rodríguez y Español (2019) we thought it wise to start from a classification that was known in different disciplines more directly or indirectly linked to the study of communication (psychology, linguistics, semiotics, pedagogy, philosophy of language, etc.). At the same time, we were careful not to choose an instrument with categories that would equivocate different functional levels (macro and micro degrees, inclusive and included varieties on the same general level) or with some other type of overlapping. The literature of these disciplines mentioned and the double criterion of exclusion and non-confusion between levels led us to consider the aforementioned classification of Jakobson (1960) plus the performative use of language (the conventional heptad). Because of its degree of disclosure, this set of categories is open to debate and allows for the contrast of statistical results between

⁶As in other chapters, observations indicate age using Piagetian nomenclature: 1; 2 (3), meaning one year, two months, three days. Double quotation marks appear for oral utterances and single quotation marks are used to indicate the mention of a term or phrase. The meaning of gestural, oral or bimodal utterances is entered within pairs of oblique lines /xxx/, with inner parentheses/xxx (yyy) xxx/recovering missing elements in the child's utterance, required for its proper interpretation. The absence of one or more phonemes is indicated by an underscore: x_ xx (e.g., _anks/ thanks/). The absence of a complete syllable is indicated by a hyphen: x-xx, -xxx, xxx- (e.g.: -nana/ banana/).

different fields of research. As we have highlighted, we understand here that Jakobsonian functions are not merely linguistic functions, but extend to the broader space of communication. Anyone can easily think of examples, remembered or imagined, with which most of these functions can be satisfied pragmatically, without utterances, using only gestures, vocalizations, isolated words or proto-words, different options of bimodal combinations and behavioral resources that in certain circumstances are loaded with meaning.

Yet, if the aim is to deal with all communicative functions and if it has been decided to start from language, why not start from categories strictly conceived to examine the pragmatic side of verbal events? Why not start from a schema configured for the illocutionary register? Austin (1962) provided a taxonomic scheme of five classes of acts: veridictive (issuing a verdict or evaluation), exercitives (tending to act on a course of action or an event in progress—to endorse or stop it), commissives (implying, for the speaker, some responsibility for a previous speech act), expositives (offering points of view, references, and arguments), and behavitives (reacting to the behavior and states or vicissitudes of others, encompassing actions of thanking, congratulating, applauding, criticizing, protesting and challenging, among others—which counter-intuitively links interpellative motions with uses of the phatic function in the Jakobsonian categorization). As Searle later argumentatively formulated, Austin’s discrimination would not be at its core about illocutionary acts but about illocutionary verbs (among other deficiencies: “The most important weakness of the taxonomy is simply this. There is no clear or consistent principle or set of principles on the basis of which the taxonomy is constructed”, Searle, 1976, p. 8). While taking this first attempt as inspiration, Searle offered us his version, also of five classes: representative, directive, commissive, expressive, and declarative illocutionary acts.

The most important conclusion to be drawn from this discussion is this. There are not, as Wittgenstein (on one possible interpretation) and many others have claimed, an infinite or indefinite number of language games or uses of language. Rather, the illusion of limitless uses of language is engendered by an enormous unclarity about what constitutes the criterion for delimiting one language game or use of language from another. If we adopt illocutionary point as the basic notion on which to classify uses of language, then there are a rather limited number of basic things we do with language: we tell people how things are, we try to get them to do things, we commit ourselves to doing things, we express our feelings and attitudes and we bring about changes through our utterances. Often, we do more than one of these at once in the same utterance. (Searle, 1976, pp. 22–23)

Without going into details, the following problem arises. The directive and commissive acts, distinguished by the way in which the receiver is involved (respectively, to comply with a mandate or to be benefited by the fulfillment of some promise by the sender), both *contain*, as total acts and in an inescapable way, the interlocutor as a decisive factor. This point, well understood in the so-called conative function, happens to be a structural feature of coincidence between Searle’s two classes, overcoming any difference at the level of *what to do* and *how to do* it. Although this scheme replaces Austin’s original descriptive approach with a pattern ordered to the basic functions of the speech act, it falls short of the necessary structural constraints that regulate all communication. Our research, although oriented to the pragmatics

of the acts of signification addressed to an interlocutor, did not remain tied to the *pure* illocutionary, but crossed the illocutionary parameter with the coordinates of the formal structure of communicative processes as found in Jakobson's text. Indeed, it was understood that the places and parts of this structural diagram were a setting of primary relevance, to which the different ways of thinking about the motives of the agent-sender in his intended meaningful act had to be accommodated.

Of course, this tentative category system was subjected to an appropriate survey (although with the limitations of having worked with a single case). Before starting the research, which sought to explore uni- and bimodal communications during the period of first word combinations (approximately 19–27 months, here extended to 29 months and also taking into account gestures, vocalizations, and combinations), some communicative functions observed informally were added, others were split or integrated (in accordance with the criterion of homogenizing all functional types at the same level) and others were discarded which, due to their definition, did not seem likely to be found in a child of this age. The observations were made on an adult-baby dyad. The baby, Bruno, is the youngest son of the author of this chapter. The place of the adult in the interactions was taken by one of the parents or by the babysitter, thus trying to prevent stylistic biases caused by the interaction with only one interlocutor. The video recordings, 15 in sum, were made every 20 days at the child's home. Each videotaping lasted 30 min. The sessions used toys (cars, balls, cube games, insertion games, etc.), storybooks, and everyday objects that varied according to the theme of the game and the space in the house where the interaction took place (child's room, living room, kitchen, etc.). In each session, the adult initiated the exchange by proposing some activity (reading a story, playing with toy cars, etc.) after which the baby was left free to act. The typical session took place with the two interlocutors sitting on the floor, facing each other, at a distance of approximately 1–1½ m. Care was taken to ensure that the two bodies were always within the image frame of the camera.

Preliminary observations led us to reexamine the Jakobsonian classification from a strictly psychological and developmental approach, focusing on the logic of the cognitive processes involved in each particular function. Accordingly, adjustments were made to the initial code. The following is a brief account of the most important decisions made on the set of categories of communicative functions adapted from the Jakobsonian linguistic functions.

The traditional declarative, informative, referential, descriptive, or denominative function was split into a declarative function proper, comprising communications in which the referent is verbally alluded to or highlighted by a deictic gesture (or both at the same time, forming a combination of equivalent or complementary type—see Chap. 7), and an informative function proper, in which, more than an identifying act, a predicative contribution on the referent is recognized. Respectively, the child can make a pointing, use a personal pronoun or name the object ('dog') or can, on the other hand, signify a certain feature of the object (/big/, already verbalized, already by opening his arms wide). The difference is important and clearly corresponds to different cognitive processes, albeit in the field of language it seems to have been largely overlooked (despite the fact that it had been properly

distinguished at the origin of language discussions, in the Platonic texts of the mature period and in Aristotle—*onomázein* vs. *légein*).

Along with this, a second function was separated, now from the expressive function and centered on the communicating subject: the *attitudinal function*. This is embodied in the responses to demands or proposals received from the interlocutors, which reveal the attitude or predisposition of the sender in the face of such requirements. While the expressive function involves personal demonstrations that the subject can even deliver without witnesses (although not in cases of communicative exchange), this could never happen in the attitudinal function, because it implies the reaction to that which comes from the interlocutor. This makes it possible to establish a second comparison. If in the conative function it is a matter of the subject demanding involvement from another, in the attitudinal function the vector of interaction is inverted: the sender receives from his partner an interpellation, some kind of exhortation, or simply registers a message to which he cannot remain indifferent. In the first case, the subject engages the other, in the second case he is engaged. Finally, it is necessary to dispel another possible confusion: that of the attitudinal function with the informative function. Even if the child's intervention can in both cases be reduced to a 'yes' or a 'no' these adverbs may not have a truth value (for lack of correspondence with external reality) but may be the vehicle of the personal positioning of the individual being interpellated. The informative function may contain erroneous data (the adult to the child: 'Is the blue T-shirt in your room?'/conjectural answer: 'No'/correct answer: 'Yes'). The content of the expression with informative function can always be corrected by virtue of the objectivity of the fact referred to, while on the contrary a response of the attitudinal function is by principle incorrigible, since it reflects an entirely subjective positioning ('Shall we go to the park?'/ 'No').

A function called *echo* was also isolated, which, during the earliest stage of language acquisition, comprises repetitions in which the child picks up the last segment of what was said by the adult. It is usually a word or a fraction of a word modulated with varying degrees of correctness. Sometimes the child repeats this word once aloud and then keeps mumbling it to him/herself. There seems to be no reason for this behavior other than to master new sounds or to understand their referential link or meaning. The child seems to be adding a term to his mental lexicon, although on certain occasions this same replicative action was observed with known words. In these cases, the echo was limited to an isolated and loud reproduction, without the sequential whispered reiterations.

