

New Paradigm for the Study of Simultaneous v. Sequential Bilingualism

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1. Introduction

Mastering multiple languages is a commonplace linguistic achievement for most of the world's population. Chomsky (in Mukherji et al. 2000) notes that "In most of human history and in most parts of the world today, children grow up speaking a variety of languages..." Clearly, multilingualism "is just a natural state of the human mind."

Notably, most of this language learning occurs in untutored, naturalistic settings and throughout the lifespan of an individual. The false sense of language homogeneity and monolingualism that is often heralded in the United States, at least in certain regional sections, is clearly a historical artifact. As Chomsky notes:

Even in the United States the idea that people speak one language is not true. Everyone grows up hearing many different languages. Sometimes they are called "dialects or stylistic variants or whatever" but they are really different languages. It is just that they are so close to each other that we don't bother calling them different languages (Chomsky, in Mukherji et al., 2000:19)

A conclusion is that every individual, by virtue of living within a community, is bilingual¹ in some sense. Further, this means that in the same sense there is essentially *universal* multilingualism in the world.

Despite the centrality of multilingualism to the human experience, however, questions persist concerning how learners construct new language grammars. More specifically, what is the nature of the mental organization of the "grammars" of individuals who know more than one language? Are there differences between adults and children along these dimensions? How can we understand the role of "experience" independent of adult/child age differences in terms of the construction and organization of multiple language grammars?

Early attempts to answer some of these questions have led to a focus on either the *organization* of the mental lexicon of bilinguals or to a focus on the nature of the linguistic *competence* of bilinguals. With respect to organization, early proposals have differentiated coordinate and compound bilinguals (Ervin & Osgood, 1954). Other proposals have included the *one system hypothesis* (Swain, 1972; Volterra & Taeschner, 1978) as well as the *differentiation hypothesis* (Padilla & Liebmann, 1975; Goodz, 1989; Genesee, 1989; de Houwer, 1994; Meisel, 1994). With respect to competence, another early perspective focused on the differences between *balanced* and *dominate* bilingualism (Lambert, 1955).

While each of these approaches contributed to our understanding of possible dimensions and measurements concerning language in the bilingual mind, many questions still persist. Research still pursues ways to understand whether there are essential differences between both the nature of the acquisition process and the ultimate organization of the grammars in the mind of an individual who has acquired two or more languages at the same time (simultaneous bilingualism) and that of an individual who has acquired one language and then subsequently acquires another (sequential bilingualism or second language acquisition).

¹ The term *bilingual* is used in this paper to refer more generally to "knowing" two **or more** languages.

Little research has probed the difference between *simultaneous* and *sequential* exposure to multiple languages. The difference is important because it sheds light on the role of experience in language development. Core questions appear in (1-4):

- (1) How does language A affect language B when a speaker acquires A and B *simultaneously*?
- (2) How does language A affect language B when a speaker acquires A and B *sequentially*?
- (3) In what ways do differing answers to (1) and (2), if they actually do diverge, shed light on the role of experience in language development?
- (4) Are the answers to (1)-(3) above different for children and adults?

We can schematize this as shown in Table 1 below:

Table 1: Results from bilingual and L2 studies currently suggest:

	Simultaneous	Sequential
Children	1. Differentiate grammars	2. (Uncertain whether this is possible since L1 may not be “final state” during childhood)
Adults	3. (Uncertain whether it is ever possible to know)	4. Cumulative; non-redundant (but possibly overlapping in some sense)

To date, most research exploring the possibilities in Table 1 has focused on L1 and L2 acquisition. In this paper, we aim to develop the picture in Table 1 by expanding the view to include third language (L3) acquisition. More specifically, we will focus on the acquisition of free and restrictive relative clauses in English as an L3 by adults and children who are L1 speakers of Kazakh and L2 speakers of Russian. In the case of both the adults and the children, acquisition of English is *sequential* relative to Kazakh. However, in the case of the adults, the L2 acquisition of Russian and English is *sequential*, while in the case of the children, the L2 acquisition of Russian and English is *simultaneous* or *near-simultaneous*. Table 2 summarizes this difference.

