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Language Games Children Play: Language Invention in a Montessori Primary School

Gobbo, F.

# Language Games Children Play: Language Invention in a Montessori Primary School

Federico Gobbo

## Contents

**Abstract**

This chapter illustrates the main results of a language laboratory held in a Montessori primary school in Milan, Italy, during 7 years. Pupils (age: 9–11) are guided in the collective invention of a secret language, using all their linguistic repertoire present in class – including minority and home languages. The structure of the language is highly influenced by the language of instruction (in our case, Italian), but, at the same time, it differs from that because its aim is to be secret. In other words, the invented language is shared among the class members only, who know how to decipher its alphabet and grammar, unlike other schoolmates. Secrecy permits the inventor to insert elements from other languages, resulting in an a priori language contact. During the process of invention, participants increase their metalinguistic awareness and thus their understanding of the languages they are studying formally – in our case, Italian and English. The Montessori method fosters a "learning-by-doing" approach and an active

F. Gobbo (✉)
ACLC, University of Amsterdam, Amsterdam, The Netherlands

University of Turin, Turin, Italy
e-mail: f.gobbo@uva.nl

interdisciplinary cross-fertilization (called Cosmic Education). In fact, pupils may use the secret language to create an imaginary country – usually an island – and conceive a utopian society, putting together notions of natural sciences (for instance, orography) and social sciences, in particular, to describe the ideal human society speaking their secret language. The chapter also includes reflection on how this language laboratory can be applied in other educational contexts, maintaining its original character of being a serious game for learning.

## Why Secret Languages in the Classroom?

Since the school year 2012–2013, an innovative language laboratory has been held in a Montessori primary school in Milano, via Milazzo, devoted to the collective invention of a secret language in class, lasting the last 2 school years of primary school when pupils are 9–11 years old. In fact, although some sporadic experiences of using language invention in the classroom do exist (Sanders 2016; Schreyer 2011), to the extent of the author's knowledge, no such fieldwork exists in the specific context of primary schools. The purposes of the laboratory described in the position paper of the language laboratory (Gobbo 2013) and elaborated after the conclusion of the first edition, i.e., the first 2-year cycle (Gobbo et al. 2016), were the following: first, the laboratory may increase pupils' metalinguistic awareness through a continuous collaborative and collective activity of "learning-by-doing," typical of the Montessori method, and second, it may encourage comparative analysis of the natural languages present in the class member repertoires, including home languages of early bilinguals, so to understand the commonalities existing across language diversity. During subsequent editions of the laboratory, the team members observed a potentiality of strengthening the self-esteem of children with dyslexia and other specific difficulties concerning language learning, and in general the laboratory seems to have positive emotional aspects for all participants, as in general they participate willingly and with enthusiasm (Gobbo 2017a). In any case, compared to other school activities present in the curriculum, this laboratory is focused on the group level, and therefore the pressure over the single member to be right or wrong is considerably lighter. This does not imply that specific tasks are without any form of evaluation: this depends on the teachers and their relationship with the class members. The important point is that the laboratory as a whole is not under pressure of being explicitly graded.

Currently, the team members of the language laboratory are the author, who is responsible for the research and scientific aspects, and Chiara Bonazzoli, who is a Montessori teacher and trainer certified by the Opera Montessori in Rome, Italy. During the four editions of the laboratory so far, the team has received advice from Francesca Gastaldi, a teaching fellow in psychology of education at the University of

**Table 1** Classes participating the language laboratory so far

| School year | Edition | Males (*N*) | Females (*N*) | Dyslexic (*N*) | Home languages | Secret language |
|---|---|---|---|---|---|---|
| 2012–2013 | First | 12 | 12 | 1 | Four: Dutch, French, Serbian, Spanish | Araìk |
| 2015–2016 | Second | 14 | 8 | 4 | Six: Dutch, French, German, Japanese, Modern Hebrew, Neapolitan | Gatlòik |
| 2016–2017 | Third | 14 | 12 | 1 | One: Spanish | Ukaltuč |
| 2017–2018 | Fourth | 13 | 8 | 5 | Five: Dutch, French, Japanese, Korean, Modern Hebrew | Koatra |