Bearing in mind the stage of pregrammatical communications, the poetic, metalinguistic, and performative functions were in principle suppressed from the Jakobsonian Canon. Regarding the first, nothing reasonably suggests that a child with limited skills in the use of signs can forge structures in which it would be pertinent to speak of a poetic or creative vein. If the poetic function implies the use of tropes and rhetorical figures, at least combination and selection (Jakobson, 1960), and that these various mechanisms are also used with the aim of engendering a particular aesthetic experience among the receivers of the message, it seems difficult to claim that such a skill can be realized with the restricted lexicon of a child who

barely combines two or three words. Novelty exists, of course, in the child's expression, in words and gestures, but there is no right for this to be considered an aesthetizing or embellishing exercise regarding certain underlying content. The spontaneous and novel expressions of children of this age do not have to do with a will to formulate in different ways a basic message, but with the effort to externalize, with the available resources, a thought for which the child lacks the correct name. Let's take an example. It was common that towards the end of the research, whenever Bruno detected a paddle sticking out of his grandfather's sports bag, he would pick it up and place it on his body like a guitar. He would move his hand over the widest part as if strumming the instrument and sing invented songs, mostly of arbitrary sounds, humming or intermingled syllables. It can be seen then how the paddle can be transformed into the guitar (or the spoon into a comb—see Chap. 7) by playfully being given the role of this musical instrument. This *functional transplant* is obtained by endowing the present object with the movement and sound of the absent object and placing it on the corresponding bodily space. But is this substitution enough to assume that there is a metaphor here? Did Bruno really want the other to notice in the replacement a plus of significance such as that which, according to the norm, is to be expected of any metaphor, or has he simply made an assimilation between two things of similar silhouette? It is necessary to take precautions against the lurking confirmation bias (against the precipitation of easily finding early metaphors). In any case, if there were a metaphor in this example, because we define it only through the mechanism of replacement, it would not be a metaphor with poetic eagerness oriented to the creation of meaning effects.⁷

Other examples may restrain our tendency to see metaphors in the expression of young children. At around 29 months Bruno made these three statements (which are not in the video recordings, but are written down as scenes from daily life). Sharing

⁷It is to be understood that to speak of a multimodal metaphor, or of "metaphors we live by" (Lakoff and Johnson 1980/2003), suggesting that there is a metaphorizing cognitive lever that orders our elementary experience of the world, responds to an extra-linguistic and extra-semiotic concept of the term 'metaphor'. From this approach, the metaphorical crosses all other expressive-communicative functions, because it is grounded at the level of the most fundamental experience. That there is a level of conversion between different cognitive domains (or modalities) and that this entails a certain platform for the *a posteriori* creation of linguistic metaphors, is a whole topic that cannot be discussed here. It is only asserted, according to the traditional notion of metaphor, that young children, with little lexicon and who speak by means of word juxtapositions, do not possess the capacity to deliberately create metaphors or to aspire to say things in an original way. A metaphor in the strict sense implies that something with a name can be meant in a different way. Consequently, metaphor requires, as a condition of possibility, the alternative of choosing between at least two expressive varieties. When the child designates some object in an inadequate but understandable way, the amount of appropriateness that this name may have, capable of producing surprise and even approval in the adult receiver, does not imply on the part of the sender that there is any will or *savoir faire* in the substitution carried out. The whole phenomenon can be explained, in the vast majority of examples, by means of an assimilation between the misnamed object and other similar ones, to a varying degree, of which the name is known. Therefore, it is not a case that the child proceeds through a sign selection, but, on the contrary, that he/she is obliged to proceed from his high vocabulary restrictions.

with his father the reading of a picture book, the father would point to some object at every turn and ask what it was. On a certain page, the adult pointed to a ship with sails that, amid large waves, was making a somewhat complicated navigation. Bruno explained: "It's a boat that is swimming". On another occasion, while watching a cartoon on TV, he made this remark: "Captain America throws a wheel" (in reference to the circular shape of Captain America's shield). Finally, on one occasion, Bruno approached his father, who was working on the computer. When his father noticed Bruno's genuine curiosity about what he was doing, he could not resist the temptation to start asking "What is this?" and put various desktop objects in front of him. At one point, when showing Bruno a pendrive and instructing him how it should be inserted into the console, he asked, "What is this?" and the child replied "It's a screw for the computer." In all three cases, if we adopt a broad criterion, the three sentences may lead one to say that Bruno has been able to metaphorize, because within his answer there is a sort of, or certain amount of creativity. It is not unusual for adults to be left wondering about the way children refer to things through infrequent descriptions. But in truth, in the answers provided we see something that can be explained without invoking metaphor and by the concept of overgeneralization (the use of a word beyond its accepted boundaries and occurring in the absence of convenient names). Bruno said of the boat that it was "swimming" not because he wanted to generate some nuance for the idea of moving through the water, but because he had no words to describe the movement of the boat. Now, although at this age the lexicon is insufficient, the physical-functional characteristics of things lend themselves to associations that carry with them the names of known objects. Thus, the action of moving to advance in the water, called swimming in living beings, was applied by Bruno in the case of a vehicle. The vocabulary clarifications will come later, when the child understands that to swim is to move in water only if the mobiles are living beings, and that if what moves is a boat, it navigates (*navis*). The difference between swimming and sailing does not concern the notion of movement nor its physical medium (the liquid), but the mobiles, living being/non-living being. The discrimination between the two seems to exist before the first year (Mandler, 2004, 2008) without a verbal correlate. For its part, the assimilation between wheel and shield does not require further comment: everything is there in sight, in the form of the objects. Finally, the screws do not have encrypted information (like the pendrive), but Bruno associated this new object to an already known one because the pendrives are very small pieces, like the screws, and because these are inserted into other things (they are insertable objects, which he calls 'screws' indistinctly).⁸

⁸ Although the older brother, Marco, did not participate in the research (outside of occasional intervention), we have records of some of his cognitive-communicative progress that serve to exemplify what we are discussing. At 2 years and 11 months, Marco used to proclaim "Now is the day" or "Now is the night". On a certain family walk, during a dark night, he suddenly saw a brightly lit shop window, pointed there and said with certainty: "There the day". It could be attributed to this expression a creative purpose, which, however, resents the possibility, more clearly, that in his concepts of day and night it is not yet a question of an hourly cycle, of the sun and the moon, but of diaphanousness and darkness. The day exists where it can be seen, even if it happens in the space of a room with lamps on. Are we before a metaphor, before an event of pure semiotic creativity, or before concepts that the child still has to polish?

In short, it was understood that the poetic function depends on the sender having a certain mastery or ability to select among expressive resources. The over-interpretation of parents and researchers has led to find the metaphor in children's graces or mistakes. If the child makes a mistake, the error can be associated with the correct denomination and, in a confirmatory spirit, put on the sender an inventiveness above his real possibilities and communicative purpose. Accordingly, we assumed that it was not to be expected in this instance to find interventions with a poetic function.

Similar reasons led us to eliminate the metalinguistic and performative functions from our observation code. The decision was flexible so that, if cases were documented, the measure of exclusion would be re-examined. In principle, by concept, it seemed difficult that a child beginning to link words or to form bi- or multimodal combinations could inflect an utterance on itself, taking some sign element as its thematic content. At this developmental stage, gestures and words are directed at objects, situations, and characteristics. The split between an object-language and a metalanguage requires syntax skills with which to encompass one plane in a higher one. The intuition whereby we dismissed the possibility of finding such interventions at this age was that rising to a metalinguistic level requires two enabling factors: a vast vocabulary, so that language can talk about itself, and a certain awareness of language so as to distance oneself from it and turn it into content (in other words, an awareness that allows not only to think *with* words but to think *about* words).

In relation to the performative function, this presupposes, in the oral modality, verbs that are actually verbs, not mere words, as is still the case with pregrammatical children; secondly, verbs that when enunciated perform the very thing they are enunciating; thirdly, that they are conjugated in the first person of the present indicative; finally, that the content of meaning has, in the mouth of the enunciator, genuine performative validity. The present indicative is the child's first verb tense, and at the beginning the child uses the first person or the infinitive (which are very different forms in Bruno's original language, Spanish), but verbs do not become conceptually real verbs, distinguished from adjectives or nouns, until they are accompanied by a subject; before that they are only an effective voice in the context where they have been uttered. On the other hand, performative verbs often imply subordinate clauses ('I warn you that X', etc.); where this is not the case ('I congratulate you', 'I forgive you'), the problem remains of assessing whether the child understands what he or she is doing when using them. In addition, these are verbs that are not usually part of the first vocabulary. Under this perception, we started from the idea that cases of performative function would not be found at this stage.

It will surely be surprising that the recognized first communicative function, the performative, which appears in the beginnings of gesturing in the form of protoimperative and protodeclarative, may lack a corresponding space in our classification. Although the child lacks the aptitudes to use linguistic signs in this role, in the matter of gestures, the deictics (pointing, showing, etc.) would be performative. Now, gestures pointing or showing are used both to share (protodeclarative) and to demand-request (protoimperative) or to inform (Tomasello et al., 2007). In this way, performative deixis fulfills different objectives, and these objectives are in fact the

functionalities behind the signs. The performative so called is thus in the declarative function, in the informative function, and in the conative function. This is tantamount to establishing that performativity is not as such a function, but a dimension of the sign. It would be possible to postulate two dimensions of signification, one performative and the other non-performative. If deixis communicates in a performative way, this does not imply that this performative condition is in itself a function (a communicative act with the same rank as providing information or demanding). If performativity is not the motor of any expression, it is therefore not a type of function, but a register in which certain signs operate. It has to do not with a *what for*, but with the very nature of certain signs to enact what they utter. This is the reason why not even deictic gestures are an argument for including a performative function in our observation code.⁹

8.2.3 Observation Code

Our observation code resulted as follows (nominal and operational definitions, examples, and discussion of borderline or controversial cases are included).¹⁰

Declarative Function Expressions that involve recognition and naming of objects, facts, or properties. The declarative function intends only to orient the interlocutor according to the referent without adding other types of information. The underlying cognitive process is an identificatory act. The subsequent expressive act only seeks to make this content transparent to the interlocutor. The sender uses the signs to mark *this-here* (or *there*). Operationally, the declarative function can be realized by an allusive deictic or representational (iconic) gesture, by different types of oral utterance (a name, an onomatopoeia of nominative—not predicative—purport, a certain non-lexical vocalization that in relation to the context is sufficiently clear as to its designative purpose) or by a certain combination, unimodal or bimodal. In the case of deictic expressions, whether gestural or verbal, the declarative is limited to

⁹Kendon (2004) separates between referential content gestures and pragmatic gestures. The latter have, on their part, different functions. They are *modal*, when they give a glimpse of the sender's position; they concern the partitioning of stretches in the speech act (*parsing* function); they are *interactive* or *interpersonal* (regulating the turns in a conversation or identifying the addressee of a message); or they are *performative*. But performativity is not defined here in our own terms. According to Kendon, "In [some] cases a gesture may have a *performative* function, as when it is used to indicate the kind of speech act or interactional move a person is engaging in. For example, the palm-up-open hand may be used as a way of indicating that what the speaker is saying is 'offered' to the interlocutor, perhaps as an example or as a proposal" (Kendon, 2004, p. 159). But, as has been argued, the performative in this gesture can *function* as part of a subjective emotional manifestation, as a declarative, informative or conative utterance. The fact that performative gestures were by the same author called, in a previous text, 'illocutionary marker gestures' (Kendon, 1995), gives us confirmation that the idea of performativity is taken in a broad sense, different from the one adopted here.

