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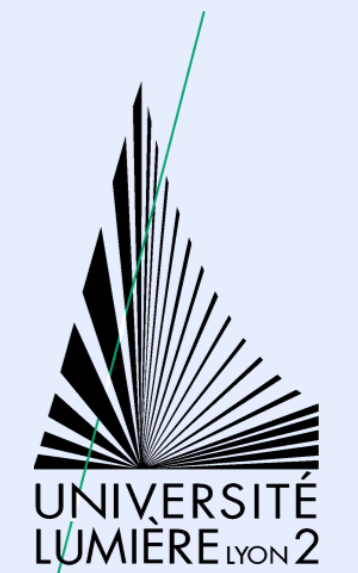
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The relationship between input factors and bilingual proficiency: Evidence from French-English bilingual children

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Introduction

It is widely recognised that a large number of individual factors can account for a child's success or failure in becoming bilingual, including language use, language proficiency and language attitudes. Quality and quantity of input and output have a key role in the bilingual acquisition process (De Houwer, 1995; Yamamoto, 2001; Oller & Eilers, 2002). Language spoken at home has a considerable influence on oral language outcomes (Verhoeven, 1987; Cobo-Lewis *et al.*, 2002; Gathercole, 2005). Bilingual children's peers have been found to have an important role to play in the development and maintenance of bilingualism (Verhoeven, 1991; Yamamoto, 2001; Oller & Eilers, 2002; Gathercole & Thomas, 2005). The language used in school can also play a critical role in whether the minority language is maintained and developed (Yamamoto, 2001; Gathercole & Thomas, 2005). Bilingual children's cultural attitudes have also been shown to be a good predictor of their degree of bilingualism (Grosjean, 1982; Verhoeven, 1991).

The overall aim of this presentation is to explore how certain input factors relate to bilingual children's performance in English and French.

Research questions and hypothesis

1. What is the strength of the relationship between **overall language exposure estimates** and **language proficiency measures** in each language?
2. What is the strength of the relationship between children's **current language input** and their scores on the **language proficiency measures** in each language?
3. What is the strength of the relationship between children's **current language output** and their scores on the **language proficiency measures** in each language?
4. What is the strength of the relationship between the child's **stronger language** and the following **variables related to language use**?
 - > the language the child finds easier to speak; the language the child prefers speaking; the language the child finds easier to read in; the language the child prefers reading in; the child's cultural allegiance; the language used with friends in the playground; the language used with toys; the language the child would choose to use in his/her perfect school.

Hypothesis: There will be a significant positive relationship between each of the sets of variables investigated in the four research questions.

Methods

Setting

- Primary section of an international state school in France
- 20 hours of school curriculum taught in French, 6 hours taught in English

Participants

- 38 French-English bilinguals (23 girls, 15 boys) aged from 6;10 to 8;3 ($M = 7;4$; $SD = 4$ months); middle to high SES families
- Second year of primary school
- 4 family types:
 - > 1 native French and 1 native English speaking parent ($N=19$)
 - > 2 native French speaking parents who having lived in an English speaking environment for between 3 and 5 years with their children have been back in France for between 4 and 30 months ($N=11$)
 - > 2 English speaking parents who have been in France with their children for more than 3 years ($N=4$)
 - > 2 English speaking parents who have been in France with their children for under 18 months ($N=4$)

Data collection tools

- Language proficiency
 - > Standardised versions of the Peabody Picture Vocabulary Test (PPVT)
 - ❖ British Picture Vocabulary Scale-II (BPVS) (Dunn *et al.*, 1997)
 - ❖ L'Echelle de Vocabulaire en Images Peabody (EVIP) (Dunn *et al.*, 1993)
 - > Student Oral Language Observation Matrix (SOLOM)
 - ❖ English version and French translation
- Language Background and Experiences
 - > Parents' questionnaire
 - > Children's questionnaire



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Results

Research question 1

Table 1: Pearson correlations between children's percentage contact time for English and English proficiency measures

N=38	BPVS	SOLOM
% contact time English term	.58**	.77**
% contact time English holidays	.51**	.73**

** $p < .01$

Table 2: Pearson correlations between children's percentage contact time for French and French proficiency measures

N=38	EVIP	SOLOM
% contact time French term	.37*	.54**
% contact time French holidays	.38*	.48**

** $p < .01$
* $p < .05$

Tables 1 and 2 show that the language proficiency measures in each language are closely related to overall language exposure estimates provided by parents in each language. So if children's overall exposure to one language is substantially lower than it is to the other, their level of proficiency in each will reflect these exposure differences.