Turin, Italy. Finally, Patrizia Pradella and Ilaria Adami, both Montessori teachers and, respectively, responsible for English and mathematics in that school, were involved during the first edition. Each edition of the language laboratory lasts 2 years, when pupils are 9–11 years old. At that age, they start to consistently show metalinguistic reasoning and, in general, an interest in how languages work and, sometimes, the desire to create a secret language of their own. By the time of this writing (July 2018), three editions were completed (Table 1). The school year refers to the beginning of the laboratory; therefore, the fourth edition (labelled by the name of the secret language, Koatra) is still ongoing.

As Table 1 shows, there is a good equilibrium between genders in the classroom; however, the number of pupils with dyslexia or other related difficulties can vary a lot, as well as the number of home languages present in class. These two parameters were taken into account during the laboratory preparation and implementation. The Montessori method focuses first on the specific needs of children and how to make them independent, so necessary adjustments were done accordingly. The choice of a Montessori school was driven by two factors, the first being empirical and the second theoretical. The empirical factor consists of the previous personal contacts of the researcher with the teaching staff of the Montessori school where the laboratory was held, while the theoretical factor relies on the Montessori method, where the setting in the classroom is particularly favorable to collaborative work on long-term projects – 2 years, in the eyes for children of that age, is a very long time.

## From Planned Languages to Secret Languages

Invention of languages is an activity documented since the Middle Ages, with the *lingua ignota* by Hildegard of Bingen (Highley 2007) and Bālaybalan by Mehmed Muhiddin in the Middle East (Bausani 1954), both invented for mystical and religious purposes. More recently, languages have been invented for artistic purposes, especially in fantastic literature, such as science fiction and fantasy. The most famous case study of the latter is Tolkien's Elvish languages of the fictional world of

Middle-Earth (Weiner and Marshall 2011). In the field of science fiction, the most famous is definitely relevant to the Klingon language, coming from the Star Trek universe – the first Hollywood language ever (Okrand et al. 2011). However, most scholars so far have devoted their attention to languages invented not for the sake of art or literature but for serious purposes, that is, international communication. In fact, the most prominent phenomenon pertaining to language invention in the literature is the debate around that particular class of invented language – or, more specifically, *planned languages* – according to Blanke (2003) and the German school of inter-linguistics. The notion of planned languages connects them to the wider pheno-menon of language policy and planning (Hult and Johnson 2015). In fact, these languages were explicitly designed for international communication so that partic-ipants are on an equal footing because that language does not belong to any ethnic group (for a detailed account of the traditional debate, see contributions in Schubert 1989). It is worth noting that, among its rivals, only Esperanto succeeded in forming a stable and relatively large community of practice (Garvía 2015).

On a closer look, the distance between languages planned for communication and languages invented for artistic reasons is not very high, from a structural point of view. All invented languages have in common one key feature: the fact that they are invented consciously at a first stance, instead of emerging from a speech community. In other words, at first, invented languages inevitably come out in *written* form, being projects proposed by a single person or, rarely, by a committee or a group. This property is valid regardless of their respective purposes, e.g., international commu-nication, religion, *belles lettres*, Hollywood movies, or others. Moreover, it distin-guishes them from natural languages, where on the contrary, the priority of speech over writing holds (with the important exception of sign languages). Consequently, while writing is a secondary property in natural language, in the case of invented (or planned) languages, writing is primary and orality is the greatest challenge.

It is possible to distinguish invented languages not only by their purpose, but also according to their *publicity* (Fig. 1).

In fact, while Esperanto and its rivals are public languages – for instance, no copyright issue is at stake – and therefore multilingual grammars, dictionary, and exemplar texts are freely available to the public, on the contrary, languages planned for artistic purposes are often nonpublic, that is, *secret*, in other words destined for an a priori defined human group, being a restricted circle or aficionados of that work of art. In general, some texts do exist, but no guidance for pronunciation is offered; moreover, quite often there are no bilingual texts and no translation, and their domains of use are limited. A relevant part of their fascination lies in their secrecy indeed.

