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ABSTRACT

Prior research on early lexical acquisition in bilingual infants has been used by Clark (1987) to support the Principle of Contrast, which states that every two forms contrast in meaning. In this study of an English-Spanish bilingual child, it is argued that the Principle of Contrast is not applicable to bilingual acquisition in general. Daily diary records were supplemented by weekly video recordings from age 1;3 to 1;10. The adults involved spoke either only English with the child or only Spanish. The child's lexicon up to age 1;10 showed that one-third of the child's first 150 words was made up of translation equivalents that were synonymous in reference. Contrast, therefore, cannot be generalized to include bilingual acquisition if there is even one case that refutes its condition that children will give priority to known words and reject apparent synonyms in the earliest stages of acquisition, (Contains nine references.) (Author/JP)

BILINGUAL EVIDENCE AGAINST THE PRINCIPLE OF CONTRAST

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ABSTRACT

Prior research on early lexical acquisition in bilingual infants has been used by Clark (1987) to support the Principle of Contrast which states that every two forms contrast in meaning. Clark claims that young bilingual children will reject synonyms across languages until they have a vocabulary of about 150 words. She adds that these children "typically make use of a single phonological system as well as a single lexicon" (1987: 13-14). Such a statement implies misleadingly that the controversy over one system or two systems in bilingual acquisition has been resolved in favour of the one-system hypothesis.

The purpose of this paper is to present new evidence to show that the Principle of Contrast is not applicable to bilingual acquisition in general. In my study of an English-Spanish bilingual child, daily diary records were supplemented by weekly video recordings from age 1;3 to 1;10. The adult(s) involved would speak either only English with the child (thus establishing an English-language context) or only Spanish (Spanish-language context). The recorded sessions took place mainly in the living room of the child's home with the child playing with the same toys and books in all sessions. A type of controlled situation was created inadvertently whereby we could see by keeping records whether the child truly possessed vocabulary in both languages to name or talk about the same toys and books. Video recordings show the child using crosslinguistic synonyms even when she had less than 50 words in her vocabulary. For example, she would pick up the old shoe that was left in her toy box and say "shoe" to her monolingual English-speaking grandmother on one occasion and say its Spanish equivalent "zapato" on another when picking up the same shoe to show to a Spanish-speaking adult interlocutor.

The child's lexicon up to age 1;10, which was reconstructed from the data in diary and video/audio recordings, showed that one-third of the child's first 150 words was made up of translation equivalents that were synonymous in reference. Contrast, therefore, cannot be generalized to include bilingual acquisition if there is even one case that refutes its condition that children will give priority to known words and reject apparent synonyms in the earliest stages of acquisition (Clark 1987: 12-13). My study shows that the Principle of Contrast needs to be reformulated to be feasible for multilingual as well as monolingual acquisition.

INTRODUCTION

The Principle of Contrast that Clark (1987) advocates is a prediction about adult language use and language acquisition in general. The Principle states that "any difference in **form** in a language marks a difference in **meaning**" (Clark 1987: 2; Clark's emphasis), and it predicts an absence of synonymy in early lexical development. Clark (1987) claims that children assume this principle "from a very early point in acquisition" (Clark 1987: 10), and she uses bilingual studies as part of her evidence to support the Principle of Contrast. The aim of this paper is to show that the Principle of Contrast is not applicable to bilingual acquisition in general. Clark's evidence from bilingual studies as stated in her 1987 article will be examined and the Contrast hypothesis, evaluated in light of my study of early lexical acquisition in a child acquiring English and Spanish simultaneously from birth to age 1;10.

METHOD

My bilingual subject, Manuela, was an only child during the period of study. She lived in Brighton, England and was exposed to Spanish in the home from her parents when no monolingual English speakers were present, and to English from her grandmother and in the crèche where she went daily. Her father is a native Cuban Spanish speaker and her mother, a native British English speaker who had acquired Spanish in adulthood. Manuela's mother is a linguist and an academic at a British university, and her father is a civil engineer.