¹⁰The quantitative results of the research can be found in F. G. Rodríguez and Español (2019).

a localizing act and the sign does not carry any characteristic of the referent. When a name is used, on the other hand, there is a categorization (verbal or representational gesture), which places at the level of the expression certain properties of the alluded entity (for example, by saying ‘dog’ the dog is distinguished from the dresser, while by saying ‘this’ the sign does not reflect differences between the two objects). Both the pointing gesture and the nominative verbalization, when they occur in isolation, could lead one to believe that a declarative function unquestionably takes place there. However, both alternatives, if they are, for example, a response, may have an informative function. If the adult were to ask ‘Where do we sit?’ and the child were to say ‘Chair’, the noun in this case (and others like it) constitutes an apocopated version of the truth-valued mental structure/*we sit on chairs/*.

An expression with an imitative gesture can also be declarative. At the age of 1;9 (23), Bruno was sitting on an armchair and discovered in a corner of the living room the toys not put away from the previous day; a little car with which he had been amused stood out, and looking at his father, he made with an open hand, palm down, the gesture of moving it from one position to another. To confirm he had understood, the father asked, “The car?” to which Bruno nodded his head in the affirmative. When asked if he wanted it, he verbally expressed, “No”. He just wanted the interlocutor to see what he had recognized.

Informative Function Expressions with attributive intent and implicitly or explicitly possessing propositional structure (S is P). Unlike the expressive function (see below), which can also have a skeleton of subject and predicate but with fully subjective attributions (‘this is horrible’), here the attributions can be ascertained and are, consequently, objective descriptions (‘the pencil is red’). As soon as something is objectively true or false, its assertion can be rectified (‘the pencil is brown’). If declarative-type expressions consist of the structure of a certain this-here (or there), this function carries the idea of this-that (or so) or this-such (or which).

As in the previous category, the informative function can be realized by isolated signs (gesture or word) or by combinations. The simplest imaginable case of combination is that of a supplementary combination (see Chap. 7), where the gesture points to the object and a verbalization couples a feature (or vice versa). In 1;9 (11), in a lunch situation, Bruno burned himself on the first spoonful of food and spit it out. In view of this, the mother invited him a new mouthful by blowing on it to cool it, but Bruno, distrustful, looked her in the eyes, pointed to the food and said “Burns” (supplementary attribution: */this burns/*). The logically bicomponent structure of the attribution may also require only a single sign. In a dialogue situation, the adult could formulate a question, for example, ‘Where is the slipper’, and the child could perfectly well respond with a localizing-informative sign (recall Tomasello et al., 2007), or with an adverb of place, ‘There’ (or another type of word, depending on the question). Even if the child’s quantitative contribution is only one sign, it is

cognitively ordered with the sign previously provided by the interlocutor and configures a propositional structure.¹¹

Conative Function Expressions that actively involve the co-participant as the one from whom a response or reaction is expected. In this sense, this function implies requests, orders, claims, and questions. More than the rest of the functions, it highlights the need of the fellow human being that every person experiences at the fundamental level. The conative (appellative or directive) can be produced with or without interjections, names, or vocative idioms (such as the Argentinian ‘Che’). The demanding or commanding tone is evident in the semantics of verbal or gestural signs as much as in prosodic markings (increased volume in imperative requests, special melodic contour in inquisitive uses, etc.).

At the age of 1; 8 (2), during a beach vacation, Bruno was playing on the beach, surrounded by his family, digging with both hands in the sand to make a well. He remembered that he had a plastic shovel that he used every day. He looked around and since he couldn’t find it with the naked eye, he stood up and went to where his father was. He stood in front of him and waited for him to notice his presence. When this happened, he pointed to the place where he was digging the well and said “Come on!” in a tone of complaint. The father understood and went for the shovel. Bruno returned contentedly to his task, thus confirming that it was the object he desired. He had only pointed to what he was doing and had employed a term of many uses, leaving in the limbo of the unexpressed precisely the name of the object; but from the silence to which the shovel had been confined, it became evident by context and the adult was able to reinstate it as another element of the message uttered.¹²

¹¹ Support in the environment corresponds to a basic premise for the effective expressions of this stage. At the age of 18 months and with few words, Bruno’s brother, Marco, saw reappearing at the front door, welcomed by his mother, the person who the week before had started to work on the domestic chores. She greeted him, smiling, but Marco only managed to make a noise (a harsh, dull, intense throat sound) that none of the bystanders (father, mother, the maid) could associate with anything. Then he headed for his room, stopping every three or four steps to make sure he was being followed. He stopped before the closet doors, waited for the others, and opened them wide. Then he repeated that mysterious noise and pointed to the vacuum cleaner. Now it was clearer: seeing the maid, Marco had suddenly remembered that in previous days she had cleaned with that appliance. When he first made the noise, the vagueness of the utterance and the lack of context made it impossible to understand what later, through a sign combination, was a reference to the cleaning tool. With the gesture of pointing, the noise—now associated with a particular object—became onomatopoeia without any problem. The person of the maid had evoked in Marco a certain activity, and the two expressions (first the sound and then the gesture-sound combination) were a predication with the structure /she + that artifact/, which without any forcing can be equated/ to /she (used) that artifact/. /She/, because she was present, did not need to be signified. The redundancy between gesture and vocalization, both concerned with the same object by means of different ways of signifying it, was therefore laterally referred to the human figure that triggered the whole process.

¹² The verbalization of this episode is no more than emphatic, but by marking, through gesture, what it was about, the tacit element could be understood with a pointing to the place where the well was being made. By the way, this is a combination that does not respond to the standard categories

Expressive Function Expressions intended to notify a personal feeling, impression, or appraisal. It must be considered that the expressive—or, among different denominations, the emotive—*communicative* function is less than the expressive function *sensu lato*, because the subject can make use of the gesture or vocalization in an environment without other people, or that includes other people without the expression being addressed to them. Accordingly, a unimodal or bimodal combination, an isolated gesture, an isolated word, an onomatopoeia or an interjection fulfill the purpose of communicating when they are formulated, with varying degrees of awareness, for a fellow human being and seeking to initiate or prolong an exchange. The element of expressiveness, which of course is invariably present—in one form or another—in every human manifestation, is here affected to give deliberate public testimony of subjectivity.

A word or a phrase may be informative in terms of a first aseptic description, but when a certain prosody is added to it the same content may procure nuances of anger, contentment, irony, or many other subjective marks. The interjection and the emphatic or emotionally charged gesture are signs naturally affected to perform this function, but the modalizers of language, the subjectivemes, the *pianissimo* or *fortissimo* of the act of emission, the vocal or gestural melody (since also the gestuality puts in view of the observer the affective tenor of the individual) modulate personally the content of the message. In 1; 10 (14) Bruno exclaimed, almost in a shouting tone, “There’s water!”, when he detected a puddle formed on the kitchen floor, at the base of the refrigerator, revealing his surprise. At another time, without the emphasis of this episode, this could simply be a notifying act.

Attitudinal Function Expressions with which the subject positions himself before an intervention of conative function on the part of the interlocutor. Unlike the previous function, here there is no subjectivity displayed *motu proprio*, so to speak: out of nowhere, but as a reaction to requests or demands coming from outside. The attitudinal function is never a first movement but rather a response to an intervention of the other. Thus, in the cognitive sphere, it is not only emotion that is at play here, but also, in a prevalent way, processes of the propositional attitude type (from which this function takes its name). The mentalistic verbs (to believe, to think, to think, to think, to wish, to hope, etc.) reveal the predisposition or the attitude that a certain idea awakens in the individual (to believe that p/not to believe that p). The expression of the subject is sponsored by something previously manifested by the interlocutor and to which he/she joins or from which he/she departs.

At the age of 1;8 (25), a few days after the summer vacation mentioned above, Bruno was visiting his grandparents’ house with his parents and his brother. He was playing alone in the back garden. At one moment, his father called him to continue the play inside the house. He heard clearly, made eye contact with the father, but did

(as has been stressed in the previous chapter), because the signs are not redundant, nor do they imply, as in the supplementary combination, an attributive compound. In this case, the gesture highlights what is at issue and the word is a sign of exhortation (“Come on!” = /help me/).

not get upset. When he was called again, in a firmer tone, he stared at the father, drew his right arm back, as if retracting it, gathering momentum, and then vehemently thrust it forward, the index finger prominently outlined from the rest of the fist, pointing at the one who was bothering him, and uttered at the same time, very simply, 'No'. The gesture underlined to whom the refusal was directed in the oral modality. The meaning was crystal clear: /no to what you say/.