The languages invented in the Montessori laboratory are secret during the invention process and their use, which is mainly in writing. In particular, their aim is to be used among class members: no other school member, either pupil or adult, is allowed to access it, with the exception of the language laboratory team members already mentioned. Unlike other moments of teaching in that Montessori school,
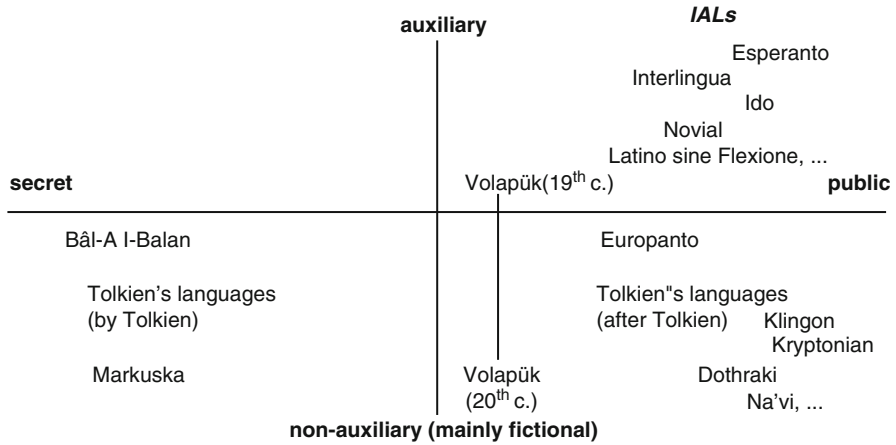
|  |  | **IALs** |
|---|---|---|
|  | **auxiliary** | Esperanto |
|  |  | Interlingua |
|  |  | Ido |
|  |  | Novial |
|  |  | Latino sine Flexione, ... |
| **secret** | Volapük(19th c.) | **public** |

Bâl-A I-Balan

Europanto

Tolkien's languages (by Tolkien)

Tolkien"s languages (after Tolkien)  Klingon  Kryptonian

Markuska

Volapük (20th c.)

Dothraki  Na'vi, ...

**non-auxiliary (mainly fictional)**

**Fig. 1** Diagram of invented languages (Gobbo 2017b)

during the laboratory the classroom doors are closed to prevent children from other classes from entering the classroom and thus respecting the secrecy. An important consequence of this practice observed for 7 school years by the laboratory team members is that class cohesion as a group is strengthened by the invention and use of the secret language, as it is perceived as a product of the "peer culture." In other words, the language is seen as a vehicle of their group identity, especially in opposition to the other secret language present in the school. In fact, when a new edition starts, the previous one is always still ongoing (Bonazzoli et al. 2017). The life cycle, so to speak, of the Montessori secret languages, coincides with the length of each edition, which is 2 school years (the fourth and fifth classes of primary school, the latter being the last one in the Italian school system). As a consequence, the constraint of secrecy declines after the natural ending of the class group, when kids go to middle school. As in the school in via Milazzo, Milan, it is not possible to maintain the language because inevitably secret language users are scattered to other parts of the city and the group simply ceases to exist. The only Montessori middle school in Milan, in fact, is in the opposite part of the city, and by now it is not a first choice of families for their children. For this reason, Montessori secret languages are peculiar even in the context of language invention: first, their purpose is educational, as described in the first section, which is rare; second, they are designed as a collective struggle, performed by class members, with the help of adults, which is unusual; and third, they are secret during their life cycle, and then, when their educational purpose is over, they become public legacy. In the following sections of this chapter, we will present how the language laboratory works, with concrete examples from our fieldwork. For this reason, we will refer mainly to the secret languages that have gone public that is Araìk, Gatlòik, and Ukaltuč – the secret languages of the first three editions of the language laboratory.