Table 2. Summary of L2 and L3 language sequence in the new study

	L1	L2	L3
Adults	Kazakh	Russian: <i>Sequential to L1</i>	English: <i>Sequential to L1 and Sequential to L2</i>
Children	Kazakh	Russian: <i>Sequential to L1</i>	English: <i>Sequential to L1 and Simultaneous to L2</i>

In sum, we study questions (1) and (2) above by considering the simultaneous or sequential influence of language A on language B when the two languages are an L2 and an L3. In particular, we test the hypothesis that the influence of A on B will be different when A and B are simultaneous than when A and B are sequential.

2. Background

2.1. L1 acquisition

The L1 acquisition of relative clauses in English has a long and well-documented history. Some of the early studies to which we make critical reference in this paper include Hamburger, 1980; Hamburger & Crain, 1982; and Goodluck & Tavakolian, 1982, among others. These studies have provided both natural speech samples as well as controlled experimental data.

Of particular importance to this paper is Flynn and Lust’s (1981) study of monolingual children acquiring English (3; 0 -7; 0 years). Using an elicited imitation method (Lust, Flynn and Chien 1987;

Lust, Flynn and Foley 1996), Flynn and Lust compared children's production of three relative clause types. Table 3 summarizes the design.

Table 3. L1 acquisition of English (Flynn and Lust 1981)

(a) Lexical head with semantic content	Big Bird pushes the balloon [which bumps Ernie]
(b) Lexical head with no semantic content	Ernie pushes the thing [which touches Big Bird]
(c) Free relative	Cookie Monster hits [what pushes Big Bird]

Results revealed that the **free relative clause** structures in (c) were significantly more productive than either of the lexically headed types in (a) and (c) both overall and in the youngest age groups.

2.2. L2 acquisition

The same three types of relative clause have been investigated in studies of L2 acquisition of English. Flynn (1983, 1987) tested Japanese and Spanish speakers acquiring English using an elicited imitation method. Each subject was at one of three levels of English proficiency as established by the Michigan test.

Japanese is a head-final language and therefore does not match English in head direction (head-initial, right-branching).

- (5) John-wa [Mary-ga kaita] hon-o yonda.
 John-theme Mary-nom wrote book-acc read
 'John read the book that Mary wrote' (Saito 1985)

For L1 Japanese/L2 English speakers, the free relative appears to be a developmental precursor to the lexically headed form, as in L1 acquisition of English.

Spanish, in contrast to Japanese, but like English, is a head-initial, right-branching language. For example, the relative clause 'that Maria wrote' *que María escribió* follows the head NP 'book' *libro*, as in (6).

- (6) Juan leyó el libro [que María escribió]
 Juan read the book that Maria wrote

In the acquisition of L2 English by Spanish speakers, the free relative is not a developmental precursor to the lexically headed forms. In this sense, L2 acquisition of English by Spanish speakers appears different from L1 acquisition of English and the L2 acquisition of English by Japanese speakers.

These earlier L1 and L2 results are summarized in Table 4.

Table 4. Summary of earlier L1 and L2 acquisition results

Target language	Group	Pattern
a. English as L1	Children	Free relative precedes lexically headed relative clause
b. English as L2	Adults, L1 Japanese (head-final)	Free relative precedes lexically headed relative clause
c. English as L2	Adult L1 Spanish (head-initial)	Free relative does NOT precede lexically headed relative clause

3. New study

3.1. Syntactic background

Kazakh is a Turkic language with primary SVO order and a head-final, left-branching structure, like Japanese. It does not match English in its word order or head direction. Thus, in Kazakh, relative clauses appear to the left of their heads. For example, in (7), the relative clause appears to the left of the head ‘girl.’ In Kazakh, as in (7), there are no overt wh-operators or overt complementizers in relative clauses. The boundary between the relative clause and the main clause is indicated in the verbal morphology—for example, in (7), by the participial form of the verb ‘drink,’

Lexically headed relative clause

- (7) [**Sut-Ø ish-ken**] **qyz-Ø** bölme-ge kir-di
 milk-ACC drink-PART girl-NOM room-dat enter-past
 ‘(A/the) girl who drank (the) milk entered (a/the) room.’

In contrast, Russian is a Slavic language, is a head-initial language that matches English in branching direction; but it does not match Kazakh. This is illustrated in (8); the relative clause appears to the right of the NP head, ‘professor.’

