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Written Narrative by Spanish Heritage Language Speakers

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ABSTRACT

This article aims to study narrative complexity in written texts produced by Spanish heritage speakers growing up in two linguistic regions of Switzerland. Texts produced in their heritage language by children living either in French- or German-speaking parts of Switzerland were analyzed and compared to texts written by Spanish speaking children growing up in a mostly monolingual context in Argentina. According to the literature, it was expected that children's heritage language command and literacy abilities would mask their narrative competence in Spanish (i.e., that heritage speakers would show lower narrative complexity than their monolingual peers). The participants were 138 pupils aged between 9 and 12;5 (twelve years and five months), distributed in three groups: Spanish heritage language speakers living in German-speaking Switzerland (n=66), Spanish heritage language speakers living in French-speaking Switzerland (n=25), and a comparison Group made up of Spanish speakers growing up in a monolingual context (n=47). Heritage speakers' parents also completed a questionnaire describing the children's linguistic background. We did not find significant differences between groups in terms of story grammar components, suggesting that command of language and writing constraints do not affect narrative complexity development in heritage language speakers.

Key Words: Spanish heritage speakers; heritage languages; narrative development, narrative competence, written narratives.

Introduction

Narrative production and comprehension is a crucial factor for language development. It is a textual form emerging in early childhood (Nelson, 2006) that is persistently present in children's everyday life, before and after the beginning of schooling. Narrative entails a variety of functions, including socialization (Miller, Wiley, Fung, & Liang, 1997), construction of identity, transmission and making sense of experiences (Nelson, 2006), and mediation and organization of thinking (Bruner, 1991).

Storybook reading during interaction with adults is important for children's narrative development (Sulzby & Teale, 1991), since listening to stories allows them to learn how to use linguistic devices typical of written language (Geva & Olson, 1983). In this sense, narrative has also been found to be correlated with literacy acquisition and academic performance (Roth & Spekman, 1986; Boudreau & Hedberg, 1999; Paul, Hernandez, Taylor & Johnson, 1996; Borzone, 1996, among many others).

Narratives therefore represent a major focus in linguistic research, particularly in the field of native language acquisition and language education (see review in Pavlenko, 2002). Narratives have also become a topic of interest in Second Language Acquisition (SLA) and bilingualism research (e.g., Berman & Slobin, 1994; Verhoeven & Strömqvist, 2001, Pavlenko, 2006). They

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have even been found to be a reliable instrument to assess linguistic competence in bilingual children, since the form may be more recognizable to children from different cultures than formal language testing (Heilmann, Miller, Nockerts & Dunaway, 2010; Gutiérrez-Clellen, 2002). In this sense, using narratives help to counter a possible bias that can be present in most standardized tests, particularly those conceived in one language and adapted to other languages in study (L2 or L3) (Fiestas & Peña, 2004).

Narrative development involves two dimensions: First, *narrative competence*, the ability to organize information following the scheme that underlies narratives' comprehension and production. Second, *storytelling performance*, which refers to specific linguistic knowledge and to the linguistic devices necessary to express a variety of narrative functions. These linguistic devices include, among others, textual organizers, verb tenses and formulaic markers (Berman, 1995). In the current study, we will mainly focus on narrative competence in heritage language children, that is, their capacity to organize information in the narrative structure. More specifically, we aim to assess the narrative complexity of written texts produced by children with Spanish as a heritage language (SHL) in Switzerland using *story grammar analysis*. Although some research has focused on the oral narrative skills of Spanish heritage children (Gutiérrez-Clellend, 2002; Fiestas & Peña, 2004; Álvarez, 2003; Montanari, 2004; Pearson, 2002), to the best of our knowledge, no studies have specifically analyzed written narrative in this population. Since heritage language speakers are usually stronger in oral competence, writing skills have been less addressed; therefore, and this study aims for a better understanding of the characteristics of written production in heritage speaker children.

As a complement to narrative competence analysis, we will also investigate formulaic markers, an aspect of storytelling performance. Formulas like "once upon a time," for example, are a story convention that clearly marks the beginning of narratives (Cain, 2003). Since they contribute to a complete structure, they contribute to narrative complexity. Formulaic markers are also indicators of written style acquisition and knowledge of the communicative situation (Weinrich, 1968).

Narrative Complexity

According to Stein and Albro (1997), to be "successful," a narrative requires some structural "rules" be followed. In this article, we are using the *narrative grammar* analysis, also called *story grammar* (Mandler & Jonson, 1977; Stein & Glenn, 1979), to examine the children's texts. The narrative grammar describes the common underlying structure of a story —the "narrative scheme"-, focusing on the protagonists' goals and engagement to solve problems. This narrative structure constitutes a model for the comprehension, recall, and production of narrative texts, and it has been largely used to study comprehension and production processes among children (see review in Gárate Larrea, 1994). It has been mostly applied to the analysis of oral production, but has also proved to be useful to the study of narrative complexity in written production that aims to describe the structure of personal experiences told by adults. Narrative grammar focuses on fictional stories' comprehension and production (Fitzgerald & Teasley, 1986; Merritt & Liles, 1987; Sánchez Abchi, Borzone & Diuk, 2007) contrary to Labov's scheme (Labov & Waletzky, 1967/1997) that aims to describe the structure of personal experiences told by adults (Labov & Waletzky, 1967/1997). The narrative grammar scheme is organized on the basis of the following

story categories: (1) the setting (i.e., a description of the characters, location and state); (2) the initiating incident that sets off the story events; (3) the characters' internal response and internal plan (i.e., the protagonists' reaction to the story's initiating event); (4) the characters' attempt to solve the problem; (5) the consequence of the attempt and, (6) the ending or the characters' final physical or emotional reaction to that consequence (see Appendix 1 for an exemplification based on our data).

It has been observed that cultural-specific conventions and traditions can have an impact on narrative comprehension and production (see review in McCabe, 1997). Nevertheless, the canonical structure generally reflects most schematic organization in the storytelling of a variety of cultures storytelling (Mandler, Scribner, Cole & De Forest, 1980). In crosslinguistic studies, differences observed in narratives were mostly linked to linguistic forms and devices, such as verb tenses and rhetorical aspects (Berman & Slobin, 1994), and not to the basic narrative scheme. Moreover, although the story grammar approach has mostly been used to assess comprehension and production in L1, it has also been applied in L2 studies (Fiestas & Peña, 2004; Leppänen & Kalaja, 2002; Pavlenko, 2006).