## Sounds and Letters

To lay the foundations for a language, you need the distinct units of sounds, that is, phonemes. Because of their alphabetization in Italian, a language where the distance between speech and writing is not so high as, for instance, in French or English (e.g., spelling competitions are unknown in Italian schools), children tend to assimilate letters and sounds, or, more precisely, phonemes and graphemes, respectively. So, it is important to clarify to the students that writing systems are only a convention for the set of distinctive sounds of languages. In other words, the same word can be written through different alphabets: as an example, we show the word "euro" written on recent Euro bank notes, which is written in Latin, Greek, and Cyrillic scripts.

In order to guarantee both secrecy and easy pronunciation, at least one vowel of the Italian language and three to four consonants are cut off the inventory of the invented languages. In other words, the sound system of all Montessori secret languages is a subset of the Italian language. Typically, the letter {h} is the first one to fall, since in Italian it is mute; the bigram {gl}, which corresponds to the International Phonetic Alphabet (IPA) [ʎ], is reduced to /l/ or /lj/; similarly, the letter {r}, which corresponds to a range of sounds of difficult pronunciation, is typically reduced to /l/, and so on. In order to write the new secret language down, we apply a pseudo-phonetic alphabet, inspired from the IPA, that is, without any mute letters and thus bigrams and the like. Children at first transliterate their own personal names: for example, "Leonardo" can become "loonaldo" if the {e} was assimilated to {o} and {r} to {l}.

After some exercises of transliteration, we give a presentation of the different writing systems of the world (from the Ancient Egypt to the Korean) so as to invent a truly secret alphabet, where there is a one-to-one correspondence to the phonemes just defined in the sound system of the new language. Sometimes this secret alphabet resembles the alphabet of Utopia by Thomas More (in particular, the language called Gatlòik, invented in the laboratory's second edition of the class); sometimes it is inspired by Japanese, Korean, and Chinese writing systems (Koatra, fourth edition); sometimes it is hard to understand the source of inspiration. The only constraints we give as adults leading the laboratory are to choose something easy to trace on paper and on the board and to be consistent, i.e., each sound has one and only one letter for correspondence (Fig. 2). The signs should be distinctive, that is, each clearly different in respect to the others, especially for children with dyslexia or other related disabilities. For example, in the case of Ukaltuč (third edition language), the secret alphabet vowels were depicted with curves and consonants with angles, while in the case of Gatlòik (second edition language), the three vowels, /a/, /i/, and /o/, were rendered as points over or under the consonants, as in Semitic languages.

Interestingly, once the secret writing system is ready, for some children the work seems to be done. We have a slightly different sound system from Italian, and a secret alphabet, so why should we need anything else? Here, adults should clarify that it is true that foundations are necessary to build a house; however, they are not enough to have a hospitable house. In other words, we need not only sounds and
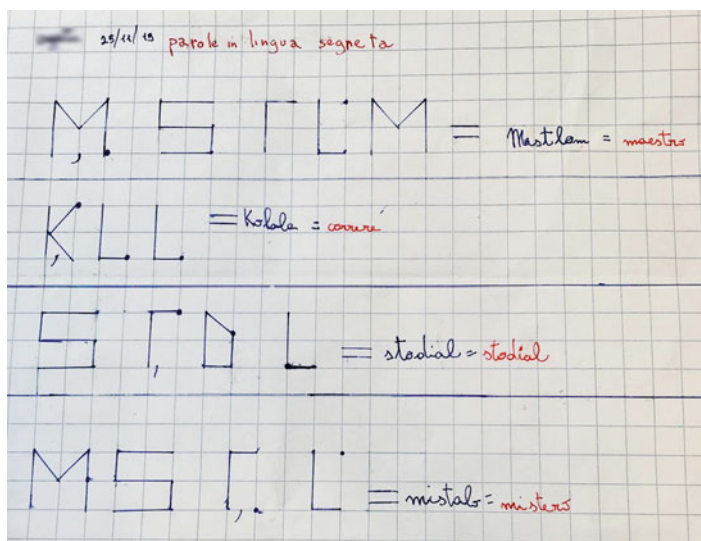
**Fig. 2** Example of characters in one secret language class

letters, but also grammar and vocabulary, in order to have a functioning language system. For this reason, we start to build the grammar of the new language following the Montessori's partitioning of the parts of speech (Montessori 2017).