The data reported in this study come from weekly video recordings - one session with a Spanish-speaking adult interlocutor and another with an English-speaking one - and from daily diary records kept by Manuela's mother. The video camera was left on a stationary tripod mainly in the living room of the child's home when the recordings were in progress. In this way, the tripod and camera became a part of the fixtures in the child's natural environment. In the video sessions, toys and books

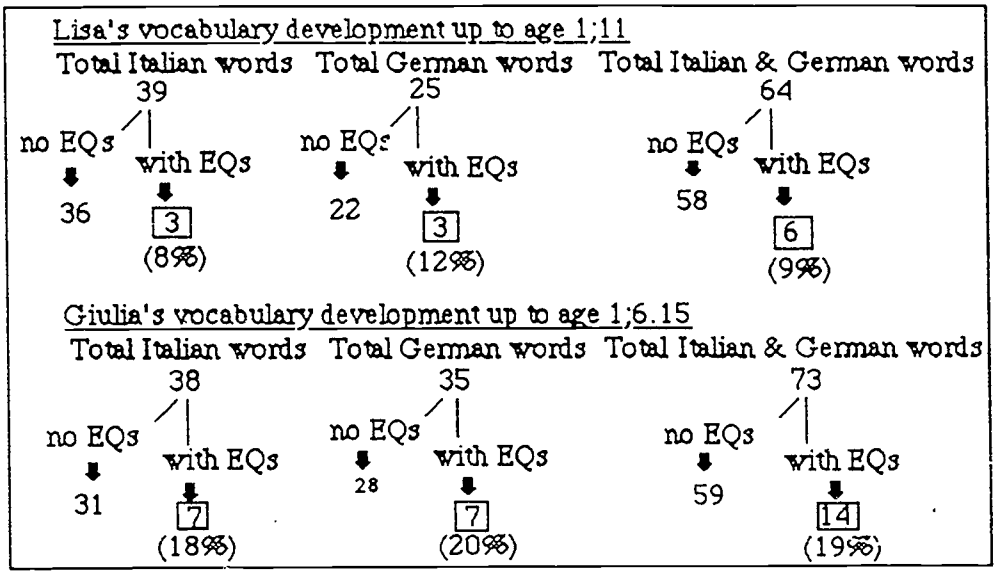
were used to stimulate conversation, so that the main activities recorded are of Manuela playing with her toys or looking at her books with her interlocutors. Since the same toys and books were used in all sessions, a type of controlled situation was created inadvertently whereby it was possible to see by keeping records whether Manuela truly possessed vocabulary in both languages to name or talk about the same toys and the same books (in other words, whether she had synonyms across her two languages).

The child's lexicon was reconstructed in order to study her vocabulary development. This was done by listing in chronological order the first appearance of each lexical item as noted in the diary records or as heard on the sixty video recordings made up to age 1;10. Each lexical entry was categorized according to an adult source word as: English; Spanish; ambiguous between English and Spanish (as in similar-sounding cognates like *baby/bebé* and *train/tren*, or onomatopoeic sounds like [mau] for *meow*); or as not having any recognizable adult English nor Spanish source word (as in the form [m̩] meaning "animal" that Manuela used at around age one to refer to dogs, cats and anything else on four legs). An indication was also given for each entry as to whether and when an equivalent appears in the other language.

RESULTS AND DISCUSSION

Clark (1987) states that "in the earliest stages of acquisition, [young bilingual children] often accept only one label for a category despite exposure to a label from each language" (Clark 1987: 13) and she cites the bilingual studies by Fantini (1974) and Taeschner (1983) as support for this statement (Fantini's 1974 study is extended further from age five to age ten in Fantini 1985). On closer examination, Fantini's (1974/1985) study of Spanish-English bilingual development may be considered as that of second language learning. According to Fantini (1985: 32), his son Mario had very little exposure to English until his third year. Spanish terms appeared at age 1;4 while English words did not even enter Mario's vocabulary until 2;6 (Fantini 1985: 43). Consequently, it is impossible to say that Mario went through an initial bilingual stage

Figure 1 Lisa and Giulia's vocabulary development in Stage I (Taeschner 1983: 25-26)