Narrative Development in L1 and L2

Studies have found that children acquire narrative competence progressively, beginning with descriptive sequences of actions without chronological order and ending with goal-based episodes with all the narrative categories (Berman & Slobin, 1994; Stein & Albro, 1997; Shapiro & Hudson, 1997). Young children (2-5 years old) produce very incomplete narrative sequences, without an explicit goal, e.g., the objectives that are at stake in a story and that motivate the actions, and without hierarchical organization. At the age of around 6, children begin to tell more complete and coherent stories. Children between 7 and 8 years of age can produce goal-based stories and include casual related events. At this age they also start to refer to the mental states of characters. Between the ages of 9 and 12, students produce more sophisticated stories (Stein & Glenn, 1982, as cited in Shapiro & Hudson, 1997; for Spanish, see Borzone & Granato, 1995; Stein & Albro, 1997).

In L2, narrative competence is to be understood as the L2 users' ability to produce and interpret narratives in a similar way to native speakers as far as the basic structure is concerned (Pavlenko, 2006, p. 107). Although narrative structure is similar across languages (Berman, 2001), other differences can be observed. First, several studies assessing narrative abilities in bilingual children posit the existence of differences across linguistic groups, particularly in the organization of narrative information, experience and world knowledge, as well as narrative style and traditions (see review in Gutiérrez-Clellen & Quinn, 1993). Second, the narrative scheme's development can depend on the language input children receive (Schwartz & Shaul, 2013). In a study investigating narrative competence of bilingual Spanish-English children Montanari (2004) found that in the case of a limitation of linguistic devices in the L2, the narrative competence was also affected and children failed to produce coherent narratives in the L2. Moreover, as Gutiérrez-Clellen & Quinn (1993) explain, the differences in experience with listening to and telling stories, as well as differing assumptions about audience knowledge, can also have impact on children's narrative performance. As we will discuss in the next section, if these factors affect

the narrative scheme in children's oral productions, their influence on written narrative productions could be even more critical.

Narrative Development in Heritage Speakers: Written Competences

Heritage speakers are not L2 speakers in the traditional sense of the term, and therefore their text production competencies present specific characteristics (Polinsky, 2008; Montrul, 2010). Heritage speakers grow up with a home language other than the majority language but they are dominant in the majority language, while their level of proficiency in the family, or heritage language (HL) varies depending on factors including qualitative and quantitative exposure to the heritage language, influence of the majority language, and differences in formal education (Valdés, 1999). Heritage speakers' linguistic competence in their HL is heterogeneous, but they tend to be more proficient in oral than written skills, because in informal contexts, speaking and listening are more often practiced (Schwartz, 2003). In everyday life, HL users have a reduced need and fewer opportunities to write in the heritage language than children who use the same language at school and at home.

In addition, studies comparing L2 adult learners and HL adult speakers have observed that L2 learners tend to display better literacy skills than HL speakers (Montrul, 2010, 2011). However, these results have also been questioned as HL writing performance varies according to the task (structured vs. spontaneous) (Camus & Adrada-Rafael, 2015).

On the other hand, most studies investigating writing competencies in a heritage language focus on academic writing, and less attention has been addressed to children's writing competences than to adults'. If a writing task can be an issue for HL adults, it might be even more challenging for children, as they are still developing their writing skills. Even in their L1, children's writing abilities are affected by the cognitive constraints of the writing process and working memory (Berninger, 1999).

As mentioned earlier, in oral production, the narrative competence of bilingual children can be influenced by the level of command in each of their languages (Montanari, 2004). In writing tasks, HL children users must also learn the written system and the cognitive demands of the writing process. Since children are still acquiring literacy, low-level writing processes like transcription and phonological codification can potentially mask their knowledge of discourse structure (Pearson, 2002).

Influence of Typological Proximity of Languages

In a *transfer* perspective (i.e., the hypothesis that competencies acquired in one language can be transferred to another one, see for instance Idiazábal and Larrigan, 1997; Larrigan, Idiazábal and García Azcoaba, 2015; Berthele and Lambelet, in press, for a discussion), it has been hypothesized that narrative competence across languages can be influenced by typological similarities between related languages.

Ragnarsdóttir and Strömqvist (2004) analyzed *Frog Story* productions of children, teenagers and adults, in two closely related languages, Swedish and Icelandic. They assumed that differences in detail between the two languages influenced narrative event construction. They concluded that

the linguistic proximity affected mostly linguistic devices rather than the structure of the narrative itself. In addition, the similarities between languages under study seem to have a bigger influence in early phases of language development, but tend to be less evident as children develop their proficiency in each language. However, it is worth mentioning that an effect of languages' typological proximity on transfer processes has not been found as such in other studies (for instance, Lambelet et al., 2014; Desgrippes & Lambelet, 2016; Berthele & Lambelet, in press.)

In the present study, the comparison between texts produced by children who speak two typologically related languages (French and Spanish belonging to Romance languages) and those who speak two typologically unrelated languages (German and Spanish) provides more evidence about the role of structural similarities in bilingual narrative development.

THE PRESENT STUDY

The aim of our work is to compare narrative complexity in written texts produced by Spanish heritage speakers growing up in Switzerland with written texts produced by Spanish speaking children growing up in a mostly monolingual context in Argentina. In Switzerland, we analyzed texts produced by children living in two different linguistic regions (French and Germanspeaking parts of the country) to shed light on typological proximity effects (Spanish being more closely related to French than to German).

Overall, the data is to help us determine whether inter-group differences are to be found in the narrative complexity of written production and, if so, to describe what those differences consist of. This work constitutes a contribution to the field because not only are such studies on Spanish heritage speakers in Switzerland nonexistent, but also because studies on Spanish heritage speakers focus on adults. The findings will help to better understand the pedagogical needs of SHL learners.

Aims and research questions

This study addresses the following two research questions:

- 1- Do the narrative texts written by HL speaking children and by the comparison group show differences in terms of narrative complexity?
- 2- Which factors (context language, age, literacy practices at home, presence of Spanish input in the family, education level of parents and amount of attendance at heritage language and culture courses (HLC)) influence heritage speakers' written narrative production?

