

INVENTED SPANISH SPELLING: STRESS AND INTONATION

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Abstract. When children learn to write, they must ask themselves two basic questions: what part of the language is represented and how is it represented. Their answers are the source of their invented writings. This article reports data from interviews of Mexican Spanish-speaking children between the ages of 5 and 12 and analyses the child's point of view about the necessity or the possibility of representing *stress* and some *intonational oppositions*. Both processes present *undifferentiated writings* which reveal that for children, at a given evolutionary stage, contrasts in stress and intonation are not retained in writing (which can be considered as an invented "non-writing"). Likewise, there are *invented writings* that show original ideas about what and how to represent in writing the linguistic contrasts proposed for their reflection; finally, *quasi-conventional* or conventional writings appear. Reflections on the universality of learning, problems with comparing graphic systems and their respective acquisition processes are also discussed, as serious consideration should be given to the concept that written languages are mixed and linked systems and not monolithic systems.

Key words: stress, intonation, Spanish, invented spelling, psychogenesis.

Chinese

Translated by Shek Kam Tse

論文摘要：當兒童學習寫作時，他們必須先問問自己兩個基本問題：（他們所學習的）屬於語言的哪個部份？怎樣代表語言呢？這些問題的答案，正是自創寫作的來源。本文通過對 6 至 12 歲的墨西哥籍西班牙語兒童進行調查，從兒童的角度，分析他們描述重音和音調相反在語言中的重要性 and 可能性。兩個個案所表現的無差異寫作，這反映出兒童正值進化階段，寫作內沒有保留重音和音調（可以視為自創的「非寫作」）。同樣地，有些自創寫作能把兒童對語言對比如何和怎樣描述寫作原有的意念表現出來。最後，準傳統和傳統的寫作出現。此外，比較圖象系統和它們的習得過程的問題，還有學習的普遍性也會一併討論。由於書寫語言是混合連結的系統，不可嚴格視為整體而龐大的體制。

關鍵詞：重音、音調、西班牙文、自創拼寫、心理進化

Dutch

Samenvatting [Translated by Tanja Janssen]

Samenvatting. Wanneer kinderen leren schrijven, moeten zij zich twee basisvragen stellen: om welk deel van de taal gaat het en hoe wordt dit deel weergegeven? Hun antwoorden vormen de bron van hun zelf-verzonnen schrijfwijze. In dit artikel wordt het gezichtspunt van het kind geanalyseerd over de noodzaak of mogelijkheid om nadruk en enkele intonatie tegenstellingen weer te geven. Hiertoe zijn Mexicaanse, Spaanssprekende kinderen in de leeftijd van 6 tot 12 jaar ondervraagd. In beide gevallen vonden we ongedifferentieerde schrijfwijzen die laten zien dat kinderen, in een bepaald ontwikkelingsstadium, geen contrasten in nadruk en intonatie weergeven (er is sprake van verzonnen “niet-schrijven”). Maar er zijn ook verzonnen schrijfwijzen die originele ideeën laten zien over hoe contrasten weergegeven kunnen worden. Tenslotte zijn er quasi-conventionele of conventionele schrijfwijzen. Er wordt ingegaan op het universele karakter van leren, op problemen bij het vergelijken van orthografische systemen en de bijbehorende verwervingsprocessen. De notie dat geschreven talen gemengde en gerelateerde systemen zijn, verdient serieuze beschouwing.

French

Résumé [Translated by Laurence Pasa]

Quand les enfants apprennent à écrire, ils doivent se poser deux questions fondamentales : quelle partie du langage oral est représentée et comment. Leurs réponses sont la source de leurs écritures inventées. A partir d'entretiens menés auprès d'enfants mexicains de langue espagnole âgés de 6 à 12 ans, cet article analyse la perception qu'ils ont de la nécessité ou de la possibilité de représenter par écrit l'*accentuation* et certaines *intonations*. Le plus souvent, ces deux aspects n'entraînent pas de différenciation, ce qui montre que pour les enfants, à un certain moment de leur développement, les contrastes liés à l'accentuation ou à l'intonation ne sont pas pertinents à l'écrit (et ne s'écrivent pas). Néanmoins, certaines écritures inventées témoignent de conceptions originales de la façon de représenter les contrastes linguistiques qu'on leur soumet, avant que des écritures quasi-conventionnelles ou conventionnelles ne finissent par apparaître. Le caractère universel de l'apprentissage, les problèmes de comparaison des systèmes graphiques et leurs processus d'acquisition respectifs sont ici discutés. L'accent est mis sur une conception des langues écrites comme des systèmes non monolithiques, composés de sous-systèmes divers et reliés.