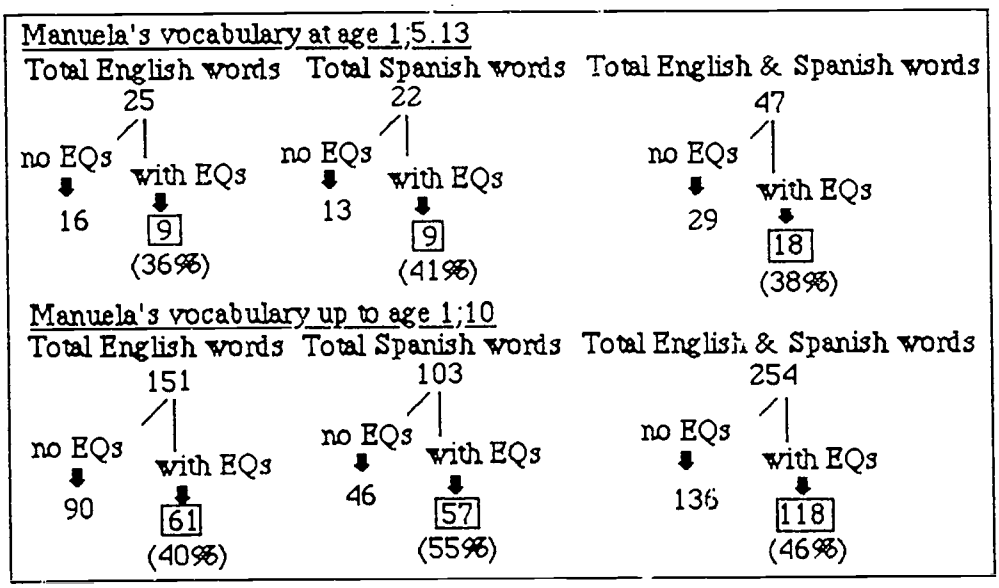


(as described by Volterra and Taeschner [1978]) with words from both languages and few synonyms. Mario only had Spanish words in the first 14 months of speech. As for Taeschner (1983), she contradicts herself by stating that the bilingual child has "no equivalents" (Taeschner 1983: 24) in the first stage of a two-stage model of lexical development where equivalents are acquired only in the second stage and then by claiming that her evidence for Stage I is the fact that the lists of words for her two Italian-German bilingual subjects, Lisa and Giulia, "contain **so few** equivalents" (Taeschner 1983: 24; emphasis mine). Figure 1 shows that in the first six months of speech, which Taeschner (1983: 29) claims is the approximate duration of Stage I, 8% of Lisa's Italian words and 12% of her German ones had equivalents while 18% of Giulia's Italian words and 20% of her German ones also had equivalents. Taeschner (1983) states that she, the German-speaking investigator, was present at most of the bimonthly tape recordings and kept the diary of Lisa and Giulia's linguistic development. Taeschner (1983) does not specify exactly how many recordings the Italian-speaking father was present in and only says that he was there "sometimes" (Taeschner 1983: 20). Since the data seem to have been mainly gathered in a predominantly German-language context when Taeschner, as the children's mother,

was there, we cannot assume that translation equivalents were not produced in Italian-language contexts in Taeschner's absence or with different adult interlocutors.

In my case study, data was collected in two different language contexts with Manuela interacting on the one hand with her monolingual English-speaking grandmother and on the other, with her Spanish-speaking father. Language context, therefore, is defined in my study according to the language spoken by the adult interlocutor to the child. Figure 2 shows Manuela's lexical production at two points in her vocabulary development. The top half of Figure 2 shows Manuela's vocabulary production in her first six months of speech (based on the first word being produced at age 0;11.12). This was done in order to compare her development with Taeschner's (1983) Stage I data for Lisa and Giulia as shown in Figure 1. The bottom half of Figure 2 shows Manuela's vocabulary development up to age 1;10. In her first six months of speech (the top half of Figure 2), 36% of Manuela's English words and 41% of her Spanish words had equivalents. Neither my results nor Taeschner's for that matter provide evidence for Clark's (1987: 13) claim that young bilingual children will reject crosslinguistic equivalents. Moreover, Figure 2 shows that equivalents across Manuela's two languages make up much the same proportion of her total English and

Figure 2 Manuela's vocabulary at age 1;5.13 and up to age 1;10



Spanish vocabulary in the early months of speech (38% at age 1;5.13) as in the latter half of her first year of speech (46% at age 1;10).

