

Sign, Sound, and Image: The Non-Verbal Languages of Neonatal Communication

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Abstract

Theoretical background and content

The project involves pedagogists, educators, children and their parents in Kindergarten. Starting from *baby-sign*, the project goes on to include the non-verbal languages of music, image and body. Music is a privileged *means* to transfer meaningful linguistic constructs relating to children existential, mental and affective sphere, and it's the goal of a formative process towards the acquisition of specific musical competences.

The project aims to promote the acquirement of communicative competences and abilities which strengthen the learning of language, and to contribute elements from the fields of music and multilinguistic communication to the formation of teachers.

The project is now in progress; its forwarded outcomes are: acquirement of specific linguistic-communicative competences in children by means of *baby-sign* and musical listening; acquirement of specific musical competences and abilities; professional training of educators (musical listening and multilinguistic communication).

Introduction

In this paper, I will explain a few aspects of the research and teaching project *Understanding Each Other without Words: Sign and Sound as Communication*. The project began during the 2008-9 academic year on the joint initiative of the Free University of Bozen (Faculty of Education; research director, Prof. Liliana Dozza) and of the Department of Culture of Laives (Bozen) (director, Dr. Liliana Di Fede Mosca, Town Councillor for Public Education) and is still in progress. The project applies to infants in nursery schools (age range 0-3 years) and it involves pedagogists, educators, and parents. I was in charge of formulating the project, planning the modules, co-ordinating teaching, on-site supervising, monitoring, and data collecting. The project was accomplished by means of a four-part learning activity that combines the gestural language of baby-sign with the non-verbal languages of music, image and corporeity.

The goal of the project is two-fold and it is aimed at infants and adults alike:

1. to promote and favour infant acquisition of communicative competencies and capabilities that reinforce and enrich learning and the potentialities of verbal language in a bilingual context (Italian and German).
2. to contribute to the training of adults (teachers and parents) in the areas of plurilingual communication and music education.

The activity was planned for groups of infants subdivided according to age (from about 6 months to 3 years). It unfolded between 9 and 11 pm in four childhood learning facilities in the Comune of Laives (the municipal nursery, “El-ki; “Kitas Tagesmutter” in Bronzolo; and “Casabimbo Tagesmutter” in San Giacomo).¹

¹ The children were divided among the individual facilities as follows: At the Laives nursery there were twelve infants from 0 to 12 months of age; at Tagesmutter (Bronzolo) there were two groups (with a maximum of ten infants each) up to 3 years of age, subdivided according to

The learning activity was conducted every two weeks during the routines that spanned the day of the infant in the nursery, but in deliberately prepared spaces. Educators, pedagogues, infants and the expert in music education were all present. Children's parents were also involved by means of evening encounters, so that they could be able to go on with the learning activity with their children at home.² It is on this basis that the project contributes to the education of adults.³

Verbal and Non-Verbal Languages

Verbal and non-verbal languages are closely connected.⁴ As it is well known, the process of acquiring linguistic competencies from ages 0 to 3 involves the progression from first utterances to the construction of sentences. For this process to be realized, the linguistic code must be employed in a context of *learning* and *interrelating*. This process can be reinforced through recourse to non-verbal and gestural languages, and in particular to baby-sign and to musical language.

The gestural language of baby-sign is the result of recent studies on *social intelligence* that drew attention to the fundamental role of the so-called *mirror neurons* in the sphere of human communication, and neonatal communication in particular. Among their many functions, mirror neurons constitute the path between the inner life and the outside world. The use of baby-sign reinforces, through mirroring, the process of informal verbal communication; it also aids

age; at Elki (Laives) there was one group of infants ages 2/3 years; at Casa Bimbo (San Giacomo) there was one group of infants from 18 to 24 months.

² But the Elki parents (Laives) participate actively in the encounters with infants and educators.

³ I organized mostly encounters with educators, so that they could be able to go on with the learning activity even without my presence in situation, but under my supervision. Educators organized the learning activity with children in Kindergarten twice or three times a week.

⁴ For a deeper understanding of the pedagogical premises of this discussion, see the writings of Dozza (2005), Dozza (2007) as well as Dozza & Liodice (1994).

infants in acquiring the ability to communicate, prepares future verbal communication, facilitates communication between infant and parent, and has a positive impact on cognitive development. The potentialities of baby-sign are magnified if it is combined with music – the sonorous and non-verbal language *par excellence*. Sound carries a great importance throughout life, and it is a preferred means for a child to relate with his or her mother from the gestational period onward (there is no need to develop this point here: cf. Tomatis (1993), Tomatis (1998), Gordon (2003), Apostoli and Gordon (2005)). Conversely, from the time of gestation, infants reveal themselves to be sensitive and responsive to sound and music. Because of this, it is possible for music to play a prominent role in the development of linguistic abilities. Music is in fact a language with its own rules and it is capable of triggering complex cognitive and affective mechanisms.