Mots-clés : accentuation, intonation, Espagnol, écriture inventée, psychogenèse.

German

Zusammenfassung [Translated by Irene Pieper]

Wenn Kinder schreiben lernen, müssen sie sich zwei grundlegende Fragen stellen: Welcher Teil der Sprache ist repräsentiert und wie? Ihre Antworten sind die Quelle ihrer Spontanschreibungen. Der Beitrag analysiert die kindliche Perspektive auf die Notwendigkeit oder Möglichkeit, die Betonung und einige Oppositionen in der Intonation darzustellen. Basis sind Befragungen von mexikanischen spanischsprachigen Kindern zwischen 6 und 12. Beide Fälle präsentieren undifferenzierte Schreibungen, die zeigen, dass für Kinder, zu einem bestimmten Entwicklungsstadium Kontraste in Betonung und Intonation nicht im Schreiben abgebildet werden (was als ‚spontane Nicht-Schreibung‘ betrachtet werden kann). Ebenso finden sich Spontanschreibungen, die eigene Ideen dazu zeigen, wie die linguistischen Kontraste abgebildet werden können; schließlich zeigen sich quasi-konventionelle und konventionelle Schreibungen. Diskutiert werden auch Reflexionen zur Universalität des Lernens, Probleme beim Vergleich graphischer Systeme und den entsprechenden Erwerbsprozessen. Die Auffassung, wonach Schriftsprachen gemischte und verbundene Systemen und nicht monolithische sind, sollte ernst genommen werden.

Greek

Metafrase [Translated by Panatoya Papoulia-Tzelepi]

Όταν τα παιδιά μαθαίνουν να γράφουν πρέπει να αναρωτηθούν σε δύο βασικές ερωτήσεις: Ποιό μέρος της γλώσσας αντιπροσωπεύεται και πώς. Οι απαντήσεις τους είναι η πηγή της επινοημένης γραφής τους. Αυτό το άρθρο αναλύει την άποψη των παιδιών για την αναγκαιότητα και την πιθανότητα της αναπαράστασης του τόνου και μερικών τονικών αντιθέσεων μέσω της ερώτησης Ισπανόφωνων παιδιών του Μεξικού ηλικίας από 6 έως 12 ετών. Και οι δύο περιπτώσεις παρουσιάζουν αδιαφοροποίητα γραπτά τα οποία αποκάλυπτουν ότι για τα παιδιά, σε κάποιο εξελικτικό στάδιο, αντίθεση στον τόνο και τον επιτονισμό δεν διατηρούνται στο γραπτό (πράγμα που μπορεί να θεωρηθεί ως «επινοημένη γραφή»).

Κατά τον ίδιο τρόπο υπάρχουν «επινοημένες γραφές» που δείχνουν πρωτότυπες ιδέες για το τι και πώς αναπαρίστανται οι γλωσσολογικές αντιθέσεις που προτείνονται στη σκέψη τους. Τελικά κάνει την εμφάνισή του η ημισυμβατική και η συμβατική γραφή. Στοχασμός για την παγκοσμιότητα της μάθησης, προβλήματα από τη σύγκριση γραφημικών συστημάτων και τις σχετικές διαδικασίες μάθησης τους συζητούνται επίσης, καθώς και η ιδέα, ότι η γραπτή γλώσσα ως συστήματα μικτά, αλληλοσυνδεδεμένα και όχι μονολιθικά πρέπει να τύχει σοβαρής εξέτασης.