In view of my results, we cannot simply accept that young bilingual children will assume Contrast and make use of a single lexicon as Clark states in her 1987 article (Clark 1987: 13-14). Gardner-Chloros (1991) points out, moreover, that this issue of one or two systems in bilingual acquisition is by no means uncontroversial. It is surprising then that Clark (1987) stated that the acquisition of precisely 150 words serves as the point when bilingual children will "begin to admit 'doublets', equivalent terms from both languages, e.g., *leche* and *milk*, into their vocabulary" (Clark 1987: 13). Clark (1987) cites Taeschner (1983) again as support for this 150-word boundary between a period where bilingual children reject equivalents and a period where they accept them. However, no page number was given and I could not find this criterion anywhere in Taeschner (1983). Furthermore, other than specifying a six-month duration for Stage I, Taeschner (1983) is very vague about what constitutes Stage I and what constitutes Stage II in her two-stage model of bilingual lexical development. There seems to be no empirical evidence to support why Clark (1987) chose 150 words as a boundary between the rejection and the acceptance of equivalent terms. In her first six months of speech, Manuela produced only 47 English and Spanish words in total. Yet 38% of these words were matched by equivalent terms (top half of Figure 2). In Figure 1, both Lisa and Giulia were regarded as being in Stage I when they produced 64 and 73 Italian and German words in total respectively. Yet within these totals, 9% (6) of Lisa's Italian and German words and 19% (14) of Giulia's had equivalent matches (see Figure 1). The sum of the vocabulary from the two languages produced by Manuela, Lisa and Giulia respectively at what was considered Stage I falls far short of the 150 words suggested by Clark (1987) as the point between not having and having synonymous terms in the two languages.

Clark (1987) argues that the Principle of Contrast is valid because no true synonyms exist. She states that differences in dialect or register (and presumably also differences arising from the use of two languages) would constitute "meaning" differences (Clark 1987: 4). In essence, she is advocating strict synonymy whereby synonyms must be exactly equivalent in meaning and interchangeable in all contexts. However, in practice, we do not generally have strict synonymy in mind (cf. Lyons [1981: 50] on synonymous terms in standard dictionaries). We think rather of pairs of words that have the same general reference or can substitute for each other in a wide range of contexts but not necessarily absolutely. Palmer (1981: 91) and Cruse (1986: 88) also state that such "substitution" can be a test of synonymy. My study therefore identifies synonymy on the basis of the child's interchangeable use of one word for another to refer to the same object, event or process. For example, the words "duck" and "pato" are considered to be equivalent if Manuela uses both terms to refer to the same toy duck or to the same picture of a duck in a book. Similarly, "down" and "bajar" are equivalent when both terms are tokens of the same type of event for the child as when she wants to be lifted out of her high-chair.

As it turns out, it would be easy to test whether Manuela "substituted" one member of a possible equivalent pair for another because 86% of her English-Spanish equivalent pairs as shown in Table 1 are nominal expressions designating objects or persons that could easily be identified in the video recordings. The weekly video recordings with Manuela doing the same activities (playing with her toys and looking at books for the most part but also having her meals in the kitchen) in two language contexts provide the ideal situations to test that members of equivalent pairs are used to refer to the same objects. I chose at random 10 of the 57 crosslinguistic pairs from the list on Table 1 to double-check that they are equivalent. I found that Manuela did use the equivalent pairs with the same reference as I had already established when I reconstructed her lexicon by cross-referencing both video and diary records.

Table 1 List of equivalent pairs composed of ENG and SPA source words and the time interval between the appearance of its translation equivalent (the nine equivalent pairs produced in the first six months of speech are in bold)