METHOD

Participants

The participants were 138 pupils aged between 9 and 12;5. We chose this age range because, according to the literature, the narrative scheme begins to be more stable and fewer differences should be observed among participants. Participants were distributed in three groups:

- Spanish heritage language children living in German-speaking Switzerland (n=66), mean age: 10;6 -.
- Spanish heritage language children living in French-speaking Switzerland (n=25),² mean age: 10;9.

• Children growing up in a Spanish monolingual context in Argentina (CG, n=47) mean age: 10;5.

All children participated with parental consent.

The children growing up in Switzerland attended public school. They also had 1.5 to 2 hours per week of optional Spanish heritage language and culture (SHLC) courses with native Spanish teachers. Data was collected in 13 classes from eight SHLC institutions (three in the French speaking part of Switzerland and five in the German part), each of them following a different teaching program. Attendance at the Spanish courses ranged from 1 semester among the younger children to 6 years. The heritage language speaker groups (HLG) were heterogeneous in their Spanish proficiency level and the percentage of input in Spanish at home. Most HL children were born or arrived in Switzerland at an early age (mean age of arrival = 5;2).

Three-quarters of HLG children living in German-speaking Switzerland came from bi-national families (one Swiss parent and one parent with migration background, cf. Table 1) while half of the HLG children living in French-speaking Switzerland (13/25) came from bi-national families (χ^2 (1) = 4.8, p < .05).

Table 1.SHL Families' Place of Birth and Nationality

	German-speaking (N=66)	French-speaking (N=25)
Bi-national Families	75%	52%
Born in Switzerland	88%	84%

Comparison group children (CG, N=47) grew up in a mostly monolingual environment in the province of Córdoba (Argentina), where they attended a private school. These children also took foreign language courses (6 hours per week of Italian and 2 hours per week of English).

Parent Questionnaire

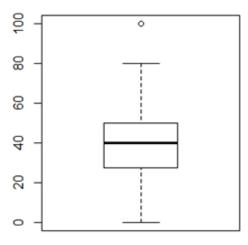
A parent questionnaire was distributed to collect information about the children's linguistic background (see Appendix 2). Parents were asked to provide information about early family literacy practices (in terms of frequency of storytelling before the children started school), the percentage of Spanish input at home, and the amount of attendance at SHLC courses. Amount of attendance was calculated in months, since some children were in their first year of attending courses at the time of the study.

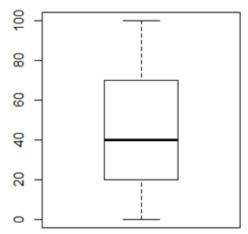
Concerning the exposure to languages at home, the mean presence of Spanish was estimated at 44% for the families in both French- and German-speaking parts of Switzerland (median=40%), but the variation was larger in the French speaking group (see Figure 1).

Figure 1. Input of Spanish at Home in the HLG by Percentage



Spanish Input in French speaking children





In regard to literacy practices at home, the frequency of storytelling in school and heritage languages was comparable: 44% of the HLG families reported telling stories every day in the school language (French or German) and 42% in Spanish.

There were no differences between the linguistic regions regarding the proportion of parents reading every day in the school language (χ^2 (1) = 0.2, p > .05) and in HL Spanish (χ^2 (1) = 0.06, p > .05)

The questionnaire included questions on the parents' level of education. Table 2 synthetizes the main results for all groups.

Table 2.Parents' Level of Education

		Н	Comparison Group			
	Gerr	nan	Fre	French		
	Mother	Father	Mother	Father	Mother	Father
University	62%	58%	52%	48%	51%	57%
Vocational		36%	40%	44%	13%	2%
or Tertiary						
level	33%					
Secondary	5%	-	4%	4%	30%	32%
Primary	-	2%	4%	4%	-	-
No answer	-	5%	-	-	6%	9%

Written Task and Procedure

The stimuli consisted of a silent three-minute animated short film called *Something Fishy* (Konyha, 2002). The story of this short movie was presented in two episodes. It takes place in the ocean, where a lobster searching for food is suddenly pursued by a piranha that will then itself be pursued by a shark and finally be saved by other piranhas that eat the shark; at the end the lobster is safe in a glass bottle. The video was selected because of its canonical structure, theme, and interest for children. For a detailed description of the video's structure, see Appendix A. Participants watched the short film and then were asked to write the story in Spanish. They were not given a time limit to write the story. Children needed 30 minutes on average for the whole test (video and writing).

Participants were tested at the end of the school year, in the frame of the HLC courses (HLG) or in the school setting (CG). Altogether, 118 writing samples were collected for this part of the study.

Data Treatment

All the texts were analyzed in terms of narrative categories of story grammar, adapted from Stein and Glenn (1979). We also calculated the length of texts – total number of words – as a measure of overall writing fluency, allowing us to better contextualize the assessment of narrative competence. Likewise, we identified and counted the occurrence of fictional formulaic markers "Había una vez/Érase una vez" [Once upon a time] as resources that complete the structure and are indicators of narrative complexity.

Children's texts were independently rated for the presence of narrative grammar elements and formulaic markers by the authors. Raters determined whether each of the targeted elements occurred at least once in the story (scored as 0 for absence or 1 for presence for each element). All differences in coding were discussed and resolved.

RESULTS

Two research questions guided our study. The first one focused on the differences (resp. similarities) between the texts produced by the HLG and the CG, in terms of narrative competence:

RQ1: Are there differences in the narrative complexity of texts produced by heritage language speakers and Spanish-speaking children growing up in a monolingual context?

The second axis of analyses concerns the factors potentially having an impact on narrative writing performance in Spanish:

RQ2: Which factors have an influence in the heritage speakers' written narrative productions? The results will be organized in consideration of these questions.

Narrative Complexity in Heritage and Monolingual Speakers of Spanish

Table 3 shows the means and standard deviations for the use of narrative categories, formulaic markers and length in the different groups.