Polish

Streszczenie [translation Elżbieta Awramiuk]

Kiedy dzieci uczą się pisać, muszą zadać sobie dwa podstawowe pytania: jaka część języka jest reprezentowana i jak jest reprezentowana. Ich odpowiedzi są źródłem ich kreatywnego pisania. W niniejszym artykule dokonujemy analizy dziecięcego punktu widzenia na temat konieczności lub możliwości reprezentowania *akcentu* i niektórych *opozycji intonacyjnych* poprzez stawianie pytań meksykańskim hiszpańskojęzycznym dzieciom w wieku od 6 do 12 lat. Oba przypadki prezentują nieróżniące się zapiski, które ujawniają, że opozycje w akcencie i intonacji nie są oddawane w piśmie dzieci na badanym etapie rozwojowym. Uzyskano także nietypowe zapiski, które obrazują oryginalne wyobrażenia na temat tego, co i jak oddawać podczas zapisywania prezentowanych dzieciom lingwistycznych kontrastów. W końcu pojawiają się zapiski quasi-konwencjonalne lub konwencjonalne. Dyskutujemy także na temat uniwersalności uczenia się, problemów z porównywaniem systemów graficznych oraz procesów ich przyswajania, biorąc pod uwagę przekonanie, że języki pisane nie są systemami monolitycznymi, lecz zróżnicowanymi i powiązаныmi ze sobą.

Słowa-klucze: akcent, intonacja, język hiszpański, pismo małych dzieci, psychogeneza

Portuguese

Resumo [Translation Paulo Feytor Pinto]

Quando as crianças aprendem a escrever devem fazer, a si próprias, duas perguntas básicas: que parte da língua é representada e como é ela representada. As suas respostas são a base dos seus escritos inventados. Este artigo analisa o ponto de vista da criança acerca da necessidade ou da possibilidade de representar o *acento* e algumas *oposições entoacionais*, através do questionamento de crianças mexicanas falantes de espanhol, com idades entre os 6 e os 12 anos. Em ambos os casos, apresentam-se *escritos indiferenciados* que revelam que as crianças, em determinada fase do seu desenvolvimento, não retêm a diferença de acento ou entoação na sua escrita (que pode ser considerada uma “não-escrita” inventada). Do mesmo modo, há *escritas inventadas* que apresentam ideias originais acerca do que representar e como representar na escrita os contrastes linguísticos propostos na sua reflexão. Por fim, surgem escritos quase convencionais ou convencionais. Reflexões sobre a universalidade da aprendizagem, problemas na comparação de sistemas gráficos e dos respectivos processos de aquisição também são analisados, pois deve ser seriamente encarado o conceito de que as línguas escritas são sistemas mistos e interligados e não sistemas monolíticos.

Palavras-chave: acento, entoação, espanhol, ortografia inventada, psicogénese.

1. INTRODUCTION

A researcher concerned with the acquisition of writing who accepts *invented writings* as a valid and informative methodological resource must consider these questions: does a unique psychological process of knowing exist through language? Is “universal learning” valid? Or, on the contrary, are there different processes or routes of learning for children whose languages, cultures, and schools are different, or even different acquisition processes in children with the same culture and language? Depending on the researcher’s orientation, he or she will surely be able to find differences and similarities in the acquisition process.

This problem is closely related to one that has already been analysed in some academic circles (for example, Fijalkow, 1991; Besse, 1991; Verhoeven and Teberosky, 1994): Is there a psychogenesis of the written language, i.e., something simi-

lar to an evolutionary law that gives it a unique, necessary, and ordered route of appropriation? Is such psychogenesis identical for Spanish, Portuguese, Italian, French, or English speaking children? This article by no means intends to resolve the question, nor is it assumed that it is posed so as to be resolvable. E. Ferreiro has supported the existence of such psychogenesis (1994 and 2000), whereas other authors have been more reserved or have completely opposed the idea. Clay (1994), for instance, when analyzing a text by Ferreiro, says: "I can not renounce the idea that there may be different routes to reach the same results, both at a general cognitive theory level and in the stage of pre-phonetization" (Clay, p. 74).

Actually, it may be convenient to re-analyse and reformulate the question, because apparently disparate answers may be valid, as some features of the writing systems remain undifferentiated due to the scale used to observe the phenomena. When considering the question, one must assume that "writing" (or "written language") is a term with a much broader meaning nowadays than two or three decades ago. It refers not only to a complex linguistic system of communication having multiple connections with the oral language it corresponds to (remember the "lingua prima" by Catach, 1990), but also to a cultural tool with diverse uses in diverse cultures (including diverse schools), of economically unequal societies, and whose political, economical, cultural, and social lives depend--to very different degrees--on writing. (For a rudimentary discussion of these topics, see Vaca, 2004.)