## Nouns and Their Relatives

All languages of the world describe human experience in terms of objects, animated or not, that produced, willingly or not, events. In the languages familiar to children of the Montessori school in Milan, this is understood in terms of nouns and verbs. Maria Montessori (2017) was used to telling stories to explain abstract concepts to children. Thus, in her storytelling nouns become the head of a family, where articles and other determiners, as well as adjectives, become members of that family, sons, little children, and so on. It is perfectly reasonable to start building the dictionary from nouns. Pupils starting the laboratory are already familiar with the fact that some nouns are primitive (e.g., "house," "journal"), while others are formed starting from the primitive ones (e.g., "greenhouse," "journalist"). Pupils start to find rules to build compounds and other forms of derivation in order to build meaningful phrases or even chunks in the secret language, such as "the nice flowers," "some young football players," "my cat," and so on.

Possessive determiners such as "your" and "our" are in general interpreted as adjectives of the corresponding pronouns ("you," "we"). In Araìk (first edition language), a Chinese-like structure for personal pronouns was proposed and accepted by the participants, meaning that the plurals were marked morphologically as such with the ending -n, borrowed from Dutch: "I" in Araìk was "o" and "we" was

"on"; singular "you" was "a" and plural "you" was "an"; "he" was "u"; "she" was "e"; interestingly "they" could indicate either a plural "he," that is, "un," or a plural of "she," that is, "en," or of both, that is "uen." Needless to say, such a strategy was a nightmare to be remembered; in the following secret languages, adults strongly advised pupils to take care of this aspect before deciding on a grammatical part of speech.

The structure of adjectives follows the structure of nouns. They are either primitive (e.g., "good," "red") or derived from nouns with special suffixes, analogously to what happens with "airy" and "watery" in English, respectively, from "air" and "water." Sometimes adjectives are genderless, like in English; sometimes they inherit the grammatical gender of the noun they are linked to, like in Italian. A word apart should be spent for numerals, which are a distinctive part of speech in languages belonging to the Standard Average European, such as English and Italian. While natural numbers are a perfect logic system, as proved by Peano in 1889 (see the English translation of the Latin original in van Heijenoort 1967), their linguistic equivalents are not. For instance, students of French as a second language often find the French equivalent of number 90 puzzling: *quatre-vingt-dix* (literally, 4*20 + 10). Pupils like to adopt a strictly regular system, like the one present in Esperanto or in Chinese; in the latter case, for example, 25 is *èrshíwŭ* (literally, 2*10 + 5), while in the former one, it is *dudekkvin* (same structure: 2*10 + 5). Ordinal numbers such as "second" and "fifth" follow the rules of all other adjectives. For example, in Ukaltuč (third edition), adjectives are marked by the suffix *–(t)uč*. For example, "blue" is *blutuč*, while "cat's, belonging to a cat" is *gatuč*. The very name of the language means "fourth," *ukal*, being number 4. The reason behind a name lies in the fact that pupils start their invention process in the fourth class; we can consider it an idiomatic form, and this choice can be a good occasion to understand which functions idioms play in natural languages.

The most debated issue in this "family of the Noun" is grammatical gender. As it is widely known, the association between natural distinctions of sex and grammatical gender is very loose in languages: for instance, "sun" and "moon" are, respectively, masculine and feminine in Italian, while the opposite is true in the case of German. English has the neuter gender, while Italian has not. And so forth. Young girls in general pretend to have a more "balanced" language, and this request heavily influences the language, either in a massive use of the neuter gender or the introduction of the common gender (i.e., either masculine or feminine, but animated) or other strategies. Of course, if the laboratory has to be held in Finland or in Hungary, where the respective official languages lack grammatical gender, this issue most probably would not be such a hot debate in class.