Table 3.Means and SD of Narrative Measures

			HL	G			(CG
	Germar Speaker		French Speake	_	HLG TOTA	L		
	$\dot{\mathbf{M}}$	SD	$\dot{\mathbf{M}}$	SD	\mathbf{M}	SD	\mathbf{M}	SD
Length	81.5	38.1	87.7	39.2	84	38.	81.	22.3
						4	5	
Narr.	42.9	14.6	43.7	16.2	43.8	14.	42.	7.4
Cat						4	7	
%								
Form.	0,14	0.34	0.04	0.20	0.11	0.3	0.0	0.2
Markers							7	

No significant differences in text length between the HLG and the CG (t (46) = 0.743; p > .05) were found. In regard to the mean number of narrative categories recalled, the HLG and the CG show a similar mastery of the narrative scheme (t (45) = 1.381; p > .05). It is nevertheless worth mentioning that the standard deviation is higher in the HL groups than in the CG. This difference may result from the comparison group attending two classes in the same school while the heritage speakers group was composed of different classes in different institutions, and the time attending courses also varied (see Methodology). In addition, the heritage speakers were variably exposed to Spanish in their families and community, especially in the French speaking part of Switzerland (cf. Figure 1). This type of heterogeneity constitutes an important characteristic of heritage speakers in general.

On average, the texts are complete and well structured. The following examples illustrate the narrative scheme of texts produced by two children of the same age, from both the HSG and CG groups. We present first the original version, and then a version with corrected spelling and punctuation, to make them more easily understandable for the reader.

Example 1.

Un camaron estava comiendo plantas y aparecio un pez el camaron empezo a nadar y llego a un lugar lleno de esqueletos el camaron se metio en una botella y el pez no se lo pudo comer y aparecio un tiburon y se queria comer el pez per abia muchos pez- es y tenian dientes filosos y se comieron el tiburon. (A.; CG, 9.3 years old)

Un camarón estaba comiendo plantas y apareció un pez. El camarón empezó a nadar y llegó a un lugar lleno de esqueletos. El camarón se metió en una botella y el pez no se lo pudo comer y apareció un

tiburón y se quería comer el pez pero había muchos peces y tenían dientes filosos y se comieron el tiburón.

[A shrimp was eating plants and a fish appeared. The shrimp began to swim and he arrived to a place full of skeletons. The shrimp went inside a bottle and the fish could not eat it and a shark appeared and he wanted to eat the fish but there was a lot of fish and they had sharp teeth and they ate the shark.]

Example 2.

Habia un cangrejito y este comyo mutchas plantas. Pero una planta metyo sus ojas. El cangrejito comyo un pocode una flor, pero un pess vio el cangrejito y ya nada por su vida. Luego ven mutchos esqueletos y sabe quien vive aqui. Ce mete en una boteya asi elpess no le puede comer. Y el pess ve un tiburon y traie su familia, esos peses tieen mutchos dientes. Luego ce comen eltiburon. Un pess veh el cangrejito y ce lo come. Fin! (G.; HLG, 9.3 years old)

Había un cangrejito. y éste comió muchas plantas. Pero una planta metió sus hojas. El cangrejito comió un poco de una flor. Pero un pez vio el cangrejito. y ya nada por su vida. Luego ven muchos esqueletos. y sabe quién vive aquí. Se mete en una botella. así el pez no le puede comer. Y el pez ve un tiburón. y trae su familia. esos peces tienen muchos dientes. Luego se comen el tiburón. Un pez ve el cangrejito. y se lo come. Fin!

[There was a crab and this one ate a lot of plants. But one plant hides its leaves. The crab ate a little bit of a flower. But a fish saw the crab and now it swims for its life. Then they see a lot of skeletons. And it knows who lives there. It goes inside a bottle and so the fish cannot eat it. The fish see a shark. And it brings its family. The fish have a lot of teeth. Then they eat the shark. A fish sees the crab and it eats it.]

These stories present a comparable structure. None of them begins with a formulaic marker. Both texts include similar elements of settings, although the second one is more elaborated. The first episode (initial event, attempt and direct consequence) is complete in both texts, except for the internal response, which is omitted in the two stories. The second episode is told similarly. The only difference is the introduction of the reaction coda in the second text, although there is a reinterpretation of the original scene.

The HLG text is, however, slightly more difficult to understand, since some subject omissions are ambiguous. In the phrase "trae a su familia" ["brings its family"] it is not clear who brings its family (i.e., the shark or the shrimp). The SHL child discourse is dependent on the context reference (here, the film) for comprehension. Context dependence is a typical feature of oral language style as opposed to written language style. However, this difference could not be considered as a general characteristic of HL speakers, since it is a typical feature of young children's production in general (Chafe, 1985).

If we analyze the recall of each narrative category, we can also observe similarities. Table 4 shows the percentage of recall in each category for the different groups.

Table 4.Narrative Grammar Components: Percentage of Recall

			HLG		CG
	Video Something Fishy	French Speakers	German Speakers	Total	
		%	%	%	%
First Episode	I Setting (physical context)	100	93.8	95.5	93.5
	I Setting (characters)	20.8	20	20.2	23.9
	I Setting (initial situation)	91.7	84.6	86.5	89.1
	I Initiating event	100	97	97.8	87
	I Internal response	16.7	10.8	12.4	0
	I Attempt	95.8	92.3	93.3	95.7
	I Direct Consequences	25	24,6	24.7	26.1
Second Episode	II Setting	16.7	23	21.6	6.5
_r	II initiating event	91.7	95.4	95.5	89.1
	II internal response	16.7	4.6	7.9	6.5
	II Attempt	83.3	90.8	88.8	97.8
	II Direct Consequence	95.	97	96.6	97.8
	Reaction Coda	66.7	63	64	43.5

In all the groups "initiating event" and "attempt" were well recalled. This point is not surprising as these categories enable the inference of the characters' goals and consequently

play an important role in the story's development (see review in Gárate Larrea, 1994). The first episode's setting was also better recalled than the second episode's setting, probably because there is less new information in the second setting: the initial situation is directly connected with the last consequences of the first episode. Internal responses from the first and second episodes are the less frequent categories in all groups (even if they are more frequent in the French speaking group). Indeed, internal response involves psychological information and according to the literature it is more difficult to remember and to integrate in the texts, especially for young children, who tend to include more concrete actions (Stein & Glenn, 1982). It is worth noting that the CG stories showed a lower frequency of use of some narrative grammar components and that these differences were significant in the first internal response (t (133) = 2.528, p < .05) and setting in second episode (t (132) = 2.2628, p < 05) than those of HLG. The heritage speakers seemed therefore to better integrate psychological information in their narratives, which could be explained by their general experience with narratives or by the age of participants, since the mean age of HLGs was slightly higher than the mean age of CGs.

Besides these components, the percentage of category recall is quite similar for all groups. No significant difference was found between groups in the presence of fictional markers (t= (44) = 1.53; p > .05).