On the other hand, we should remember that all writing constitutes a "plurisystem" because it resorts to *various* systems or principles of representation; that it has "re-motivated" or found a different use for the adopted graphic material (that is, the set of letters and signs used for writing a language); and that it has adapted this to its linguistic, communicative, and cultural needs through complex historical processes. The mixture (*mixité*, in French) of the writing systems, together with the polyvalence that graphic material has developed in each writing system (Spanish, English, French, etc.), leads us to outline the matter as follows. There are various psychogeneses; a psychogenesis should be explored for each writing principle or for each subsystem developed to specifically represent a certain aspect of the language that is represented. For instance, the accent mark (') does not exist in written English, while there is only one in written Spanish and three in French (acute, grave, and circumflex accents). Additionally, the acute accent represents something completely different in Spanish than in French. This being the case, there naturally exists a different psychogenesis for learning the use of the graphic acute accent in French and Spanish.

The approach examined herein with regard to "universal learning" (reducing the universe to a few western alphabetical writings) would then be the following: there exist identical or very similar acquisition processes for identical or similar writing subsystems in different languages--and differences among the acquisition processes for writing subsystems of different languages--because said subsystems, which represent a specific linguistic feature, do so in a unique manner. Thus, there can be no identity in the learning processes. Since the graphic system is not a monolithic entity but a mixed and linked one (with some degree of systematization and arbitrariness), we require a separate examination of the suppositions concerning the functioning of diverse graphic elements (if the analysis goes from written to spoken language) or,

inversely, those concerning the possibilities of representing a particular aspect of the language (if it is from spoken language to writing).

According to Vachek (1989), orthography is a system of rules making it possible to pass from the spoken to the written language or, more precisely, from the spoken norm to the written norm; whereas “pronunciation” would be the bridge that allows us to run the inverse route when, for example, reading aloud. In-depth knowledge of the orthographic system of a language requires mastery over those rules, principles, or subsystems of representation that coexist within the same graphic system. Like any writing system, that of Spanish is mixed, and its elements are polyvalent. Children’s diverse attempts to discover, through scholastic and extra-scholastic exploration, those subsystems and polyvalences, constitute conceptualizations or “implicit theories” from which the “invented writings” are derived. Like the “errors” or miscues in reading (which might, by analogy, be conceived as “invented readings”), the invented writings are important revealers of the course that children follow to acquire understanding of the different writing subsystems.

A relevant contribution by E. Ferreiro (2000) has been to make us consider the possibility that it is the child who should reconstruct the writing system by discovering what part of the language is represented, what is not represented, and how it is represented. Additionally, she has insisted that children do not spend their intellectual effort on “inventing letters” but rather on finding ways of combining graphic elements to represent the language.

2. METHODOLOGICAL SPECIFICATIONS

From this point on, we will focus exclusively on the Spanish language. A summary is provided of the *invented writings* produced as well as the child’s justification for them; this was done with a common methodological approach during clinical interviews. The following two cases are analysed: the writing of paired words whose only phonological difference is the position of the stress with a change in meaning (for example: *jugo* versus *jugó*), and the writing of sentences whose only phonological difference is their intonation (for example: *José Luis y Pedro se fueron de pinta*, versus *José, Luis y Pedro se fueron de pinta*).

Other articles have reported results for two more cases: the writing of paired homophones (e.g., *tubo* versus *tuvo*, Vaca, 2003) and the segmentation of a text into words (Vaca, 2004). These studies have yielded answers comparable to those seen here and suggest similar evolutionary processes.

Data were collected with children between the ages of 5 and 12 in Mexican public and private schools, from various research projects carried out during the 90’s. Specific case studies are not included here, as they have already been reported in several articles (principally Vaca, 1987 and 1994).

What follows is a synopsis of the variety and amount of invented writings used to analyse the two linguistic points considered.

3. STRESS

In Spanish, *stress* is a suprasegmental phoneme characteristic of the syllable and, specifically, of the nucleus of the syllable, which is always a vowel. According to Quilis (1988), the four most important components for the perception of *stress* are *tone*, the *key of the stress* (a discontinuity in the tonal line), *intensity*, and *duration*:

The most important index for the perception of *stress* in Spanish is the fundamental frequency, which can be reflected in a greater height, in a discontinuity of it and of harmonics or in both at the same time. Duration would be the second component. The other two factors practically do not perform any function at all (p. 332).