Before the child can construct subordinate sentences, his or her still limited semiotic capacity is nevertheless quite competent of pronouncing on the contents of another's expressions (suggestions or proposals to be replied to). At the stage of the first combinations the child can verbalize 'Don't want' (whatever), or reject by means of a gesture, or combine both modalities, but it is enough for him/her to administer the adverbs of negation or affirmation or the equivalent gestures. The 'yes' or 'no' that the child expresses as an attitude is indifferent to truth conditions, proper to the informative function.

Phatic Function Expressions that seek only the care of the communication channel. The content of the message matters in them less than the mutuality practice as such (it is hierarchically below the pragmatics at stake). Needless to point out how the protoconversational legacy (from the time when vocalizations and physical forms of contact were the sole support of the adult-baby relation) seeps in here. At a certain point, these marks of origin endure throughout life. Along with contents of increasing semantic complexity, interactions continue in part to run on tracks in which the message is less relevant than the interpersonal nexus.

The phatic function is tied, at this early time, to conventions of the pragmatic level, to words that open and close conversational exchanges, to certain language formulas ('hello', 'excuse me', 'thank you', 'please', 'bye'), to the equivalent gestures and to rituals that must be performed to fulfill learned routines (for example, clapping when a goal is achieved, e.g., raising a tower of cubes). These are canons of initiation, maintenance, and completion of communicative exchanges. All these and other words and gestures for framing communication were not only part of Bruno's sign repertoire, but he was able to use them with ample solvency, without errors, placing them in the appropriate places. Among Bruno's pragmatic skills at the beginning of the period under study, he not only respected the verbal standards of channel maintenance, but, despite his limited lexicon, he used to employ any words, regardless of their meaning, to keep their place in a dialog. At the age of 1;7 (13) he used negation as a crutch. He answered with 'no' to questions that he understood perfectly well could not be satisfied in that way. Because he was focused on something else, he answered without answering, draining the words of their meaning: the 'no' had become phatic for the sake of saving face and making the other feel that, somehow, he was not unaware of what he was being told. At other times, without even bothering to de-semanticize a word, he sustained the turns of the interaction with asemanic vocalizations, interjections ("Hmm", "Uh-hu") repeated for no rhyme or reason. In other cases, without taking his eyes off a toy he was playing with, Bruno would respond to the interpellations by raising his shoulders every turn: the adult would speak to him and he would comply, as if by reflex, by performing

this physical act. The adult would insist, come back with another question or comment, there would be a minimum of silence, and Bruno would perform the gesture again as if by automatism.

Echo Function Expressions in which the child repeats what was said by his interlocutor in the previous moment without semantic or pragmatic link to the topic of the conversation. The fact that the repetitions observed were mostly new words leads us to think that the echo is mainly aimed at incorporating them into the child's lexicon. Bruno used to repeat the new terms in the adult's utterances as if he wanted to modulate what he heard and to reaffirm its meaning content. Whenever the interlocutor's utterance consisted of more than one word, the repetition took the last segment (from where the name for this function has been selected). In certain (few) cases Bruno repeated known sounds, perhaps to retain the application of the term to a different context. Of course, neither lexical acquisition nor the use of words in new contexts can ignore the ever-present ludic component, which could in itself serve as an explanation for these repetitions.

Even if these repetitions were related to the expansion of vocabulary, which could indicate that the child speaks for himself, the communicative nature of the echo function cannot be questioned. The repetitions were made while looking at the adult and remaining silent for a few moments, as if to clear a space for the pertinent corrections to be made. After that fraction of time, the expectation ceased, Bruno adopted a more relaxed attitude and seemed to be sure that he had understood and reproduced well what he had heard. On certain occasions, the repetition was altered prosodically and turned into an interrogation. This factor, if there were any doubts about the communicative character of the echo function, dissipates the controversy, since for the echo a previous and triggering stimulus-emission is necessary, and this comes from the others. As much as that, the other is necessary as a receiver of the repetition. The gaze suspended in the adult seems to endow him/her with supervisory attributions: power of veto and rectification for what is badly reproduced. The cases of eco-interrogation should be counted doubly in quantitative analyses (as echo function and conative function), although strictly speaking the echo seems to be subordinated to the intention of clearing the doubt with a response from the adult.

As in the phatic function of this period (where the child's intervention can even be de-semanticized), the echoic performance seems to go against the transmission of information and defy the idea of a communicative exchange. The difference lies in the fact that, while in both cases the topic of the dialogue is neglected, the phatic function does so in order to preserve the channel, whereas here the verbalization detaches itself from the dialogue and refocuses on the signic matter of the exchange. In the observations made, the conversation could be about clothes, and if at some point the adult named a garment that Bruno did not know, he lost the thread of what was being said and remained pending for the new term, which he tried to repeat.

Before our study began, Bruno emulated isolated words or words he had amalgamated. If he would hear "This", he would say "This"; if he would hear "Good night", he would repeat: "_oo_night". The echo, however, was confined to the last word in long sentences. When he was aged 1; 6 (18), sitting with his brother in front

of the television, as the latter wanted to inform him what the character on the screen was called ("This is Ben Ten"), Bruno replied only with "-en Ten". The strategy lasted throughout the whole period, especially on words he heard for the first time or noticed for the first time, and of which he often could not mime more than the last two syllables. This even at times when he could string together series of several signs in verbal modality. For example, in 2; 4 (1), when he heard: "Let's drink milk", he replied with certainty: "No, not milk, - - fier! /pacifier/. Milk Ma_co/milk (for) Marco/. In 2; 4 (7) he questioned the brother": "This -puter yours?" /Is this computer yours?/. But at the same time, he was still imitating the new words defectively. At 2;4 (24), an adult instructed him: "This is a racket", and he repeated: "-cket"; "This is an accordeon", "-_cordeon". This implied that progress in the elaboration of sentences did not imply discarding the resource of repeating where he encountered the same difficulty as in the early days.

The learning hypothesis for interpreting the expressions of the echo function and the modulation of the words heard in a question tone could suggest that we are dealing with metalinguistic uses. After all, the child repeats in the form of an interrogation and thus enquires about an element of the language. However, it should be noted that the child is inquiring about the relationship between meanings and signifiers or about the proper diction, not about the conceptual contents of what he is saying. Saying 'White begins with w' or asking 'Is nice an adjective?' are metalinguistic uses; the prosodic formulation of a question that repeats in echo what is heard (X) rather corresponds to '¿Is this X?' or 'Is this called X?', or to 'Do I say X correctly?'. In these two cases, the pattern of correctness rests exclusively on mimesis and not by grammatical theory. Everything metalinguistic concerns the structure of the language, not the referential usage. Therefore, what the echo gives to language learning is limited to two non-metalinguistic fields: the gymnastics of sound and the semantics centered on the naming act. It is indeed as if, in the echo function, the child was performing *magna voce* what later the working memory will do silently by means of the phonological loop, but at the same time, as if the echo were intended to prolong the life of a certain sign not for a short period of time, but to last in the vocabulary.

Although at this stage we have reported that, within the oral modality, there are only repetitions of lexical items, the precedent of the echo function is to be found in the repetitions that the baby makes in prelexical protoconversation, with which he learns to modulate, as in a mirror image of the adult, the phonemes of his language. Echoic reproduction evolves from the vocalizations themselves to lexical items. Then there seems to be a splitting of this resource into two parallel paths. From one side, hand in hand with the growing understanding of vocabulary, repetition can become a ratifying act (see below) and cease to play the role of mere reflex or rehearsal in order to link sound and referent. From another side, the echo continues in the form of longer and more complex reproductions. An example of the first alternative is when, at the age of 22 months, the father made the following remark to Bruno, at mealtime, showing a box of food to be prepared: "Here is the food inside". Bruno reproduced phonetically wrong: "food-side", but he understood what he was saying and validated the previous paternal affirmation. At a later stage, after the first

mimetic babbling, the echo enters, as we can see, at the service of other specific communicative purposes. A curiosity of this particular repetition is that Bruno has no longer blindly copied the final part of the other's utterance, but has selected those elements that are semantically relevant: *where* and *what* (adverb of place and object). At first, the child's utterance seems to be limited to the final section (recency effect); later he becomes independent of this condition and extracts the meaningful pieces of the total construction. As an example of the second derivation of the echoic function, the following example can be given. At 2;5 (1), Bruno heard: "It does not seem to me", and he reproduced, with limitations: "Not seem to me". But soon after, in the same session, he heard: "It is of the same color", and he immediately replied the whole sentence with impeccable diction: "It is of the same color".¹³

In all the productions in the service of the echo function, it should be noted that, even if they are mostly oral, there are also cases of gestural realization. For example, in 1; 9 (17), while sharing with his mother the reading of a picture book, Bruno made a contact pointing on each of the figures that she had also touched with a pointing immediately before to accompany the names of things. The mother would say 'horse' and point to the corresponding picture on the pages of the book, then name another figure and point again, and so on. Bruno kept silent, but pointed in turn, after the mother, each illustration. In no case did he repeat the names, only the gesture of contact.