Research questions 2 & 3

Language input and output in English

Table 3: Pearson correlations between language input measures for English and English proficiency measures

N=38	BPVS	SOLOM
Mother to child	.28**	.48**
Father to child	.55**	.46**
Sibling(s) to child	.34*	.53**
Friends in playground to child	.25	.33**

** $p < .01$
* $p < .05$

Table 4: Pearson correlations between language output measures for English and English proficiency measures

N=38	BPVS	SOLOM
Child to mother	.3*	.62**
Child to father	.52**	.49**
Child to sibling(s)	.44**	.56**
Child to friends in playground	.24	.44**

** $p < .01$
* $p < .05$

Tables 3 and 4 show there is a strong association between quantity of input and output in English and the resulting language proficiency. The correlations for output are generally higher than those for input highlighting the importance for bilingual children of using English, the minority language, productively with a range of interlocutors for it to be maintained and developed. Although children spend proportionately less time with their friends in the playground than they do with their immediate family, there is a definite relationship between the input and output readings and the language performance readings for interaction with friends in the playground.

Language input and output in French

Tables 5 and 6 show that there is generally an association between input and output in French and the French proficiency measures, although weaker than the corresponding results for English.

Since French, the majority language, is widely available in a range of contexts beyond the family circle and school friends, the French readings do not represent the children's total contact with French.

In contrast, the English readings are more representative of the children's overall daily English exposure which is more likely to be limited to contact with immediate family and, to a lesser degree, with friends.

So if English is not present in the home, it will be hard for it to be maintained and developed when the children are still so young.

Table 5: Pearson correlations between language input measures for French and French proficiency measures

N=38	EVIP	SOLOM
Mother to child	.21	.24
Father to child	.42**	.43**
Sibling(s) to child	.38*	.43**
Friends in playground to child	.24	.28*

** $p < .01$
* $p < .05$

Table 6: Pearson correlations between language output measures for French and French proficiency measures

N=38	EVIP	SOLOM
Child to mother	.16	.12
Child to father	.4*	.36*
Child to sibling(s)	.34*	.53**
Child to friends in playground	.24	.28*

** $p < .01$
* $p < .05$

Research question 4

Table 7: Spearman correlations between child's stronger language and variables related to language use

N=38	Language child finds easier to speak	Language child prefers speaking	Language child finds easier to read in	Language child prefers reading in	Dominant culture according to parents	Cultural allegiance according to child	Language used with friends in playground	Language used playing with toys	Language used in perfect school
Child's stronger language	.7**	.46**	.33*	.46**	.74**	.52**	.59**	.58**	.43**

** $p < .01$
* $p < .05$

Table 7 shows there is a clear link between the child's stronger language and each of the variables related to the child's everyday life. So once a child clearly has a weaker language, our findings suggest he/she will be less likely to seek out opportunities to use it. As a result, if language exposure is, indeed, closely associated to language proficiency, if a child chooses to use his/her dominant language rather than the weaker one, proficiency in the latter will inevitably regress.

Discussion

These results offer compelling evidence for the need to create opportunities to promote the child's weaker language, especially if this is the minority language, available only in a restricted number of domains and, consequently, having fewer potential interlocutors. If specific measures are not taken to help maintain and develop the minority language, it can gradually be lost, particularly if it is not present in the home.

Friends clearly play a key role in the promotion of the minority language. So having friends who are highly competent speakers of the minority language can be determining for its maintenance and development. It is therefore important to find ways of encouraging friendships and interactions with native speakers of the children's weaker language in order to increase contact with it.

As children get older and spend more time outside the home, we believe that the language contact they have with friends in their social networks will impact increasingly on their language proficiency in each language, while the influence of the language spoken in the home will tend to diminish. This highlights further the essential role played by friends in the promotion of the minority language.