In general, pupils like to build up nouns and their meaning in the new language; sometimes they take inspiration from English or other languages present in the class repertoire. For example, "grandma" – literally, a "big" mum – is often preferred to the Italian primitive word *nonna* for the equivalent word in the secret language. In the case of Ukaltuč (third edition), creativity found a more detailed solution which is not present in English, Italian, or other languages of the class repertoire. In fact, pupils felt the need to distinguish the maternal granddad from the paternal granddad;

in fact, "mother's father" is *mamučpapeo*, while "father's father" is *papučpapeo*. Curiously, a similar strategy is found in Swedish – respectively, the two corresponding words are *farmor* and *farfar* – *far* meaning "father" and "mor" meaning "mother."

An interesting collective exercise is to write the bilingual dictionary of the secret language. In the case of Gatlòik (second edition), more than 300 words were listed in a few months. In the Italian-Gatlòik dictionary, lemmas were listed according to the entries in Italian, while the correspondent words in Gatlòik have been written both in the pseudo-phonetic alphabet and in the secret alphabet. Every time a new phrase had to be formulated in Gatlòik, pupils checked if the word was already established in the dictionary; if not, they added the new entry after the formulation. The length of the dictionary gives a concrete measure of the work already done. Sometimes, in order to quickly add many entries, pupils added non-primitive nouns, based on the Italian or English dictionary. For example, from the primitive noun "dragon," you can easily add "dragon ship" (from the Vikings), "dragon tree" (of the agave family), and "dragonfish" (a deep-sea fish). Adults encourage pupils to use compounding whenever possible to keep the dictionary small and to better understand the meaning of words. For example, the English word "hippopotamus" derives from Greek and literally it is "horse-(of-the)-river." This practice showed us that pupils were starting to understand morphologic analysis in depth, as they were constantly comparing Italian, English, and the other languages present in the repertoire in order to achieve the goal of inventing new words in the secret language.

## Verbs and Management of Actions

All languages of the world indicate in one way or another four indications of action: tense, aspect, modality, and evidentiality. While in the first editions the researcher tried to introduce these concepts in order to consciously build the verbal structure in a clear way, in the subsequent editions the team realized that two strategies are feasible for children of that age: either a radical simplification of the system, where verbs indicate only tenses, and aspects are carried out by adverbs (Gatlòik, Ukaltuč, second and fourth editions), or the Italian complex verbal system is preserved, but analyzed in its five variables (in Koatra, fourth edition): root, diathesis, mood, tense, and person, such as *amerei*, which is "to love, active, conditional, present, first person singular." The advantage of the latter system is that it is propaedeutic to the grammatical analysis of Italian verbs, which are notoriously a great challenge to pupils in school. On the other hand, the advantage of simplification is that the combinations are reduced to a minimum, and the Italian variability – as well as the English one, or by any other language – should be mapped in a simpler system and therefore well understood in advance.

Interestingly, all Montessori secret languages are non-prodrop, that is, the indication of the person is not present in the verbal form, and therefore the pronoun

cannot be dropped, like in English (at the limit, "it's raining," where that "it" is a dummy subject), unlike in Italian (e.g., *corrono*, "they run"). This pattern is constant in all major international auxiliary languages, such as Esperanto and its most used rivals. For this reason, it is possible to argue that in the case of planned languages, verbal systems with a low degree of morphological intricacies are preferred over more complex systems.

## Helpers: Prepositions, Conjunctions, and Interjections

Maria Montessori ([2017](#)) considers functional parts of speech such as prepositions and conjunctions helpers of the two big families of the language, that is the Family of Nouns and the Family of Verbs. We consider preposition and conjunction scaffoldings of phrases and sentences, respectively, and they are highly language-dependent. In other words, even closely related languages such as Spanish and Italian, or Dutch and English, can present quite a difference in the use of prepositions. For this reason, in all Montessori secret languages, both prepositions and conjunctions are left as they are or simply read backward: for example, in Araìk (first edition) the Italian preposition *con* ("with") becomes *nok*. The only exception is represented by the so-called *preposizioni articolate*, which are fusional forms of prepositions and articles, such as *delle*, which is *di* ("of") and *(l)le* ("the, feminine, plural"). These forms are always decomposed in their primitive parts, to better understand their morphology. As a child participating in the third edition once said: "I thought that this laboratory was about language; it seems to me that it is about mathematics, as here languages behave like mathematical objects." This observation is in line with Montessori's ([2008](#), chapter 8) idea of Cosmic Education, that is, that formal education for pupils going to primary schools (age: 6–12) should start from the whole and then analyze the parts, leaving connections across disciplines – broadly interpreted as mathematics, linguistics, natural science, and humanities – free. For instance, in the first edition of the laboratory, an interesting insight came from participants who noticed the similarities between the English word "street," the corresponding Italian *strada*, the Dutch *straat*, and the German *Straße*, while inventing the word in Araìk, i.e., *tarts* – "strat" read backward. This insight was the occasion for the teacher to show a map of the main streets built by the Roman Empire in Europe and so to connect their insight to a meaningful historical notion, i.e., that the main streets in Europe were built by Ancient Romans.