This behavior cannot be justified as gymnastics to learn new names, since Bruno knew those names and had opted not to repeat them. Perhaps it was just a matter of being able to understand by doing what the other had identified with name and contact. The following event was registered prior to the beginning of the investigation [1; 4 (19)]. Once again, Bruno was in front of a picture book, sitting on the floor next to his nanny. At the end of the reading, the nanny looked at Bruno and said "Bye-bye" to each of the drawn animals, making the manual gesture of saying goodbye ("Bye-bye, giraffe", "Bye-bye, panther", etc.). Complying with the protocol of proto-conversational exchanges, Bruno also made the same gesture, while observing that the adult had finished before.

Finally, the observation code included two categories for expressions of an imprecise type: the dubious function and the 'other' function. Finally, the observation code included two categories for expressions of an imprecise type: the dubious function and the 'other' function. Although the desire to communicate was evident in both, the pragmatic motivation behind the signs could not be understood, either because of diction defects (in the oral modality) or for some other reason. As already

¹³ It is appropriate to recall here the example from the previous chapter in which Bruno transfers from the oral to the gestural modality an element of the other's intervention. The mother had told him: "It's not a cookie, it is a noodle" and immediately clarified "You don't eat it". Bruno copied the message by taking the negation to the gestural modality and preserving at the speech level, as a question, only one word: "Eat it?". This had been interpreted by us as a case in which the total input, perhaps a very demanding verbal production, had been decompressed and split into two modalities for the relief of the sign processing system. The example can here be inserted between the echo function of single final elements (the last word) and the longer reproductions that keep the modality of the input unaltered.

discussed, while the cases where two functions disputed the main role without it being possible to decide which was more important were counted in the two functions indistinctly, the category ‘dubious function’ gathered those expressions for which not even one function could be clearly established. These were cases in which the signs, within the circumstance in which they had been produced, did not allow any recognizable purpose to be discerned. This can be illustrated with a combination of deictic gesture + demonstrative pronoun: in certain situations, this combination fulfills a declarative function, in others an informative one, and in others it consists of an undecidable communication. Apart from this dubious function, a space was left for gestures, vocalizations, or combinations not foreseen in our categorization (other-function).¹⁴

8.3 Within Our ‘Other’ Category

Up to this point, our system of categories has merely taken a traditional code in the field of linguistics and adapted it to an early stage of the child’s communication, contemplating not only words but also preverbal vocalizations, gestures, and bimodal combinations. The qualitative review of the other-function put us on the track that for its anomalous cases, at least for some of them, tentative groupings could be formulated. In principle, we managed to distinguish three new types of functions that cannot be assimilated to the categories of the code from which we started. As can be seen, two of these three types lead us beyond semantics, since on certain occasions the signs obliterated their decoding, whether they were gestures or words, and thus relinquished their value as such. In other occasions it could happen that the use of orality or corporeality was *per se* significationless: oral and physical behavior seemed to return to the parameters of the most elementary interactions, where movement and pure sounds prevail, under the guidelines of early musicality. In this way, thus, it goes beyond the frontiers of communication, at least regarding the notion of communication used in the previous chapter and again called upon at the beginning of this one (meaningful intended actions).

Next, the three new function types identified within the other-function are defined.

¹⁴Tangentially it can be added, in order to make the relevance of these two categories visible in our results, that the other-function and the doubtful function had a high frequency and ranked third and fifth among the total categories. The sum of their two frequencies brings them to second place, only behind the informative function. This was a singular and somewhat uncomfortable fact, as it hinted that some central consideration could have been omitted in the coding. It was the same deficiency that Belinchón Carmona had pointed out in Dale’s categories (see above, Sect. 8.2). However, the fundamental categories of all the other codes consulted had been contemplated and others of our own had even been added. Modulation restrictions, coupled with the ambiguity of certain situations, must be counted as partially causal factors in these results. In any case, this problem began to mend when we took a closer look at the interventions within the other-function (see Sect. 8.3).

8.3.1 *Ratifying Function*

Expressions that support an assertion made by the interlocutor. It differs from the informative function because, unlike the latter, it does not provide new information of any kind, but rather lends an endorsement to what the other has said (an endorsement which, by the way, had not been requested, so that the expression has arisen without being the response to a query). It is not an expressive function either, since there is no spontaneity or manifestation of a free opinion. The child seconds with his intervention something stated by the interlocutor, and does not do so as if it were an echo, but rather by giving evidence of being on topic and of having grasped what was said by the partner. He does not offer a point of view or stance in relation to a proposal received (attitudinal function), but rather supports a descriptive content. Even if the form of ratification sometimes implies repeating literally what was said before by the other, there will only be a ratifying act when there is at the same time a genuine understanding of what is being discussed. As a last distinctive feature, this function cannot be confused with the phatic function because, centrally, what is relevant in it is not the care of the channel, but what is signified.

At different times, and according to his increasing semiotic and communicative skills, Bruno would accompany what he was hearing from the adult by means of gestures or words. It could be with an adverb, used as a corroborative ('Yes'), or with any term by means of which he made his agreement evident. For example,

Observation 1: 1; 11 (26). The mother asks him what liquid is inside a glass, and he answers correctly, "Water." "There is a lot of water in the glass, isn't there?" the mother then clarifies, and he approves by repeating "A lot" and assenting with his head. Since he usually distinguishes 'a lot' from 'a little', the repeated word has an appropriate semantic and pragmatic meaning. The degree of ratification could have been provided simply by the gesture, but here it takes place by a bimodal combination.

Observation 2: 2;5 (1). Sitting on the floor in a play situation next to the babysitter, from a scattering of toys around him Bruno picks up a cylindrical can that was originally the wrapping of a doll. As the doll was somewhere else, he did not expect to find any object inside the can. Finding something out of place there, he makes an astonished face. Noticing this expression, the nanny looks inside the can and says: "There is something inside". Bruno confirms: "Yes". She recognizes the object and adds, without looking at Bruno, "Something Mom bought you". Bruno confirms: "Yes". She asks: "What is it?", and he answers precisely: "Go-gos" (the name of the type of doll). With his first two interventions, Bruno validates what the interlocutor says.

Observation 3: 2; 5 (5). A few days later, the nanny informs the father, who had just come home from work, clearly intending Bruno to hear her: "Bruno ate all the chicken today". Bruno immediately endorses the statement, showing impeccable grammar: "Yes, I ate all the chicken".

The forms vary over time, and expressions of greater complexity appear, but in the three cases referred to, the function remains the same.

Ratification is not necessarily affirmative. Also with negation a statement is assented to. For example, when Bruno was 2; 3 (13), he once heard his mother complaining, because they were in a hurry, that she was sure she had left a jacket

hanging on the back of a chair and now it was no longer there. She said aloud, with Bruno at her side and the chair in between, “I had put the jacket here [slapping the palm of his hand on the back of the chair]. But it’s not here any more! It’s gone!”. Bruno looked at the back of the chair and then said, “No, not here” also nodding his head in denial. Of course, negation, no less than affirmation, can be found in an informative, phatic, expressive, or attitudinal role, or appear within an echoic expression, but it can *also* be used in ratifying acts.

8.3.2 *Completive Function*

Expressions that serve to accompany perceived actions or facts. On certain occasions Bruno looked at an object or took it in his hands and performed a specific action, attaching the complement of sounds that can be regularly heard that the object makes, either by itself or when it is used. It may happen, for example, that something falls from the table and when it hits the floor, cushioned by the carpet, it barely makes a sound; in these cases, Bruno could replenish the sound of the impact (“Pam!”). The uses of sound correspond to perceptual habits: to the universal fact that most phenomena possess a certain multimodal complexion. This function uses the oral modality and the gestural modality to couple sound or movement where the sedimented perception indicates that they should be. Sonorization does not constitute here a semantic use of the oral modality, but the operation of restoring the missing sound in a play activity. On the gesture side, it is applied to make visible a movement that, according to usage, is associated with objects and actions of objects. In the playful context of the young child’s interactions, these effects of reproducing image or sound, like the special effects in a movie, are additions that reality conjures up, as if it also wanted to show all its faces or modalities in the expression. In play situation, these completions add to the imaginary sphere a certain multimodal depth that aids verisimilitude.

Observation 4: 1; 8 (13). Bruno is playing with a water pistol at grandma’s house. With each shot he vocalizes “Pjjjjjjj!”, a sound that he matches in time with the movement of extending his arm towards several targets, followed by a retraction breaking the elbow. The pistol was empty, so it did not imply squirting at the targets of the shot. For his part, the onomatopoeia added nothing to the sufficiently clear action of the game, but since every shot produces some clatter, which he knows well, he must therefore add to his shots the clatter that did not come from the pistol. After a few shots (at the dog, at the birds, at the flower pots in the garden and at family members who cross him), he aims at the father, then sitting a short distance away. The weight of the pistol has tired his arm and he is unable to keep it steady, in line with his target. He lowers his arm and points with his other hand. Now he fires the shots with his empty hand, letting out a “Pjjjjj!” each time. He has replaced the pointing gesture with an object by a pointing with the hand that merges into a representational gesture. In this replacement the onomatopoeia was not affected. For the hand-pistol, as previously for the toy pistol, the missing detonation was restored by the human voice. Double substitution: first, oral-iconic (the sound of the shots in the form of onomatopoeias); then, from playful pointing by means of an object to an empty hand gesture.

Observation 5: 1; 11(6). Bruno is dragging a toy car along the floor and suddenly makes it take off as an airplane. As he moves it in the air he begins to make a roaring engine sound. It's as if the sound of the game brought the game closer to the fact of a real airplane takeoff. The car is more of an airplane when the sound of the engine gets louder.