These results suggest that, as far as the narrative scheme is concerned, the HLG do not show a disadvantage compared to the CG. The demands and difficulties of writing in the HL do not seem to show a negative influence in their well-developed narrative competence in Spanish. If the use of linguistic devices, such as co-reference devices or vocabulary, had been considered, clearer differences would have been found between groups (cf. Sánchez Abchi & De Mier, 2017).

Factors Having an Impact on Narrative Competence

In this section, we analyze the possible incidence of contextual factors on narrative complexity (RQ2). We first focus on the HL group and then on children growing up in a Spanish monolingual context.

Heritage speakers

Regarding the HLG, we investigate the potential associations between narrative categories recalled and information collected through the parent questionnaire: typological relatedness between the languages in presence (French-Spanish vs. German-Spanish), age, home literacy practices, exposure to Spanish in the family, the educational level of parents, and amount of time attending SHLC courses.

With respect to the possible incidence of familiarity typology between languages in the study, we compared the Spanish texts produced by children from different regions in Switzerland. Considering that Spanish is a closer language to French than to German, we expected that children with French as a school language would outperform the children with German as a school language. However, as shown in Table 3, the means of German speakers and French speakers were very similar. Although a slight advantage for French speaking children was

observed, there was not a statistically significant difference between French and German speakers' groups, neither for the length of texts (t= (24) = -0.59; p>.05), nor for the narrative categories (t= (24) = 0.420; p>.05), nor even for the use of formulaic markers (t= (24) = -1.00; p>.05).

In order to locate the factors influencing narrative complexity, we also ran a correlation analysis with other variables: age of children, exposure to Spanish at home, parents' level of education and literacy practices in the family (i.e., frequency of storytelling in Spanish and frequency of storytelling in the school language before starting school as well as amount of attendance in heritage language courses). Table 5 summarizes the principal results.

Table 5.Correlations between Narrative Complexity and Contextual Factors in HLG

	German-s	peaking		French-spe	aking	
	Length	Narr. Comp.	Form. Marker	Length	Narr. Comp.	Form. markers
Story	.159,	.026,	.197,	223,	317,	.246,
telling school language	n.s.	n.s.	n.s.	n.s	n.s.	n.s.
Story telling heritage language	.042, n.s.	.129, n.s.	.051, n.s.	.415, p<.05	.269, n.s.	.201, n.s
Exposure	0.79,	.029,	085,	.116, n	.263, n.s.	013,
to Spanish in the family	n.s.	n.s.	n.s	.S		n.s.
Age	.243,	.279,	015,	.499,	.646, p	085,
	p=.05	p<.05	n.s.	p<.05	<.01	n.s.
Mother's	.026,	.069,	085,	.185,	.196, n.s.	.152,
level of education	n.s.	n.s.	n.s.	n.s		n.s
Father's	.059,	076,	026,	.188,	.169, n.s.	.164,
level of education	n.s.	n.s.	n.s.	n.s		n.s
Amount	312,	.252,	.104,	.451,	.544,	.043,
of SHLC courses -	p<.05	p=.05	n.s.	p<.05	p<.01	n.s.

As can be seen in Table 5, participant age and duration of SHLC course attendance are the two only significant predictors of narrative complexity for both HLG groups. Indeed, among the youngest children, very incomplete and short texts were observed. The next example

shows a text that only includes two components: the characters' introduction as a part of the setting and the direct consequence of the final episode:

Example 3.

Habia Zanaorias violetas y un Tiburon y Pirañas. Las Pirañas se comen el Tiburon.

Habia zanahorias violetas y un tiburon y pirañas. Las Pirañas se comen el tiburón. (L. 9.1 years old, HLG).

[There were violet carrots and a shark and piranhas. The piranhas ate the shark].

However, good and complete texts were also identified at this age, suggesting that other factors contribute to explain the narrative complexity development. We will turn to this in the discussion.

A positive low to moderate correlation was also found between the duration of attendance in months to heritage language courses and 1) the percentage of narrative categories recall, 2) the length of texts. However, this result should be interpreted with caution, since frequently, although not always, the duration of participation in Spanish courses increases with age. In French-speaking Switzerland, a moderate correlation was also found between the amount of storytelling activity in the family and the length of texts. Nevertheless, this correlation was not found in participants living in German-speaking Switzerland, or for the other measures (formulaic markers and narrative complexity), which is surprising, as a relation between narrative competence and storytelling frequency was anticipated based on the literature (Geva & Olson, 1983; Sulzby & Teale, 1991). A possible explanation for this difference in previous studies is that the literacy practices may have a greater influence on narrative performance at the beginning of school, and that this influence could be masked by other factors later in development.

Comparison Group

As most of the questionnaire variables for HLG were not relevant to the background of children growing up in a monolingual context (e.g., exposure to Spanish at home, frequency story telling in the school language, or participation in SHLC courses), we did not include them in the questionnaire or run correlational analyses on them. Therefore, for this group, three factors are identified as potential predictors of narrative competence, texts' length and use of formulaic markers: age of the participants, mothers' level of education, and - fathers' level of education. Table 6 shows the correlations between these variables within the comparison group.

Table 6.Correlations in the Comparison Group

	Length	Narrative	Formulaic
		complexity	markers
Age	.169, n.s.	.068, n.s.	141, n.s.
Mother's Level of education	.124, n.s.	.317, p<.05	181, n.s.
Father's Level of education	065, n.s.	.084, n.s.	131, n.s.

No correlation was found with the level of education of the father on any measures, but a low to moderate positive correlation could be observed between the mothers' level of education and narrative complexity. More importantly, there was no positive correlation between age and any of the measures. This is the most interesting difference with the heritage speakers, as it suggests that developmental factors play a more important role in the HLG. A possible explanation could be that heritage speakers tend to need more time to acquire competence in retelling complex stories in Spanish, while children growing up in a monolingual context, with more constant input in Spanish, reach this threshold earlier.

DISCUSSION

In this article, we studied the narrative complexity of written texts produced by Spanish heritage speakers growing up in Switzerland in comparison to narrative skills of children growing up in a monolingual environment. Two research questions were addressed: the first one concerned the differences in narrative complexity in terms of story grammar, length of text and use of formulaic markers between the two heritage speakers groups (with French or German as school languages) and the comparison group, while the second one referred to the possible factors influencing heritage speakers' performance.

Regarding the first question, the results showed that written texts produced by Spanish heritage speakers resembled those produced by the comparison group, in terms of length, narrative grammar components, and use of formulaic markers.