On the other hand, the “tilde,” or graphic accent, is the only mark representing stress, and its use is governed by a series of rules that, fundamentally, seek economy, since they are designed to accentuate the least possible number of words. This article will not discuss difficulties in learning those rules, but rather children’s ideas about the representation of stress and the difficulties that they face in identifying and interpreting it.

We worked exclusively with pairs of words having primary lexical meaning--nouns and verbs, mainly. The underlying question is whether or not children consider that the stress difference is represented in writing. If so, how do they do it? The types of answers given by children can be given the following classification:

3.1 Undifferentiated writings

In this case, children write the requested pair of words identically. The following cases can be distinguished: a) children recognize the stress difference--that is, they admit that “the words sound different,” but believe that they can be written the same way; b) children recognize the stress difference but cannot find a graphic way to represent the difference in writing; and c) children do not recognize the stress difference--that is, they state that the paired words “sound the same.” Although they are able to distinguish between them, they cannot represent said difference. This last case is very interesting, since it shows a *décalage* between the linguistic and metalinguistic levels. From the moment at which the child recognizes the difference in meaning between words, he/she has interpreted the stress; nevertheless, after trying to identify the phonological difference, the stress “gets lost” during analysis, which is carried out only in terms of segmental phonemes and/or letters.

Indeed, it has been possible to demonstrate that the answer indicating apparent lack of sound differentiation is the result of judging the sound of these pairs of words based on a comparison of their literal composition. Children who apply said procedure seem to reason as follows: if words that sound different are written with different letters, then words which have the same letters must sound the same. This reasoning would be valid if any phonological difference were a difference between segmental phonemes, and if the writing system were only alphabetical. But that reasoning is not valid, as not every literal graphic difference corresponds to a phonological difference (for instance, *tubo* and *tuvo*) and not every phonological difference is a difference between segmental phonemes (*canto* and *cantó*).

When children judge sound equally in pairs of words, they show that they do not recognize the distinction between segmental phonemes and suprasegmental phonemes, nor between the graphic and spoken form of a word. However, this lack of differentiation creates its own “zone of contradiction”: in fact, the child perceives a difference in sound, but said difference does not correspond to a literal difference but to a literal equality. The awareness of said contradiction may lead the child to reflect deeply on the nature of the spoken differences among words and allow him or her to construct the distinction between segmental and suprasegmental phonemes. Thus, learning stress representation involves the construction of differentiations between distinct phonological elements of the language.

When children recognize the spoken difference among words, but believe that said words can be written the same way, the problem arises of selecting which elements are retained or excluded in what is written. A child may think that the stress contrast is one of the many phonetic or phonological contrasts (or oppositions) which are not to be represented when writing. For instance, conventional writing does not represent the emphatic accent; why, then, must the accentual phoneme be represented? A relevant case is that of written English, which has a free accent that is not represented in writing.

3.2 *Invented writing*

In this case, children recognize the difference in stress and propose to represent it through unconventional graphic oppositions. The graphic resource most commonly employed is the opposition between alternative letters that represent the same phoneme; as an example of this, children propose writing *trabajo* with a “b” and *trabajó* with a “v” (that is, *travajo*), either “because they sound different” or “so that they will sound different.” The following table illustrates some of the graphic resources of differentiation employed by children.

Table 1. Examples of invented writing to represent stress (accentuation)

Differentiation Resource	Paroxytone word	Oxytone word
Literal difference	trabajo	travajo
Vowel duplication	jugo	jugoo
Use of the comma	CANTO	CANT,O
Variation letter size	JUGO	JUGO

It is noteworthy that, in the examples, the graphic marking almost always falls on the oxytone words, those stressed on the last syllable. Being less frequent, they appear to function as the marked and “markable” elements in a pair of words. Children seem to have an intuitive statistical knowledge of the frequency of words, since they consider the paroxytone words as unmarked.