The same recipe of adding sound occurred on other occasions, but it also happened that the reproduced phenomena increased their degree of reality through gesticulation. More than once, Bruno played at crashing vehicles into each other (miniature trucks, motorcycles, cars, ships, spaceships). At the moment of the collision, he would release the objects he had crashed, would free his hands and, with open palms, would bring them from the inside out, abruptly, as if describing the expansive force that was to be produced. It could sometimes happen, the most normal thing, that he would make an onomatopoeia of explosion, but also that the movement would sketch, mute, on its own, the expected effects. In all these cases, the body showed by means of gesture a fact of reality. What was evoked through the contribution of visual information could never have been provided through sound. It is thus verified that the completive function is enacted in one, in the other, or simultaneously in both modalities.

Observation 6: 1; 9 (15). Bruno picks up a toy motorcycle and accompanies its rolling on the ground with an oral emission that goes from the beginning to the end of the movement. He exclaims a long "Aaaahhh", forcing his throat (as if to make sensitive that it is a rough engine noise).

Observation 7: 2; 3 (5). The father carries Bruno upright with his left arm in front of the medicine cabinet. The father is looking for something on the shelves and Bruno sees behind a bottle the toothpaste of Schrek, the animation film character, with which he and his brother brush their teeth every day. He points to the knob and simultaneously looks at his father. He then places his index finger and thumb in an L-shape and makes the gesture of rubbing them together as if with a toothbrush. As he performs the movement, he produces a sound on the soft palate, harsh and muffled, "Jjjjjjjj-jjjjjjjj-jjjjjjjj", which sounds like a saw. The movement is rhythmic and at each change of direction, to one side and to the other, the linked sound is paused.

Insofar as it is isomorphically linked to phenomena, the completive function implies the reproduction of objective features. Onomatopoeias, because of their iconic quality with respect to the referents, are the archetype of oral modality expressions for the completive function (although they are not necessarily associated with it). In fighting plays with his brother, or in combats between dolls, Bruno simulated sounds of blows or pain ('boom!', 'ahhhh!', 'pow!') and performed theatrically, very committed to the movements and sounds he had to reproduce. When two dolls engaged in hand-to-hand combat, Bruno's output reflected the impetus with interjections of exhaustion, grunts of fury, and languishing moans.

The completive function is governed by the purpose of repeating the structural imprint of the phenomena of experience, which appear to perception, in general, as multimodal in nature. This multimodality would then attempt to replicate itself in the expressions with completive function, as if the multisensory force of reality somehow crept into the baby's enunciative and gesticulatory behavior. This is not surprising, because it also occurs in adults.

Unlike what happens with the activity of attunement, where the adult picks up certain amodal qualities from the child's behavior, here it is a matter of how certain modal characteristics of sound and form reclaim each other to compose the integrity of the phenomenal fact. What we can appreciate in this propensity for completeness is why we make a sound that would not be necessary, or emulate with the body a physical feature of something signified, at the same time, by words. The perceptual contents of each modality are interwoven in the phenomena of the world, in our way and possibility of experiencing them, and this is the antecedent so that later, when we express ourselves, we tend to replace the missing parts. The perceptual solidarities that we observe are those that we are later inclined to regenerate by following those vestiges.

In the example of the motorcycle, the long vowel that accompanies the movement of the toy should not be credited as a sign without prior examination. 'Wow', 'meow' and 'mooo' are consummate onomatopoeias, because their degree of iconicity is such that there can be no doubt about the animals to which they refer. But does the hoarse sound "Aaaahhh" refer to the noise of a real motorcycle? Rather, it seems that the movement has been completed with a random oral emission. The emission only had to coincide with the movement of the motorcycle from the start to the stop point. The sound without the motorcycle would indicate nothing; folded to its motion, it is the hoarse sound of the exhaust pipe. Orality brings of itself an element that becomes a sign only through the relationship with other components of the context.

8.3.3 *Philo-musical Function*

It consists of interventions where the corporeality or the sounds complete each other according to the model of the previous function of completion, but no longer to reflect the reality of a fact, but to organize a communicative experience according to the principles of musicality. Interventions of this type are regulated by the sonorization of movement or by actions to *imaginarize* sounds in space. Unlike what happens with the previous function, the whole completion has here the musical structure with which dyadic exchanges *temporalize*, *qualify*, and *narrativize* intersubjective contacts (see Chap. 2). As we have discussed, the musical bias cognitively metabolizes shared experiences. It is worth paying special attention to the fact that we are dealing, rigorously speaking, with forms. While in the completive function contents are replenished (the toy falls from the edge of the table and the impact against the floor is translated into the oral modality with a vehement 'pum!'), the musical filiation of this new function is seen in that it does not mimetically reflect anything of reality, even where the qualitative characteristics of the sound (pitch, spectrum) are imposed, but organizes the expression in rhythmic-melodic temporal units harmonized between the modalities. This is why it is possible to distinguish between the two functions by appealing to the dichotomy between content and continent. The completive function adds to a concrete expression a feature that is already part of

the referent as such (it respects in its content a given entitative organization); on the other hand, with the philo-musical function it happens, by its affinity with elements of musicality, that it organizes *forms*, configures *motu proprio* the material of movement or of sounds from which it has made use of. It *contains* in its forms, in a musical-creative way, a given experience.

Observation 8: 1; 8 (3). Bruno turns the pages of a storybook and repeats, over each individual action, an imprecise interjection. The sound is vowel-like at first, a sort of 'æ', then ending in an aspiration 'æj' and finally reduced to the velar sound 'jjj'. The variation in the oral modality kept at all moments the format of the timing of the action. One utterance for each sheet movement. Similar examples in which an iterative action receives a reinforcement of orality were documented at very different times during the observation period, ranging from the beginning to the end, when Bruno could already elaborate multi-word grammatical sentences.

Observation 9: 2; 2 (29). Bruno was putting the pieces of a concluded game (magnetized letters) in their corresponding box. At the rhythm with which he introduces each letter he makes a vocalization: "Ti" (the first time), later "to-to-to...". Then the mother asks him if he has finished and he gives a negative answer. This "No" interrupts, for an instant, the task that was occupying him. When Bruno takes up the task again, he replaces the first meaningless vocalizations with the adverb of negation, now de-semanticized. The word becomes an interjection and each subsequent 'no' marks each action of keeping a letter.

Observation 10: 2; 5 (1). Bruno picks up from the floor one by one a set of markers to put them in a jar where they are usually kept. At the exact moment he picks up the marker from the floor, he says, in each case, "Tan!", and a sequence is built up: "Tan! Tan! Tan! Tan!". If this sound had been pronounced at the moment of releasing the markers, the expression could have a completive sense, because it would correspond to the impact against the base of the jar; but as each "Tan!" coincides with the action of grasping the markers, which is in itself devoid of any sound, the reason for these vocalizations has to be thought of as part of a structuring of the sequence in sound-effectual units, thus with a temporalization criterion. For the same reason, the "Tan! Tan!" are not in themselves onomatopoeias. Either they are inventions resulting from circumstance, and any other sounds could have been used, or they are the memory of effective sounds once heard, now detached from their sources and applied to soundless events.

In observations 8 and 10, the oral emission only wants to underline, in a certain action, its pulsating structure, the times of the movement in progress. That the same mechanism is observed in observation 9, where the 'no' removed from its role of negation is aligned with the philo-musical function to intermodally emphasize a certain pulsation. With the cautions implied by having worked only with examples, it can be ventured that signs are susceptible to be reabsorbed in asemantic roles such as the philo-musical configuration of subjective experiences. This philo-musical function, with precedents in the most primitive dyadic interaction, does not recede or disappear with the emergence of other uses of orality. The strategies of musicality endure.

In some other cases, silence is the used maneuver:

Observation 11: 2; 4 (10). Bruno repeats to the interlocutor, who has not understood his pronunciation, some words which, for clarity, he has decided to separate into syllables ("Fire", "Pen-cil"). At the same time, each particular syllable is accentuated by a sagittal movement of the head. With a forward bending of the neck and looking at the adult, he seems to

indicate to him that each of these voices has the number of parts he is signaling. Verbal separation into syllables does not need this pulsating movement. Something else, the natural bias toward multimodal musicality, induces that segmentation in the oral modality receives an adequate gestural reinforcement, unnecessary but pertinent.¹⁵

By the use of silence, vocalizations, or gestures, what is clearly seen is the use of multimodal-musical patterns to elaborate daily life experiences. Let's consider the following example:

Observation 12: 1; 11 (10). Bruno and his nanny are sitting in the park in front of the kindergarten of their brother, Marco, whom they are waiting for. Bruno plays amongst the roots of an old ombú tree. When he gets tired, he sits down next to her. At that, a dog barks three times exactly, woof-woof-woof. She and Bruno watch it. The dog barks again, again for three times. She looks at Bruno and imitates the bark: woof-woof-woof. The dog barks again about three times. A game begins: every time the dog barks, always in the form of three woofs woof-woof-woof, she hits with both palms on her knees, also three times, trying to accompany the bark. Bruno imitates her, a bit delayed, more alert to her than to the bark. He soon realizes that this hitting on the knees coincides with the barking. Then he takes his eyes off her and looks at the dog. When the dog finally barks only twice (woof woof) and Bruno follows the pattern of hitting three times on his knees, he notices the mismatch. He looks quizzically at the nanny. The symphony is broken. Bruno had used a movement module (provided by the adult partner) to match an exogenous sound. He had recognized a pattern and began to comply with it. Then reality (the dog's right to unexpectedly change its bark), confounded Bruno, who had continued to perform the same metric. Here we see a philo-musical function where the inertia produced by the iteration led to surprise when the hitting and the barking decoupled. The philo-musical accompaniment of the barking had been elaborated together with the adult partner, or rather it had started from him and had been transformed into a common game. That is why, on being interrupted, Bruno immediately looked to the nanny for an explanation.¹⁶

It is not only in the form of the pulse that we find scaffolding of early musicality. Examples can be cited concerning the spectrum or tonal space (see Chap. 2). A movement can be paired with a melodic oral line that repeats its form in contour, intensity, or duration, thus producing a redundancy of an asemantic type.