If the HLG children's proficiency had been too low to allow them to make use of their narrative competence in Spanish, a difference between the heritage speakers' texts and the control group's texts would have been observed. Indeed, for children growing up in Argentina, Spanish is their school language and a better performance in their written narrative productions was expected, but the heritage speakers' production presented comparable levels of complexity. The distribution of narrative categories' recall was also similar between groups. Moreover, some categories were even best recalled by the HLG, suggesting that other factors were at issue. The absence of significant differences in narrative grammar components between the three groups suggests that heritage speakers' narrative structure production was not diminished because they have less practice writing in Spanish than the monolingual group. These results enable us to conclude that writing constraints did not influence the children's ability to produce narrative complexity. One possible explanation for these results is that children in Switzerland attend heritage language courses; they consequently have enough writing practice in Spanish to produce

complex narrative texts. Nevertheless, as we did not focus on the writing teaching practices in the HL courses, this explanation cannot be verified empirically in our data.

Another possible explanation, pointed out by an anonymous reviewer, is that the stimulus for the production of the story was very simple for the target age of the children participating in the study. However, two factors suggest that the instrument was reliable to assess the study subjects' narrative skills. First, age and narrative complexity are positively correlated, suggesting that differences within the HSG (although not with the CG), are due to the participants' age, and that the stimulus allows us to bring those differences to light. Furthermore, HSG managed to better integrate some narrative categories (internal response, second episode setting) that were less frequent in the CG. In fact, the instrument was complex enough to show that older children or those with more experience with narratives were able to produce more sophisticated texts. Thus, the stimulus seems appropriate to show developmental differences and other differences, if any, between groups. Nevertheless, in order to control the possible incidence of the stimulus in the comparison of narrative skills, more complex and challenging stories for the children at the target age should be used in future studies.

Regarding our second research question, we found a relationship of age and time attending SHLC classes with narrative complexity and text length in the HLG. Even if less complex narrative structures were identified among younger children, there were also very complete and coherent texts in this age range, suggesting that a threshold in the development of narrative competences had already been reached. In future research, this hypothesis could be verified empirically on a design including heritage and school language, a wider age range and, as mentioned before, a more complex stimulus to investigate earlier development related to literacy practice at home.

The typological similarities between the languages under study did not seem to influence the level of narrative complexity. Indeed, texts produced by French speaking children were not significantly more complex than those written by German speakers, as we could have expected, since French and Spanish are proximately related languages. At least at the level of narrative competence, language proximity seems not to facilitate the construction of more complex narratives for HL speakers.

We did not consider family composition (e.g., the percentage of bi-national families) in our correlation analysis because, even if this information allows us to better understand the linguistic background of the families, the percentage of Spanish spoken at home seemed to be a more accurate variable to explain children's performance. However, it is quite surprising that the percentage of Spanish spoken at home is not a predictive factor for performance in our work. The absence of correlation between the percentage of Spanish at home and the narrative components recall suggests that the HL input probably affected other levels of language, but not the narrative competence itself.

We did not find a correlation neither with the literacy practices nor with parents' level of education in the HL group. Regarding the literacy practices in the family, it is possible that they

more decisively influence the narrative skills in early stages of development, which should be addressed in future studies with younger children.

This study has provided information about written narrative skills in heritage speaker children. In all, Spanish heritage speakers showed similar narrative competences to children growing up in a context where Spanish is the majority language. The capacity to produce complex narratives in Spanish seems not to be decisively affected neither by the input in the heritage language, nor by writing constraints. From a didactic perspective, in terms of narrative complexity, teaching writing narratives to heritage speakers and to monolingual speakers does not seem to yield different results. In order to learn to write narratives in the HL, knowledge of linguistic devices necessary to storytelling – verb tenses, textual markers, co-referring expressions- could be more critical.

In future works, other aspects of text production, particularly the use of linguistic devices such as cohesive resources, verb tenses or vocabulary should also be explored, to achieve a better understanding of the role of input and writing abilities in narrative competence and the storytelling performance of SHL children.

REFERENCES

- Álvarez, E. (2003). Character introduction in two languages: Its development in the stories of a Spanish-English bilingual child age 6; 11–10; 11. *Bilingualism: Language and Cognition*, 6(03), 227-243.
- Berninger, V. W. (1999). Coordinating transcription and text generation in working memory during composing: Automatic and constructive processes. *Learning Disability Quarterly*, 22(2), 99-112.
- Berman, R. A. (2001). Narrative development in multilingual contexts. *Narrative development in a multilingual context*, 23, 419-428.
- Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum.
- Berman, R. A. (1995). Narrative competence and storytelling performance-how children tell stories in different contexts. *Journal of Narrative and Life History*, *5*(4), 285-313.
- Berthele, R. & Lambelet, A. (in press). *Interdependence or Independence? First and second language literacy development in migrant children*. Multilingual Matters.
- Borzone, A. M. (1996). Leer y escribir a los 5. Buenos Aires, Argentina: Aique.
- Borzone, A. M. & Granato, L. (1995). Discurso narrativo: algunos aspectos del desempeño lingüístico en niños de diferente procedencia social, *Lenguas Modernas*, 22, 137-166.
- Bruner, J. (1991). The narrative construction of Reality. Critical Inquiry, 18, 1-21.
- Camus, P. & Adrada-Rafael, S. (2015). Spanish heritage language learners vs L2 learners: What CAF reveals about written proficiency. *E-JournALL*, *EuroAmerican Journal of Applied Linguistics and Languages Special Issue*, Volume 2, 31-49. Available from http://www.e-journall.org
- Boudreau, D. M., & Hedberg, N. L. (1999). A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *American Journal of Speech-Language Pathology*, 8(3), 249-260.