But just as children learn to use the mother tongue by being immersed in it, listening to it and trying to use it in continuous comparison with adult models, so it must be with the learning of musical language: as *Music Learning Theory* successfully indicates, learning should be based first and foremost on exposure to music, on listening. This idea is shared by the pedagogues Liliana Dozza and Isabella Loiodice for whom effective programming in a nursery must consider both “training in the sound of the human voice and in listening [...and] introduction to musical production on the part of the infant” (Dozza and Loiodice, 1994, p.77).

The Learning Activity

It is for this reason that the project was designed according to modules that begin with exposure to music. Each phase of the “learning-chain” was monitored by means of an observation-verification-evaluation process (Dozza and Loiodice, p.113-116) that allowed for adjustments along the way.

The formulation of participation modules and the typology of learning materials employed (books, CDs, photographic reproductions, drawings) represent the constants. They are the same for every learning facility involved in the project, according to an explicit criterion of uniformity. A formulation such as this allows for the comparison of gathered data in individual facilities through photographic reproductions and video recordings. In the individual phases of the project, the gathered material thus assumes a documentary character, aimed at the monitoring and creation of a common learning activity shared by all involved.

In addition to the above-mentioned goal, the project also possesses the following general objectives:

1. to realize the *circularity* of communication, utilizing the *plurality* of languages
2. to cultivate the ear to discover the sound of the human voice and of music
3. to foster the harmonious development of corporeity
4. to favour the consolidation of the so-called *object permanence* (Dozza and Loiodice, p. 36), through the association of the object-characteristics (colour, form, pitch, tone of the sound, etc.)

The project also has the following specific objectives:

1. to prepare and to foster the gradual progression from non-verbal to verbal communication in a bilingual context (Italian and German) through the use of baby-sign and listening to music
2. to train the ear to the characteristics of musical sounds based on the fundamental parameters (pitch, intensity, tone, length) of the selected pieces

3. to recognize instruments of the symphony orchestra on the basis of tone and morphology⁵
4. to employ corporeity (*spontaneous or heuristic⁶ movement and directed gestures*) with the goal of improving the capacity to listen to and to understand music

As mentioned above, the initial phase of the learning activity planned to expose infants to music, in a context of interrelating with educators, parents and the expert in music education. The term *exposure* refers to *Music Learning Theory* by the American pedagogue and teacher Edwin E. Gordon. It designates a modality of learning a musical language in newborns based on listening to/absorbing musical stimuli, in a relational context, with the active participation of teachers and parents. It is important to specify that in this phase the child is not expected to demonstrate specific abilities at the prompting of the adult: the acquisition of competencies in a linguistico-musical environment occurs through interaction with the adults who take care of him/her and accompany him/her step by step in a journey of discovery. In this first phase of learning (acculturation from the perspective of MLT) children will demonstrate their own aptitude for receiving and absorbing in various ways: opening hands and arms, opening the eyes and mouth wide, interacting with the adult through vocal or motor responses. Absorption by the children during the listening phase must be respected: one must avoid drawing their attention to new pieces or to other activities; rather they must be allowed to interact at the end of the piece with small spontaneous sounds or with a silence full of anticipation and

⁵ About the educational potential of music and listening see La Face Bianconi (2004), La Face Bianconi (2006), La Face Bianconi (2008).

⁶ The definition is taken from Apostoli and Gordon (2005, p.31); heuristic movement is a movement "that aids discovery".

concentration. The sounds or small body movements they might produce at the end of the listening period are responses to music comparable to the lallations of spoken language.

Verification of the learning activity in this first phase hinges on the observation and analysis of these first meaningful attempts at assimilation-communication. In particular, substantial increments and modifications in gestural, vocal and behavioural responses of the children should be observed and evaluated. Selection of the music repertory is critical. It lays the foundation for the acquisition and consolidation of future abilities and competencies. Pieces like those suggested in Gordon and Apostoli (2005) could form the crux of the first phase of the project and the starting point for the entire learning activity. They are short and simple but not banal, and very different in character, movement, and structure. They lend themselves to an exclusively vocal performance. This characteristic is useful in introducing the child to musical language naturally, through the human voice, the first medium of communication between children and the adults that care for them. The human voice produces syllabifications that are in tune and that evoke the typical stammerings and lallations of the neonatal age and that aim at communication and relationality.⁷ The pieces thus present characteristics that render them suitable for a context in which the focus is on the transition from the primary forms of language that infants experiment with to a more mature linguistic ability.

In the second phase of the educational program, the "singing without words" explored in the first phase of the learning activity is applied to the melodies of actual nursery rhymes. These are primarily taken from Fritz Emonts' method in

⁷ "The attitude of the adult who sings to a small child is often of the entertainment variety. Its primary intention is to attract the child's attention and to make him or her laugh, leading the infant to produce movements by imitation and to repeat the ends of words in the song. The singing modality that we wish to promote is [...] closer to communicating and establishing a relationship with the child." Gordon & Apostoli (2005, p.40).