Observation 13: 2; 1 (8). Bruno plays in his room with a toy airplane. He walks around the room carrying it back and forth in his right hand and suddenly decides to let the plane make a swoop from the head of the bed to the floor. The movement was in slow motion, letting us hear, from beginning to end, a long drawn out "Iiiiiiiuuuuuuuuu" (♪), a sung passage in which the sound descended also, like the airplane, from sharp to low. The sonorization was not the sound of an engine, but rather a melodic contour temporally paired with the up-down trajectory.

In brief, the mechanism underlying these behaviors reveals that the child's mentality is forged in the matrix of multimodality (from which originates the tendency to produce, simultaneously, vocalizations or words and gestures or movements) and musicality (from which originates the tendency to produce temporal and

¹⁵ Bruno's second Spanish word was "Mo-to" (motorbyke), here replaced to maintain the bisyllabicity.

¹⁶ This episode was observed by the father, who had also gone to pick up Bruno's brother from kindergarten and was able to see it all first hand.

non-temporal-quality and narrativity-resonances). The cooperation between these two particular dimensions of the baby's life is a precondition that marks-indelibly-the ways of interacting, something that is projected onto all subsequent interactions of the competent adult speaker. The emergence of the communicative exchange itself is an event that, therefore, could not affect, disturb, or surpass it.

This consortium of multimodality and musicality is seen in certain hybrid cases that meet the requirements to be categorized as both a completive function and a philo-musical function.

Observation 14: 2; 4 (16). Bruno comes to report that the brother is in the room crying: "Mommy, Marco cry like this: ho-ho..." in a sad voice. The imitation of crying is bodily and sonorous. Each small interjection of crying ('ho') is performed with a movement of raising and loosening the shoulders, resembling a cry of grief. The mother, who at the time of the notification was attentively focused on something else, asks him, "What?", and Bruno, in his response, theatricalizes the information once again. He says "Marco cry", but altering the concomitant illustrative action. He now brings his hand, clenched into a fist, up to his eyes and matches each little 'Ho-ho' groan with a little flick of the wrist (fake rubbing). We are dealing with a challenging case of our categorization, because vocalization and movement are completive aspects of each other, but the pacing of the whine and the flick of the wrist speaks in favor of an expression of philo-musical function. At the same time, we even have elements of an informative function (what happens is true or false). The correct chaining of the words, according to the conventional order of Spanish (vocative, grammatical subject, verb and adverb) represents the particular stage of language that Bruno has reached, but the synchronized effectuation of gesture and onomatopoeia is an archaic resource.

A similar episode, in terms of the functionally half-breed character, has been previously mentioned; it occurs when Bruno, at his father's side and facing the medicine cabinet in the bathroom, mimes brushing his teeth by putting his hand in L, moving it to one side and the other and making a saw-like sound. Now that we have introduced the so-called philo-musical function, the case previously cataloged as completive, insofar as the sound was added to the movement of the brush-hand, reveals new edges. When we focus on the fact that the frictional rubbing separates the sounds respecting each traction—from left to right and vice versa—with appropriate pauses in between, we realize we face a multimodality case where there is musical concordance in the affected elements. The profound closeness between multimodality and musicality puts us in the predicament of being unable to decide which is the main function here.

The philo-musical function traces with movements the profile of sounds and provides sonority to the actions and gestures of the body. If in expressions of the completive function the physical processes lacking sonority receive certain ad hoc additions taken from reality, in expressions of the philo-musical function the emitter does not replace something missing (of which there may exist, by experience, a foreknowledge), but instead proceeds according to amodal perceptual patterns. The philo-musical structure rests on the experience of social play and on the way in which interactions are organized within it according to a temporal criterion. This unnecessary procedure of musicalization has, apparently, no other explanation than the latent and compulsive propensity to endow any behavior of expressive type, not exclusionary communicative, with a certain multimodal density of rhythm or melody. The interactive musicality operates then, through its characteristics, as an

organizing device of the subject's experiences even when gestures and speech have arrived and colonized the dyadic exchange.

The relevance of having defined three new functions, exhumed from the set of expressions of the other-function, can be measured in relation to the total amount of interventions of the child with other-function during the period ($N = 613$). The summed frequencies of the ratifying function, the completive function, and the philo-musical function amounted to $N = 114$, which is almost one-fifth of the utterances that could not be classified. The rest of the utterances could not be placed under other organizing principles. The opportunity remains open for the future to identify conceptual clusters for expressions that, within the framework of children's communicative exchanges, have not yet been catalogued.

8.4 Final Remarks

A category system for communicative functions in children with pregrammatical speech has been presented. It was intended to cover all variants of expression: words, preverbal vocalizations, interjections, onomatopoeias, gestures, and combinations between both modalities. We started from traditional categories in the field of linguistics, probed which ones could be observed in the skills of the child during the two-word strings period, and added some of our own that classified otherwise incomprehensible expressions.

Among the novelties provided, an important division must be made. The echo function, at least partially, seems to be associated with the exercise of incorporating terms and to play a transitory role. It is not expected that the adult repeats what he/she has heard from another adult, even when confronted with an unfamiliar word. Unlike all the other functions, which remain present in the adult's expressions once they have appeared, the echo function disappears.

Certain communicative functions (expressive function, conative function, and philo-musical function) seem to have very remote antecedents in prelinguistic manifestations: they arise before speech and gestures and subsist throughout life together with the varieties that appear during development. The child's spontaneous expression gradually adapts to standardized signs, as do invocations or calls through non-specific resources (shouts and cries), whereas the capture of the musical structure in the adult's performances and attunements are capitalized within the communicative space. In summary, if certain functions refer us to a stage that precedes the acts of communication, others, born from the possibilities of communicating, become consolidated and continue indeclinably throughout life, and others (one for the moment: the echo function) satisfies a concrete need and then withdraws.

Some specifications were made on previously recognized functions. The separation between declarative and informative functions reflects the two essential capacities of all languages, naming and saying (or predicate). Interestingly, this separation is not present in the categories of the most current canon (perhaps because language has remained essentially associated with syntax and thus with predication). The

conative function during this period under investigation makes it possible to link the use of protoimperative and protointerrogative gestures with the speech and gestures of the grammatical moment. The expressive function of this stage makes it possible to appreciate the replacement of mere vocalizations and bodily expressions of a non-specific nature by verbalizations and concrete gestures. Regarding the attitudinal function, it shows this same subjectivity, but in the light of the proposals addressed to the subject (towards which the person adopts a stance). If in the expressive function the content of the expressions has been gestated in the subject, in the attitudinal function it comes to the subject from the partner, so this is ultimately a reactive function. As for the phatic function, it corresponds to the routines within which the child learns to use signs as part of a ritual. The child says 'thank you' as an effect of a practice that he has observed many times and has incorporated into his culturally correct behaviors. In that same circumstance, it is expected that 'thank you' will always be said. To do so provides a favorable disposition on the part of the interlocutor. This mechanism lies somehow at the basis of all communicative function and promotes the learning of any kind of sign, words, amalgams, gestures, or small phrases that the child begins to use without grasping at the beginning any other sense than the situational pertinence (ground of the later more precise meaning of the language signs).

In relation to the functions identified within the other-function, it should be clear that, with the exception of the first, the ratifying function, the completive and philo-musical functions are *liminal uses* of communication, because although their expressions are directed toward the other (the gaze is present to make this evident), they are not always signic in a strict sense and refer rather to the phenomenological experience. If the completive and philo-musical functions lack the signic (semantic) element as conceived for the more restricted definition of communication (communication *about* something), in any case all the abovementioned examples took place in a face-to-face situation, and therefore correspond to expressive variants in the service of communication. This is the reason why it is interesting to highlight them in this type of research. In the completive function, environmental noises are imitated or the individual performs gestures that copy the reality of facts. In the philo-musical function, sounds or body movements are aimed at ordering in a musical way a subjective experience (which occurs in contexts of dyadic exchange). Both functions possess and do not possess, at the same time, properties of the idea of communication as an intentional, intended, and signic act (see Chap. 7). Intentionality as *aboutness* does not seem to be behind sound-kinesthetic completions and modelizations.

Insofar as the expressions of these functions are pure forms, without a content, what is at stake in them are *forms of vitality*. Goal intentionality is present, because the sender expresses himself in them and invariably seeks the attention and response of the interlocutor (he is attentive that the other is attentive), but they lack content intentionality in the classical sense. Nevertheless, in the spirit of an integral ecological code of communicative actions *sensu lato* (such as the one defended in the previous chapter), we see that in interventions of this type, skills of early musicality and multimodality are linked with playful signs and behaviors of all kinds. These skills,

which preexist the communicative ones, are later intertwined with them. Consequently, it seems prudent to establish the distinction between communicative functions, which include expressions that fully comply with the triple requirement of communicative signs, and precommunicative functions, which include expressive interactions directed towards the other but without a thought that was codified. By these terms it is intended to emphasize the link between what endures, from previous interactions, and what is new, which gathers and metabolizes previous competencies. Somehow, certain functionalities exist in baby's interactions and are then prolonged in communicative interactions (so that the former can reasonably be called *precommunicative* functions).