- Cain, K. (2003). Text comprehension and its relation to coherence and cohesion in children's fictional narratives. *British Journal of Developmental Psychology*, 21(3), 335-351.
- Chafe, W. (1985) Linguistic differences produced by differences between speaking and writing. In D. Olson, N. Torrance, and A. Hildyard (Eds.), *Literacy, language and learning: The nature and consequences of reading and writing* (pp. 105-123). New York, NY: Cambridge University Press.
- Desgrippes, M., & Lambelet, A. (2016). Littératie en langue d'origine et langue de scolarité, tout est-il transférable? [Literacy in heritage language and in school language, is everything transferable?]. Neuchâtel, Bulletin Suisse de Linguistique Appliquée, 103, 79-100.
- Gárate Larrea, M. (1994) La comprensión de cuentos en los niños. Un enfoque cognitivo y sociocultural. Madrid: Siglo XXI.
- Roca, A., & Colombi, M. C. (Eds.). (2003). *Mi lengua: Spanish as a heritage language: Research and practice*. Washington, DC: Georgetown University Press.
- Fiestas, C. E., & Peña, E. D. (2004). Narrative Discourse in Bilingual Children: Language and Task Effects. *Language, Speech, and Hearing Services in Schools*, *35*(2), 155-168.
- Fitzgerald, J., & Teasley, A. B. (1986). Effects of instruction in narrative structure on children's writing. *Journal of educational psychology*, 78(6), 424.
- Geva, E., & Olson, D. (1983). Children's story-retelling. First Language, 4(11), 85-109.
- Gutiérrez-Clellen, V. F. (2002). Narratives in two languages: Assessing performance of bilingual children. *Linguistics and Education*, *13*(2), 175-197.
- Gutiérrez-Clellen, V. & Quinn, R. (1993). Assessing Narratives of Children From Diverse Cultural/Linguistic Groups. *Language, Speech, and Hearing Services in Schools, Volume 24*, 2-9.
- Idiazábal, I. & Larrigan, L. M. (1997). Transfert de maîtrises discursives dans un programme d'enseignement bilingue basque –espagnol.[Transfer of discursive patterns in a bilingual Basque-Spanish teaching program] AILE, 10, 107-125.
- Heilmann, J., Miller, J. F., Nockerts, A., & Dunaway, C. (2010). Properties of the narrative scoring scheme using narrative retells in young school-age children. *American Journal of Speech-Language Pathology*, 19(2), 154-166.
- Konyha, E. (Director). (2002). Something fishy [video], n.c., Canada: Brainchild Studios Inc.
- Labov, W., & Waletzky, J. (1997). Narrative analysis: oral versions of personal experience *Journal of Narrative and Life History*, 7, 3-38, 1997. (Reprinted from Essays on the verbal and visual arts: Proceedings of the 1996 annual spring meeting, pp. 12-44), J. Helm (Ed.), 1967, American Ethnological Society.
- Lambelet, A., Desgrippes, M., Decandio, F. & Pestana, C. (2014). Appris dans une langue, transféré dans l'autre? [Learned in one language, transferred to another?] *Mélanges CRAPEL* (35), 99-114.
- Larrigan, L. M., Idiazábal, I. & García Azcoaga, I. (2015). Cartas al director escritas en euskera y castellano por jóvenes bilingües. Transferencias y destrezas textuales y discursivas. [Letters to the director written in Basque and in Spanish by bilingual young children. Transfers and linguistic and discursive skills] In I. García-Azkoaga & I. Idiazabal (Eds.), *Para una ingeniería didáctica de la educación plurilingüe* [For a didactic design of multilingual education], (pp. 147-173). Vizcaya, Spain: Universidad del País Vasco (UPV/EHU).

- Leppänen, S., & Kalaja, P. (2002). Autobiographies as constructions of EFL learner identities and experiences. In J. Haines; E. Kärkkäinen, & T. Lauttamus (Eds.), Studia Linguistica Et Litteraria Septentrionalia. Studies Presented to Heikki Nyssönen (pp. 189-203). Oulu, Finland: Department of English, Oulu University,
- Mandler, J. M., & Johnson, N. S. (1977). Remembrance of things parsed: Story structure and recall. *Cognitive psychology*, *9*(1), 111-151.
- Mandler, J. M., Scribner, S., Cole, M., & De Forest, M. (1980). Cross-cultural invariance in story recall. *Child development*, 19-26.
- McCabe, A. (1997). Developmental and cross-cultural aspects of children's narration. In Bamberg, M. (Ed.) *Narrative development: Six approaches*. (pp. 137-174). Mahwah, NJ: Psychology Press.
- Merritt, D. D., & Liles, B. Z. (1987). Story Grammar Ability in Children with and without Language Disorder: Story Generation, Story Retelling, and Story Comprehension. *Journal of Speech, Language, and Hearing Research*, 30(4), 539-552.
- Miller, P. J., Wiley, A. R., Fung, H., & Liang, C. (1997). Personal storytelling as a medium of socialization in Chinese and American families. *Child Development*, 68, 557-568.
- Montanari, S. (2004). The development of narrative competence in the L1 and L2 of Spanish-English bilingual children. *International Journal of Bilingualism*, 8(4), 449-497.
- Montrul, S. (2010). How similar are adult second language learners and Spanish heritage speakers? Spanish clitics and word order. *Applied Psycholinguistics*, 31(01), 167-207.
- Montrul, S. (2011). Morphological errors in Spanish second language learners and heritage speakers. *Studies in Second Language Acquisition*, 33(02), 163-192.
- Nelson, K. (2006). Narratives from the crib. Cambridge, MA: Harvard University Press.
- Paul, R., Hernandez, R., Taylor, L., & Johnson, K. (1996). Narrative Development in Late Talkers Early School Age. *Journal of Speech, Language, and Hearing Research*, 39(6), 1295-1303.
- Pavlenko, A. (2002). Narrative Study: Whose Story Is It, Anyway? *TESOL Quarterly, Vol. 36*, No. 2, 213-218.
- Pavlenko, A. (2006). Narrative competence in a second language. *Educating for advanced foreign language capacities: Constructs, curriculum, instruction, assessment*, 105-117.
- Polinsky, M. (2008). Heritage Language Narratives. In D. Brinton, O. Kagan, & S. Bauckus (Eds.), *Heritage language education*. *A new field emerging* (pp. 149-164). New York, NY: Routledge.
- Pearson, B. Z. (2002). Narrative competence among monolingual and bilingual school children in Miami. In D. K. Oller & R. E. Eilers (Eds.), *Language and literacy in bilingual children*. Clevedon, UK: Multilingual Matters, 113-174.
- Rahmenlehrplan für Heimatliche Sprache und Kultur, (2011) Zurich, Switzerland: Bildungsdirektion des Kantons Zürich.
- Ragnarsdóttir, H., & Strömqvist, S. (2004). *Time, space, and manner in Swedish and Icelandic: Narrative construction in two closely related languages*. Hillsdale, NJ: Lawrence Erlbaum, 113-141.
- Roth, F. P., & Spekman, N. J. (1986). Narrative Discourse. Spontaneously Generated Stories of Learning-Disabled and Normally Achieving Students. *Journal of Speech and Hearing Disorders*, 51(1), 8-23.