It is important to note that, once they have recognized the difference in stress and have decided that it is a representable difference, most children attempt to represent the phonological difference through oppositions between letters. This is important because, far from being a coincidence, it is almost a necessity if we recognize that a child constructs novel forms of representation or notation of phonological elements on the basis of familiar forms, being perfectly aware that in writing, differences in sound correspond to differences between letters. This means of representing the difference in stress is, in a certain sense, a form of representation assimilated by the alphabetical *schème*. As in the case of pre-alphabetic evolution, this process is a constructive one.

Ferreiro has emphasized that children do not devote their intellectual efforts to “inventing letters” but to understanding their mode of composition. Likewise, in the case of orthographic evolution and, in particular, with regard to the problem of phonemic poligraphy, it becomes clear that children try to give meaning to orthographic elements and attempt to do so in relation to those linguistic elements that they recognize and consider to be representable. They do not invent an original graphic form of representing contrasts in stress; rather, they try to utilize or adapt some of the existing orthographic elements to represent such contrasts. Inversely, they attempt to understand which linguistic elements correspond to which orthographic elements.

Notable also is the originality of the representations, which demonstrate a selection of different phonetic characteristics as a basis for representation: duration, in the case of a double vowel; marking the complete syllable with a comma placed precisely in between the letters that represent it; and intensity or volume, by increasing the size of all letters composing the oxytone word.

3.3 *Conventional writings*

In this case, children differentiate the writing of words by accentuating—usually in a conventional manner—the oxytone word of the pair, which statistically could be considered as the marked member of the pair. This does not yet involve the application of an explicitly taught rule.

In an evolutionary sense, children seem to follow the same pattern: initially, stress is not a phonological characteristic that they feel should be retained in writing. At a second stage, they explore the graphic possibilities existing in the system, in coordination with different phonetic or phonological features. It is astonishing to observe that children work with complete syllables, since even literate adults, influenced by their orthographic knowledge, place the stress over one single phoneme (the vowel), whereas technically, stress is a characteristic of the entire syllable. The quantitative distribution is difficult to interpret due to differing ages and socio-economic levels in the children sampled. Nevertheless, invented writing clearly seems to be the rule rather than the exception, for it represents 43% of the answers from small children in private schools and 11% of those from public school children, who are older than the former.

Table 2. Types of writing for homoliteral, hetero-accentuated words per school grade (K means "Kindergarten")

Types of writing	Private school				Public school				Total
	K	1st.	2nd.	Subtotal	2nd.	4th.	6th.	Subtotal	
Type 1: Undifferentiated	2	2	1	5 (22%)	1	4	0	5 (28%)	10
Type 2: Invented	3	3	4	10 (43%)	0	1	1	2 (11%)	12
Type 3: Conventional	0	3	5	8 (35%)	3	2	5	10 (56%)	18
Total	5	8	10	23 (100%)	5	7	6	18 (100%)	41

4. INTONATION

Traditionally, writing is considered to be "transcription of speech." Therefore, many punctuation marks are still explained in school in terms of "breathing points": short (,), medium (;), and long (.) pauses, for example. Though the origin of these marks may be thus accounted for in accordance with ancient practices of reading aloud, their present-day use is quite different (Blanche-Benveniste and Chervel, 1974):

Due to the impossibility of representing each kind of pause or stress with exactness, the comma, the semicolon, the period, the colon, the exclamation mark, the suspension points and the hyphen all have a use that is logical much more than phonographical (pp. 29-30).

In many cases, they serve to delimit a diversity of syntactical units and to indicate sentence types rather than to represent intonation. In particular, this is the case with exclamation points and question marks. These do not represent something but set boundaries and show that sentences can be categorized as interrogative or exclamatory, the latter being so open that they can express emotions ranging from the deepest sadness to the most intense joy. It is the reader who interprets these phrases on the basis of context, and reading them aloud is often unnecessary.

Without embarking on a discussion of the excellent linguistic studies that have been done on the function and use of punctuation (Catach, 1994), nor of the technical systems for transcribing intonation developed by linguists (Martens, 1990; Hockett, 1958), let us retain the central idea previously expressed. Punctuation marks do not represent intonation; instead, they indicate a category of statements or groups of constituents, sometimes following purely graphic conventions, that are dissociated from the reader's "breathing needs" and at other times having clear possibilities of intersecting with the potential "pronunciation," in the case of reading aloud.