The proposed continuum between communicative and precommunicative functions is consistent with Chap. 7 with respect to focusing developmental psychology research on process rather than outcome. To understand cognitive (in this case, communicative) development, nothing can replace an approach that makes it possible to record precisely the development (rather than deduce it *a posteriori* from chronological cuts or according to a *partes extra partes* sign type dissection). Direct observation reveals the way in which the most incipient forms of interaction, characterized by musicality and multimodality, subsist later in advanced degrees within the exchanges of the child who gestures, who speaks half-language and who finally orders words following the conventional patterns of his language. This complex transition has shown how communicative functions are intertwined with earlier dyadic interactions. The linguistic functions, from which an observational code began to be elaborated, were traced back to their original sources in prelinguistic (not only pregrammatical) communication, that is to say: they were traced back to the enabling structure of any sociality, the cooperative bond between a baby and an adult.

References

- Abner, N., Cooperrider, K., & Goldin-Meadow, S. (2015). Gesture for linguists: A handy primer. *Language and Linguistics Compass*, 9(11), 437–451. <https://doi.org/10.1111/lnc3.12168>
- Austin, J. L. (1962). How to do things with words. In J. O. Urmson & M. Sbisà (Eds.), *The William James Lectures delivered at Harvard University in 1955*. Clarendon Press.
- Ayala, M. A. M., & López, M. J. R. (2011). Functions of the pointing gesture in mothers and their 12 to 36-month-old children during everyday activities. *The Spanish Journal of Psychology*, 14(2), 619–629. https://doi.org/10.5209/rev_SJOP.2011.v14.n2.10
- Bates, E., Camaioni, I., & Volterra, V. (1975). The acquisition of performatives prior to speech. *Merrill-Palmer Quarterly*, 21, 205–226.
- Belinchón Carmona, M. (1985). Adquisición y evaluación de las funciones pragmáticas del lenguaje: un estudio evolutivo [Acquisition and assesement of the pragmatic functions of language: An evolutive study]. *Estudios de Psicología*, 19–20, 35–49.
- Bühler, K. (1934/1979). *Sprachtheorie* [Teoría del lenguaje (J. Marías, trad.)]. Alianza.
- Cochet, H., & Vauclair, J. (2010). Pointing gestures produced by toddlers from 15 to 30 months: Different functions, hand shapes and laterality patterns. *Infant Behavior and Development*, 33, 431–441. <https://doi.org/10.1016/j.infbeh.2010.04.009>

- Crowder, E. M. (1996). Gestures at work in sense-making science talk. *The Journal of the Learning Sciences*, 5(3), 173–208.
- Dale, P. (1980). Is early pragmatic development measurable? *Journal of Child Language*, 7, 1–12.
- Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica*, 1, 49–98.
- Español, S. (2006). Possible precursors of private speech: Deictic, symbolic and aesthetic self-directed gestures. In I. Montero (Ed.), *Current research trends in private speech. Proceedings of the first international symposium on self-regulatory functions of language* (pp. 121–124). Ediciones de la Universidad Autónoma de Madrid.
- Guevara, I., Moreno-Llanos, I., & Rodríguez, C. (2020). The emergence of gestures in the first year of life in the Infant School classroom. *European Journal of Psychology of Education*, 35, 265–287. <https://doi.org/10.1007/s10212-019-00444-6>
- Jakobson, R. (1960). Linguistics and poetics. In T. A. Sebeok (Ed.), *Style in language* (pp. 350–377). MIT Press.
- Kendon, A. (1995). Gestures as illocutionary and discourse structure markers in southern Italian conversation. *Journal of Pragmatics*, 23, 247–279.
- Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press.
- Kong, A. P. H., Law, S. P., Kwan, C. C. Y., Lai, C., & Lam, V. (2015). A coding system with independent annotations of gesture forms and functions during verbal communication: Development of a database of speech and gesture (DoSaGE). *Journal of Nonverbal Behavior*, 39(1), 93–111. <https://doi.org/10.1007/s10919-014-0200-6>
- Lakoff, G., & Johnson, M. (1980/2003). *Metaphors we live by*. University of Chicago Press.
- Liszkowski, U., Carpenter, M., Striano, T., & Tomasello, M. (2006). 12-and-18-month-olds point to provide information for others. *Journal Child Language*, 7(2), 173–187.
- Liszkowski, U., Carpenter, M., & Tomasello, M. (2007). Pointing out new news, old news and absent referents at 12 months of age. *Developmental Science*, 10(2), F1–F7. <https://doi.org/10.1111/j.1467-7687.2006.00552.x>
- Lucca, K., & Wilbourn, M. P. (2018). Communicating to learn: Infants' pointing gestures result in optimal learning. *Child Development*, 89(3), 941–960. <https://doi.org/10.1111/cdev.12707>
- Mandler, J. M. (2004). *The foundations of mind: Origins of conceptual thought*. Oxford University Press.
- Mandler, J. M. (2008). On the birth and growth of concepts. *Philosophical Psychology*, 21, 207–230. <https://doi.org/10.1080/09515080801980179>
- McNeill, D. (1992). *Hand and mind. What gestures reveal about thought*. The University of Chicago Press.
- Moreno-Núñez, A., Rodríguez, C., & Miranda-Zapata, E. (2020). Getting away from the point: The emergence of ostensive gestures and their functions. *Journal of Child Language*, 47(3), 556–578. <https://doi.org/10.1017/S0305000919000606>
- Murillo, E., & Belinchón, M. (2013). Patrones comunicativos multimodales en la transición a las primeras palabras: Cambios en la coordinación de gestos y vocalizaciones [Multimodal communicative patterns in the transition to first words: Changes in the coordination of gestures and vocalizations]. *Infancia y aprendizaje*, 36(4), 473–487.
- Ninio, A., & Wheeler, P. (1984). Functions of speech in mother-infant interaction. *Final Science Report to the United States-Israel Binational Science Foundation (BSF)*.
- Ninio, A., & Wheeler, P. (1988). *A revised manual for classifying verbal communicative acts in mother-infant interaction*. Coding manual distributed by the Department of Psychology, Hebrew University, Jerusalem, Israel.
- Ninio, A., Snow, C. E., Pan, B. A., & Rollins, P. R. (1994). Classifying communicative acts in children's interactions. *Journal of Communication Disorders*, 27(2), 157–187.
- Rivero, M. (2010). Maternal expression of communicative intentions and pragmatic fine tuning in early infancy. *Infant Behavior and Development*, 33(4), 373–386. <https://doi.org/10.1016/j.infbeh.2010.04.002>

- Rivero García, M. M. (2012). Form-function rules in the first words stage: A longitudinal study of two children. *Anuario de Psicología*, 42(1), 65–84.
- Rodríguez, C. (2009). The “circumstances” of gestures: Proto-interrogatives and private gestures. *New Ideas in Psychology*, 27(2), 288–303. <https://doi.org/10.1016/j.newideapsych.2008.04.002>
- Rodríguez, F. G. (2018). La pragmática de la comunicación antes del lenguaje [The pragmatics of communication prior to language]. *Revista IRICE*, 35, 95–128.
- Rodríguez, F. G. (2021). *Semántica y pragmática en la comunicación del niño pregramatical. Gesto y palabra antes de la articulación morfosintáctica* [Semantics and pragmatics in the communication of the pregrammatical child. Gesture and speech before morphosyntactic articulation]. Teseo.
- Rodríguez, F. G., & Español, S. (2019). Communicative functions during the pre-grammatical stage: A case study/Las funciones comunicativas durante la etapa pregramatical: un estudio de caso. *Infancia y Aprendizaje*, 42(2), 413–458. <https://doi.org/10.1080/02103702.2019.1585654>
- Sarriá, E., & Rivière, Á. (1991). Desarrollo cognitivo y comunicación intencional preverbal: un estudio longitudinal multivariado. *Estudios de psicología*, 12(46), 35–52.
- Sarriá Sánchez, E. (1991). Observación de la comunicación intencional preverbal: un sistema de codificación basado en el concepto de categoría natural. *Psicothema*, 3(2), 359–380.
- Searle, J. R. (1969). *Speech acts*. Cambridge University Press.
- Searle, J. R. (1976). The classification of illocutionary acts. *Language in Society*, 5, 1–25.
- Serra, M., & Solé, R. (1995). *Childes database. Romance language corpora*. <http://childes.psy.cmv.edu>.
- Serra, M., Serrat, E., Solé, R., Bel, A., & Aparici, M. (2000). *La adquisición del Lenguaje* [Language acquisition]. Ariel.
- Southgate, V., Van Maanen, C., & Csibra, G. (2007). Infant pointing: Communication to cooperate or communication to learn? *Child Development*, 78(3), 735–740. <https://doi.org/10.1111/j.1467-8624.2007.01028.x>
- Tomasello, M., Carpenter, M., & Liszkowski, U. (2007). A new look at infant pointing. *Child Development*, 78(3), 705–722. <https://doi.org/10.1111/j.1467-8624.2007.01025.x>
- Wagner, P., Malisz, Z., & Kopp, S. (2014). Gesture and speech in interaction: An overview. *Speech Communication*, 57, 209–232. <https://doi.org/10.1016/j.specom.2013.09.008>
- Wittgenstein, L. (1953). *Philosophical investigations*. Basil Blackwell Ltd.

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