Unlike prepositions and conjunctions, interjections are expressions of one or a few words that can stand alone, e.g., "oh!", and "my dear!". This part of speech is always great fun for children, who tend to borrow onomatopoeia from the jargon of comic books and graphic novels, e.g., "bang!", "crash!", and "yahoo!". Sometimes they may transform an interjection into a verb, e.g., "to yahoo" may become "to behave noisy and rudely." This flexibility at the end depends on how much children use their secret language, especially in the second year of the laboratory, when the grammar is more or less complete.

## Secret Languages for Poetry and Magic

In general, the first domains of use proposed by children are related to the realm of poetry and magic. For instance, they start using the language for short poetic forms such as haiku or limericks or, in more elaborated forms, for writing spells for sorcerers in short novels belonging to the fantasy genre. The role of adults here is of language guardians, i.e., children are not allowed to change the rules shared by the class members, so to maintain the unity of the language. If a child insists on that, she is kindly invited to invent a new language of her own (it happened only once in four editions, with approximately 100 children in total). Sometimes grammar results are incomplete for the actual needs, for example, the conditional tense was forgotten until it was needed to formulate a particular phrase. In such cases, the rules are expanded accordingly with the participation of the whole class. Here there is an example in Ukaltuč (by M., 11 Feb 2018):

| I | pelsoneis | di | čnutuč | studiatelesarlul | in | klasea |
|---|-----------|-----|--------|------------------|-----|--------|
| ART. | individual.young. | of | five. | study.PRES. | in | class. |
| PLUR | NOUN.PLUR | | ADJ | PLUR | | NOUN |

"The kids of (the) fifth (class) study in (the) class(room)"

In the case of Gatlòik (third edition), children wanted to write a touristic guide in "Gatloik-land," the imaginary country where the language originally derived. This is an exemplar dialogue from the section "at the restaurant" (by S. and A., 23 Jan 2017):

| Ka | posto | potalagi | | visit | pal | kana | ? |
|-----|-------|-----------------------|---|-------|-----|--------|---|
| WH | PLACE | permission.PRES.1st.PLUR | | visit | for | dinner | ? |

"Which place can we visit for dinner?"

| Pal | kana | vi | konsalagi | ni | lokala | Aluta | koma | ono | volkano |
|-----|--------|------|-----------|-----|------------|-----------|------|-----|---------|
| For | dinner | you.<br>ACC | suggest.<br>PRES.1st.<br>PLUR | ART | restaurantt | erupt | like | a | volcan |

"For dinner we suggest you the restaurant '(it) erupts like a volcan'"

| Ka | asalig | maso | bal | maso | lestalant | ; | čentl | isolik |
|-----|--------|------|-----|------|-----------|---|--------|-------------|
| WH | around | half | bar | half | restaurant | ; | center | island.ADJ |

"which (is) around (here; it is) half (a) bar, half (a) restaurant, (it is in the) center of the island"

In order to reach this level of results, phrasal books for Italians in several different languages were analyzed, such as Croatian, German, Japanese, or Russian. Children noticed that situations are not the same in the different guides, for instance, in the German version, there was a section "at the hospital" which was not present in all others. Even under the same rubric, for example, "in the restaurant," examples are