Which aspects of intonation, in the children's estimation, can or should be retained in writing? How do they represent that which they retain? This was ascertained by asking children to write pairs of sentences having the same phonemes and letters, but a different intonation pattern. The sentences were presented to the children by means of a recorder in order to keep the intonation patterns identical; then,

we asked that they write them down and later justify their graphic productions. The following pairs of sentences were utilised: 1. a) *La torta es para mi maestro*, b) *La torta es para mí, maestro* 2. a) *La maestra dijo no, hagan la tarea* b) *La maestra dijo, no hagan la tarea* 3. a) *José Luis y Pedro se fueron de pinta* b) *José, Luis y Pedro se fueron de pinta* 4. a) *¿Cuánto dinero tienes?* b) *¡Cuánto dinero tienes!* 5. a) *No va a venir la maestra* b) *¡No va a venir la maestra!* We talked to the children about the meaning of different sentences. Following previously used methods, our analysis focused on what the children chose to represent and how they attempted to do so. Applying the same general scheme of classification, we grouped the children's responses into three broad categories.

4.1 Undifferentiated writing

Children who give this type of response do not consider that intonational variations are represented in writing. Therefore, they write both members of the pair identically and state that those sentences can be written in the same way, even though they admit that they sound different and/or have different meanings.

4.2 Invented writing

Table 3. Examples of invented writing to represent intonational contrasts

Differentiation resource	Examples of writing
Representation of emphatic accent	a) La maestra dijo no Hágan la tarea b) La maestra dijo no Hagan la tarea
Marking the accent before a pause	a) La maestra dijo nó agan la tarea b) La maestra dijo no agan la tarea
Marking a high intonation level	a) no va a venir la maestra b) nó va a venir la maestra
Marking a low intonation level	a) no va a venir la maestra b) no va a venir la maestrá
Marking the pause by varying the length of the space between the words (represented by a dash below the approximate length of the blank space)	a) joseLuis y pedro se fueron de pinta b) jose__Luis y pedro se fueron de pinta
Opposition of upper- and lower-case letters	a) La torta espara Mimaestro b) La torta espara Mi__maestro a) La maestra dijo No__agan__la tarea b) La maestra dijo NoaganLatarea
Use of two graphic resources, one of them being unconventional	a) Jose luis y Pedro se fueron de pinta b) Jose Luis y Pedro se fueron de pinta a) La torta es para mimaestro b) La torta es para mí maestro a) JoseLuis y Pedro se fueron de pinta b) José Luis y Pedro se fueron de pinta

In this case, the children consider that the difference should be represented in writing, and they choose a specific phonetic or phonological feature which they match with a certain unconventional graphic resource to indicate the difference. The following kinds of response can be distinguished:

4.2 *Conventional or nearly conventional writing*

This includes all forms of writing that utilize conventional resources as well as those that represent the intonational variations in question. The frequency of different kinds of responses can be seen in Table 4.

Table 4. Types of sentence writings with different intonation patterns for the following age ranges: 1) 7; 0 to 9; 0 (years; months) 2) from 9; 1 to 11; 0 3) 11; 1 to 12; 2. Children attended public elementary schools.

Types of writing	Ranges in age			Total
	1	2	3	
Type 1: Undifferentiated	6	5	0	11
Type 2: Invented	15	5	13	33
Type 3: Conventional	9	10	12	31
Total	30	20	25	75

Type 2 responses are particularly important because they show a tendency for children to represent certain features of the intonational curve “analytically,” that is, by analyzing the intonational curve to identify certain phonological points that are important from the viewpoint of meaning. Following this analysis and identification process, there occurs a selection of the graphic resources to be used for indicating those points in the flow of speech in writing. Children’s initial tendency is to attempt a “phonetic” type of writing, in a manner closely linked to speech.

The writing system represents some intonational aspects “analytically” (for example, the correspondence between a potential pause and a comma, when it exists), but sometimes it does not use these analytic procedures to represent intonational aspects. For example, interrogative and exclamatory intonations are marked “globally” in writing; question and exclamation marks indicate that the sentence limited by these marks is to be interpreted (and intoned, if spoken) as a question or exclamation. Such representation requires identification, but not analysis, of the intonational curve as a condition for its graphic representation.