- Sánchez Abchi, V., Borzone, A. M., & Diuk, B. (2007). La escritura de textos en niños pequeños: relación entre la transcripción y la composición. *Universitas psychologica*, 6(3), 559-570.
- Sánchez Abchi, V. & De Mier, V. (2017). Syntactic complexity in narratives written by Spanish Heritage Speakers. *Vigo International Journal of Applied Linguistics*, *14*, 125-148.
- Schwartz, A. M. (2003). ¡No me suena! Heritage Spanish speakers' writing strategies. In Roca, A., & Colombi, M. C. (Eds.), *Mi lengua: Spanish as a heritage language in the United States: Research and practice* (pp. 235-257). Washington, DC: Georgetown University Press.
- Schwartz, M., & Shaul, Y. (2013). Narrative development among language minority children: The role of bilingual versus monolingual preschool education. *Language, Culture and Curriculum*, 26(1), 36-51.
- Shapiro, L. & Y Hudson, J. (1997). Coherence and cohesion in children's stories. In J. Costermans & M. Fayol (Eds.), *Processing Interclausal relationships. Studies in the production and comprehension of text* (pp. 23-48). Mahwah, NJ: Erlbaum.
- Stein, N. L., & Albro, E. R. (1997). Building Complexity and Coherence: Children's Use of Goal-Structured Knowledge in Telling Stories. In M. Bamberg (Ed.). *Narrative development: Six approaches* (pp. 5-44). Mahwah, NJ: Erlbaum.
- Stein, N. L., & Glenn, C. G. (1982). Children's concept of time: The development of a story schema. In W. J. Friedman (Ed.), *The developmental psychology of time* (pp. 255-282). New York, NY: Academic Press.
- Stein, N. L. & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing. Vol.* 2: Advances in discourse processes (pp. 53-120). Norwood, NJ: Ablex.
- Sulzby, E., & Teale, W. H. (1991). The development of the young child and the emergence of literacy. In J. Flood, J. Jensen, D. Lapp, & J. R. Squire (Eds.), *Handbook of research on teaching the English language arts* (pp. 273-285). New York, NY: Macmillan.
- Strömqvist, S., & Day, D. (1993). On the development of narrative structure in child L1 and adult L2 acquisition. *Applied Psycholinguistics*, 14(2), 135-158.
- Valdés, G. (1999). Heritage language students: Profiles and possibilities. In J. K. J. Peyton, Ranard, D. A. & McGinnis, S. (Eds.). *Heritage Languages in America: Preserving a National Resource* (pp. 37-77). McHenry, IL: Center for Applied Linguistics.
- Verhoeven, L., & Strömqvist, S. (Eds.). (2001). *Narrative development in a multilingual context*, 23. Amsterdam, Netherlands: John Benjamins Publishing.
- Weinrich, H. (1968): *Estructura y función de los tiempos en el lenguaje* [Structure and function of tenses in language]. Madrid, Spain: Gredos.

Appendix A
Summary of the Narrative Structure of Something Fishy, considering Story grammar elements.

	Video Something Fishy		
First	Setting (physical context)	On the seabed	
Episode	Setting (characters)	A lobster/ a shrimp	
	Setting (initial situation)	The lobster is looking for food (seaweeds	
		and seagrass) but without success.	
	Initiating event	Suddenly, a pink fish – a piranha-	
		appears, with the intention to eat the	
		lobster.	
	Internal response	The lobster sees the piranha and becomes frightened	
	Attempt	The lobster runs away, followed by the	
		piranha, and seeks refugee in an empty	
		bottle.	
	Direct Consequences	Since the piranha cannot catch the	
		lobster, the latter is safe.	
Second	II Setting	The piranha is still trying to catch the	
Episode		lobster.	
	II initiating event	Suddenly, a big fish –a shark– appears.	
		He wants to eat the piranha.	
	II internal response	The piranha becomes frightened and	
		smiles a little nervously.	
	II Attempt	The piranha runs away, followed by the	
		shark, and tries to meet its family / a	
		shoal of piranhas.	
	II Direct Consequence	The shark meets the shoal of piranhas and	
		it is eaten by them.	
	Reaction Coda	The piranhas have eaten enough and they	
		are satisfied.	
		The lobster appears to provoke them. But	
		the piranhas scare it and the lobster flees.	

Appendix B

A	4 1 4 1	• \
Questionnaire	itranslated	version)
Questioninaire	(ii aiibiaica	v CI BIUII)

1) I	Languages s	poken	by 1	the child,	besides	the school	language
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2)	Which language does	the child speak	with the mother?	?
_,				´

- 3) Which language does the child speak with the father?_____
- 4) Please estimate the percentage of presence of Spanish at home and the percentage of other languages:

German / French	%
Swiss German	%
Spanish	%
Other Languages	%
Total:	100%

5) Whan di	d vour child	hagin the co	urses of Spanis	h ac a haritaga	Language'
.,	, vviich un	a voui ciiiia	nesin me co	ui ses vi sivailis	II as a lici hayc	Language.

(Month and year)	
Please indicate the hours per week:	

6) When your child was still not able to read by himself or herself, did somebody read books to him or her in Spanish or in the School Language?

In German/ French	In Spanish	
(If in another language, please		
indicate it)		
Almost never	Almost never	
Once or twice a year	Once or twice a year	
Once or twice a week	Once or twice a week	
Almost every day	Almost every day	

Is the mother Swiss? If not, how long has the mother lived in Switzerland? Country of origin:

Is the father Swiss? If not, how long has the father lived in Switzerland? Country of origin:

7) Level of education of Parents. Please mark the education level already completed.

Mother		Father
Primary School		Primary School
Secondary school I (9 years of compulsory education)		Secondary school I (9 years of compulsory education)
Secondary school II (12 years of education).		Secondary school II (12 years of education).
Vocational education		Vocational education
University		University

NOTES

- <u>1</u>. In this part of Switzerland, even when standard German is taught at school, Swiss-German dialect is spoken in everyday life.
- 2. The French speaker group is smaller but is proportional to the population distribution of other linguistic regions in Switzerland.