Word	Age at which word appeared	Age at which equivalent appeared	Equivalent	Time interval in months:days
book	0;11.12	1;9.5	libro	9:22
bye	**0;11.17**	**0;11.25**	**tatai**	**0:8**
casa	1;2.20	1;7.9	house	4:20
té	1;2.20	1;7.22	tea	5:2
papá	**1;2.27**	**1;5.6**	**daddy**	**2:10**
pájaro	1;2.30	1;9.30	bird	7:0
más	**1;3.9**	**1;4.14**	**more**	**1:5**
mamá	**1;3.15**	**1;3.29**	**mummy**	**0:14**
down	**1;3.28**	**1;4.6**	**bajar**	**0:8**
zapato	**1;3.28**	**1;4.19**	**shoe**	**0:21**
duck	**1;3.29**	**1;4.1**	**pato**	**0:2**
teddy	1;4.3	1;8.18	osito	4:15
bucket	1;4.6	1;8.4	cubo	3:29
hand	**1;4.20**	**1;4.22**	**mano**	**0:2**
niño	1;4.21	1;8.9	boy	3:19
niña	1;4.21	1;8.9	girl	3:19
sapo	1;4.22	1;8.10	frog	3:19
apple	**1;4.24**	**1;5.4**	**manzana**	**0:11**
cama	1;4.27	1;7.5/1;9.30	bed/cot	2:9/5:3
juice	1;4.29	1;8.12	jugo	3:14
box	1;5.3	1;7.8	caja	2:5
abuelo	1;5.8	1;6.9	grandpa	1:1
agua	1:5.9	1;6.26	water	1:17
cabeza	1;5.13	1;8.1	head	2:19
media	1;5.22	1;9.2	sock	3 9
taza	1;5.25	1;6.15	cup	0:20
abuela	1;6.2	1;6.6	granny	0:4
ojo	1;6.5	1;7.16	eye	1:11
galleta	1;6.9	1;7.12	biscuit	1:3
baño	1;6.10	1;7.11/1;9.23	bath/bathroom	1:1/3:13
vaca	1;6.11	1;9.9	cow	2:27
monos	1;6.15	1;7.0	monkeys	0:16
barco	1;6.15	1;6.29	boat	0:14
silla	1;6.23	1;9.9	chair	2:15
naranja	1;6.27	1;9.16	orange	2:18
cepillo	1;6.28	1;7.10	brush	0:13
mesa	1;6.29	1;7.13	table	0:15
glove	1;6.29	1;9.11	guantes	2:11
si	1:7.2	1;9.16	yes	2:14
brick	1;7.2	1;8.21	ladrillo	1:19
spoon	1;7.3	1;8.4	cuchara	1:1
floor	1;7.4	1;7.29	piso	0:25
tapa	1;7.5	1;7.11/1;9.2	top/lid	0:6/1:26
light	1;7.5	1;8.4	lámpara	1:0
dos	1;7.8	1;10.6	two	2:29
tummy	1;7.8	1;8.20	panza	1:12
crema	1;7.12	1;7.26	cream	0:14
rabbit/bunny	1;7.14/1;7.21	1;8.18	conejo	1:4/0:28
cheese	1;7.16	1;7.29	queso	0:13
nappy	1;7.17	1;8.2	pañal	0:16
coffee	1;7.26	1;8.12	café	0:17
pingüino	1;8.3	1;8.4	penguin	0:1
caballo	1;8.4	1;8.4	horse	0:0
nieve	1;8.7	1;8.10	snow	0:3
cayó	1;8.12	1;9.5	fall	0:22
huevo	1;9.5	1;9.30	egg	0:25
tres	1;9.5	1;9.23	three	0:18

The last column of Table 1 shows the time interval between a word and its equivalent entering Manuela's lexicon in months and days (for example, 4:20 would indicate 4 months and 20 days). This was done to indicate how difficult it is to draw boundaries between the absence and the presence of crosslinguistic equivalents since the time interval for the formation of equivalent pairs fluctuates from one word to the next. For example, Manuela's very first word on Table 1, 'book', was not matched by its Spanish equivalent, *libro*, until 9 months and 22 days later while the second word she produced, 'bye', was matched within 8 days by its Spanish equivalent, *tatai* (the Spanish baby word for "good-bye" used by Manuela's family). The average interval for the appearance of the equivalent terms for all the words in the first column of Table 1 is 1 month and 24 days while the average interval for the formation of Manuela's first nine pairs of equivalents (shown in bold on Table 1) in her first six months of speech is only nineteen days. It is therefore very difficult to determine where the boundaries should be drawn if one insists that in the first stage of development, bilingual children should have no crosslinguistic equivalents and that in the second, they should have them. Clearly, Manuela produced equivalent pairs from the beginning of speech. This shows little support for the Contrast hypothesis that states that young children assume that every two words in their lexicons contrast in meaning.

CONCLUSION

Although Clark (1987: 14) states that bilingual children accept equivalent terms in their two languages before monolingual children accept synonymous terms within one language, it does not appear to happen only after 150 words (cf. Clark 1987: 13) in the bilingual's lexicon. Almost one-third of the first 150 words produced by Manuela was made up of translation equivalents that were synonymous in reference. Such results show that bilingual studies in general cannot be used as part of Clark's evidence to support the Principle of Contrast. Contrast is obviously not in operation when synonymous crosslinguistic terms are acquired in early infant bilingualism.

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