**Fig. 3** Imaginary "Gatloik-land" corresponds with the secret language created by one group of students
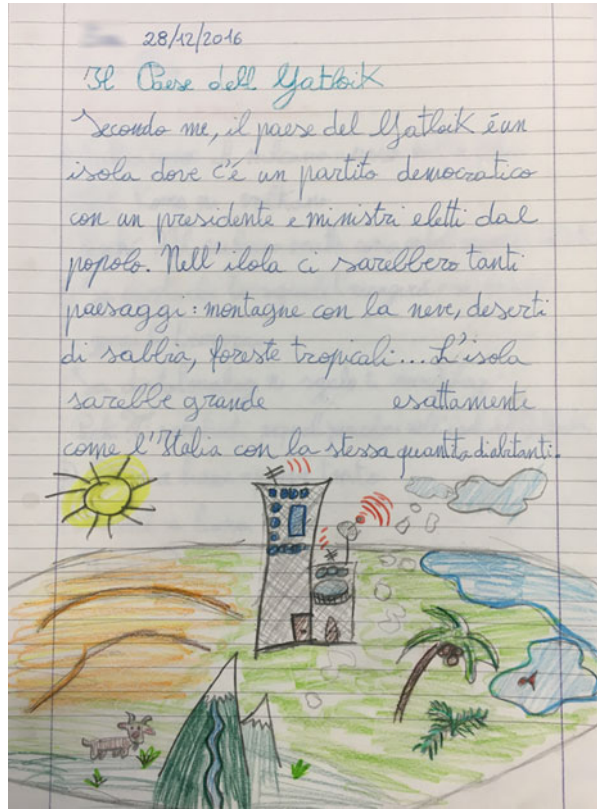


very different in, say, Japanese and Russian. These observations were used to introduce intercultural comparison and to show that there is a relation between languages and their worlds of reference. In other words, in order to write a touristic guidebook, you have to describe Gatloik-land in very different aspects. Following Montessori's Cosmic Education, we started from orography to tell the following story, as a result of writing in small groups that negotiated together their respective ideas.

Gatloik-land is an imaginary island in the Pacific Ocean, not too far from New Zealand, with whom it has commercial exchanges (Fig. 3). It has a splendid volcano in its very center, which was dangerous until scientists succeeded in channeling its energy into tubes that provide energy to houses and industries for free. Everybody has a job but they do not work too much. People are neither too rich nor too poor. Gatloik-land is pollution-free: for instance, only electric cars are allowed on the island. As the volcano eruptions are both dangerous and polluting, local people asked scientists and artists to keep it as an identity symbol in the past, and now the volcano eject. . .confetti. The most dangerous thing in the life of the local people is sharks that come from the ocean. For example, the idiom "to have a shark on one's back" in Gatlòik corresponds "to be in a spot of bother." However,

beaches are safe thanks to the "shark police," a special division that pushes sharks out to sea. A lot of details were created by children: pictures of road signs (with writings in Gatlòik, of course), maps of the island, exemplar sentences for the tourist guide, and descriptions (in Italian) of the habits of the local people.

So far, the second edition of the language laboratory was the most elaborate, as it touched many different aspects of the natural world and human society. It is worth noting that children were unaware of the existence of Thomas More's Utopia or similar philosophical books describing perfect societies; nonetheless, their description of Gatloik-land could be interpreted as a desire of a more equalitarian society.

## Final Observations and Further Directions of Research

The language laboratory held in the Montessori school in Milano, via Milazzo, shows that secret language invention can be a valid instrument to foster metalinguistic awareness and the construction of a group identity in pupils of age 9–11 during two full school years. Of course, this statement should be understood more as a hypothesis than a thesis, as we did not have a control group in order to measure the effect of the language laboratory in isolation. Moreover, it would be interesting to see if monolinguals behave differently from early bilinguals and so on. Another open question is the role of the Montessori method: how well is the influence of the Montessori method preparing a favorable setting for the laboratory itself? It would be interesting, for example, to apply such laboratory in the context of a European school, where there is more than one language of instruction. However, to answer these questions properly, new research funding is needed to enlarge the team accordingly.

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