Europäische Klavierschule (1992).⁸ Enriched by marvellous illustrations, this book is intended for a basic level of piano literacy. Notwithstanding this primary goal, the pieces constitute fertile ground for first attempts at interaction between increasingly precise musical and linguistic vocalisations (in a subsequent phase, the presence of the Italian and German text will prove to be a precious resource for our project). "Singing without words" is also applied to short and simple pieces of classical instrumental and vocal music. The latter assumes a privileged importance in learning situations from nursery school onward (Dozza, & Loiodice, pp. 76-77; Apostoli and Gordon, p. 22; La Face, 2003, p. 121) because the syntax of classical music is so rich.⁹

During the third phase, the cultural heritage that are children's nursery rhymes in the popular tradition, together with pieces taken from the classical repertory and based on a text, constitute the ideal ground for experimenting with and effecting the translocation of the Italian and German languages. The use of baby-sign in relation to linguistic constructs gathered from the texts, to visual reproductions (drawings-photographs) of a concrete object of the verbal text, to musical instruments that perform the piece, and to characters of a musical fable are useful in helping achieve the primary objective of the nursery program: the so-called *object permanence* (sonorous, visual, gestural), or their being imprinted in the cognitive and affective memory of the child, promoted and favoured by the *circularity* of communication. From this perspective, music plays a fundamental role of connecting and supporting the individual phases of the learning program, to the point of assuming an autonomous educational value.

⁸ F. Emonts, *Europäische Klavierschule* I, Mainz, Schott 1992 (CD included). In the CD, nursery rhymes are played by piano in a very simple and clear way.

⁹ According to Andrea Apostoli, it is important "that the child be able to listen to musical language in all of its *variety* and *complexity*, not in a simplified version (on the contrary, music commonly aimed at infant listeners is very simple and homogeneous from the point of view of musical syntax.)" Apostoli & Gordon (2005, p.22). Sometimes, in fact, music expressly designed for enjoyment by infants is marked by a chaotic "bombardment" of sounds that make it hard, if not impossible, to discern the various components of the musical language.

The *verification* of the learning activity should thus evaluate the reinforcement of object permanence that has taken place, as regards baby-sign, musical and visual components, and language. The child's ability to recognize the textual and musical content of a piece and to effect with increasing precision associations between gestures, words, images, patterns, and musical instruments will confirm the absorption of linguistic, musical, communicative and relational abilities that have occurred.¹⁰

The fourth phase of the project is experiencing music through gesture and movement.¹¹ This fosters communication and the acquisition of specific musical and relational competencies. While music remains central, listening through the music/movement relationship is in fact very useful for children to develop greater knowledge of their own corporeity and of themselves and for them to increase coordination, movement and action in the environment and in space, while keeping in mind the context and the presence of others. Listening *mediated* by gesture and movement is in fact the concept of corporeity illustrated by the pedagogues Franco Frabboni and Franca Pinto Minerva (2003, pp.56-58): "material and biological dimension of the human being, inseparably connected to the mental dimension," "systemic unity" of body and psyche, "*medium of knowledge and of communication* with oneself, with others and with the environment." The instructional potential of this type of procedure is not limited to the sphere of music education, it also impacts the overall development of the individual.

During the learning activity two modalities related to movement are employed:
a) the *spontaneous or heuristic movement* that children perform spontaneously

¹⁰ In the verification phase, it is helpful to present the activities as if they were small riddles to be solved.

¹¹ *Movement* is understood as the displacement of the body, or of one of its parts, in space; *gesture* is understood as a single, expressive, body action because it is centered on one or more characteristics of the movement. In this sense, the gesture is characteristic of the movement.

while listening and that is aimed at the *discovery* of music syntax; and b) *directed gesturing* or the use of gestures that privilege music comprehension over listening. Such gestures are based on parameters of sound (pitch, intensity, duration), on elements of music phraseology (legato, staccato), on the careful observation of rhythmic cells and on the recurrence of musical structures. They utilize the properties of the movement – modality, velocity, direction, intensity, periodicity – and factors that determine the quality of the movement itself – weight, space, time and flow. This characterization, even when it is initially spontaneous, must nevertheless be conducted by the instructor in a way that pertains increasingly to the musical structures. Albeit compatibly with the age and the cognitive development of the children, the use of *directed gesturing* is therefore controlled and conscious, and aims at understanding the foundational elements of musical language.¹² At each meeting with educators and children, the steps of the program are first followed, and then integrated, enriched and repeated in sequence.

As I said before, the project is still in progress; anyway, we can sum up some first results. We have observed an improvement of abilities of listening to music; an improvement of abilities of communication through baby-sign, words and music; a strengthening of relations between children and adults, and between children themselves (this aspect is particularly clear with children from 18 months). These results encourage to go on with this project and to extend it to Nursery School and, with obvious changes, to Primary School.

¹² The pieces used in this phase are as follows: R. Schumann, from *Kinderszenen* (*Scenes for Children*) op. 15, for piano: n. 1 (slow and legato movement, A-B-A form) and n. 2 (staccato and legato movement, A-B-A form); S. Prokof'ev, *Peter and the Wolf*, selection of topics based on the fable's characters (see La Face Bianconi, 2004, pp. 37-38); C. Saint-Saëns, from *The Carnival of the Animals*: n. 1 *Introduction and Royal March of the Lion*; n. 8 *Long-Eared Characters*.

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