These “analytic forms” of representation created by children are important because they construct modes of representing intonation assimilated to already familiar modes of representing phonological differences--in this case, stress. Children use the accent mark to signal high points in the flow of speech, thereby demonstrating that they establish a relationship between intonation and a way of representing stress. As

we observe the children's performance, the reality of the problem of selecting those phonological (or phonetic) elements to be retained in the written representation becomes evident; they represent phrase-dependent accents (like the stressed pronoun that becomes evident inside a phrase, since the possessive adjective "mi" is not differentiated in isolation), tonal levels (high or low), and, surprisingly, emphatic accents. It is also interesting to observe the graphic resources employed by children for the phonological characteristics that they decide to represent: besides the "extended" use of the accent mark, their use of oppositions such as upper- vs. lower-case letters is interesting, and even more so their use of variations in the size of the space between words to represent the pauses that they hear. These "extended applications" of orthographic resources are all the more astonishing when one realizes that the children producing them have surely received explanations concerning the use of the comma, exclamation point, and question mark yet, as these data indicate, they do not use the information to solve the task. One might conclude that these children do not use said information because they attempt modes of representation that are known by them and that share some characteristics with more familiar modes of representation--such as the accent mark, which can be considered as "analytic." If both intonation and accentuation are suprasegmental features, why not use the same character for graphic representation?

From an evolutionary point of view, children can be grouped into three different categories: (1) those who do not think that intonational variations are represented in writing; (2) those producing only analytic representations of intonation, which can be divided into two subcategories: (a) those whose undifferentiated responses subsist, and (b) those who write all of the sentences analytically; (3) those who, in addition to representing the difference between all the sentences, are able to produce analytic as well as conventional "global" representations (that is, using the question and exclamation marks conventionally). The distribution of children appears in Table 5.

Table 5. Distribution of children according to evolutionary level and age group

Range in age	Level of writing				
	1	2a	2b	3	Total
1 (from 7;0 to 9;0)	1	1	2	2	6
2 (from 9;1 to 11;0)	0	2	0	2	4
3 (from 11;1 to 12;2)	0	0	2	3	5
Total	1	3	4	7	15

Once again, it is noteworthy that the children ponder over which aspects of spoken language to represent and how to do so. Initially, we observe a clear tendency toward analytic representation (7 out of 15 children), based on their previous knowledge of alphabetic representation and word stress, as well as on an acute phonetic and phonologic analysis of the spoken language. Little by little, the child becomes

more conventional, but only after exploring coherent and systematic alternatives of representation. The relative independence of writing from spoken language is construed by the child through a process (cf. Ferreiro, 2002).

5. CONCLUSIONS

The analysis of children's invented writing revolves around two main axes: what they decide to represent in writing and how they represent it. Evolution brings these axes together, in that children explore the graphic system simultaneously or through interaction with their reflections on the language, thus coordinating exploration and reflection. Metalinguistic reflection never appears to be an antecedent, much less a pre-requisite, to acquisitions and constructions relating to the graphic system. On the contrary, as proposed by Vernon and Ferreiro (1999), the need to understand and use the written language seems to motivate children to explore the graphic system and leads to metalinguistic reflections.

The invented writings analysed herein show very little influence from educational systems (either family or scholastic); they are original forms of representation (or non-representation) and seem to be the product of acute conflicts (albeit momentary and instigated by the specific request of the interviewer), analysis, and "intelligent calculations" on the part of the children (Jaffré, Bousquet, Massonet, 1999). They attempt to construct systems of representation adapted to pertinent linguistic contrasts and assimilated to previously learned representation systems. In their evolutionary process, these invented systems gradually become reconciled with socially accepted ones. It is then and only then that scholastic or social information can be grasped, reflected upon, explored, and finally adopted by the child. Everything seems to indicate that the children's adoption of conventional subsystems of representation always occurs after children have freely explored them and reflected on them.

A fruitful comparison between languages is possible only if specific subsystems of the languages in question (oral and written) can be compared. "Written languages" are very complex systems; it is therefore necessary to analyse them in order to ensure that only those sectors that are really comparable are considered. Once these subsystems have been identified, the corresponding comparisons can be undertaken. When considering the written language acquisition process, we are in reality dealing with multiple processes and with the reconstruction of multiple subsystems which, when coordinated, constitute a given graphic system.

The initial data presented here permit the proposal of specific research geared toward deepening our knowledge about the reconstruction of different subsystems in the graphic system of a given language.

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