Lexically headed relative clause

- (8) **Professor** [**kotory priglasil lektora**] predstavil vracha
 professor-NOM who invite-PAST speaker-ACC introduce-PAST doctor-ACC
 ‘The professor who invited the speaker introduced the doctor.’

The L3 in our experiment, English, thus matches the L2 in branching direction, but not the L1. If the L3 learner is to draw on experience with a right-branching language in constructing relative clauses in English, this experience would have to come from Russian, and not from Kazakh.

3.2. Design, method and subjects

The design of the new study varied along three factors, as seen in Table 5. (More specific sentence structures are included in Appendix 1.)

Table 5: Relative clause types

Lexical head with semantic content	The owner questioned <i>the businessman</i> [who greeted the worker].
Lexical head with no semantic content	The janitor criticized <i>the person</i> [who called the lawyer].
Free relative	The professor introduced [<i>whoever</i> greeted the lawyer].

The design matched that of the L1 and L2 relative clause studies summarized above (e.g., see Table 3).

Using an elicited imitation task, we tested matching groups of adults (N=33) and children (N=30, ages 10;0-12;11). Subject information is summarized in Tables 6 and 7.

Table 6. Subject information, Adults.

Level	N	Mean ESL score*
Low	7	11
Mid	14	19
High	12	26
Total	33	20

*ESL scores are from the Michigan test

Table 7. Subject Information, Children.²

Level	N	Mean score (English)	Mean score (Russian)
Low	10	5.5	6.0
Mid	12	11	12.5
High	9	13.6	15
Total	31	10	11

3.3. Results

Responses were coded as “correct” if they matched the stimulus sentence, and as “incorrect” if they significantly differed from the stimulus form. Several minor changes were viewed as insignificant (e.g., changes in pronunciation that were not grammatically relevant). As illustrated in Figure 1, results revealed that for adults, lexically headed relative clauses were substantially more productive than they were for children. In contrast, as shown to the right in Figure 1, adult and child performance was more closely matched for free relatives.

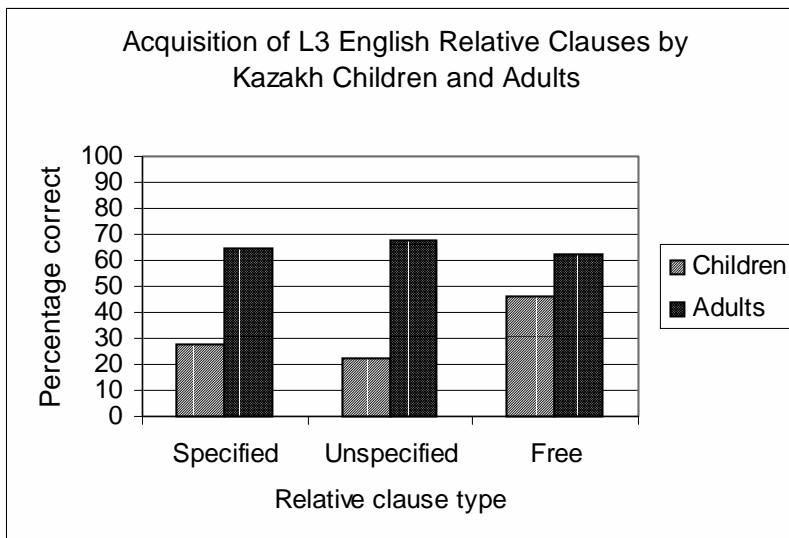


Figure 1 reveals that for adults, performance across the three relative clause types was closely matched, as it was for Spanish speakers acquiring L2 English. In contrast, for the children, the free relative was more productive than the lexically headed types, as was the case in L1 English and for Japanese speakers acquiring L2 English.

4. Discussion and conclusions

When the L2 and L3 are acquired *simultaneously* or *near-simultaneously*, as in the case of our child subjects, acquisition of relative clauses in L3 English resembles that of L1 English, or of L2 English by speakers with no right-branching language to draw on. This suggests that when the L2 is still “in progress,” its influence on L3 acquisition is not the same as it is when L2 and L3 are *sequential*. In some sense, the specific knowledge underlying language A appears to be more fully available to the acquisition of language B when A and B are *sequential*.

² In this study, participants demonstrated the same proficiency in both languages: there were ten beginners, twelve intermediates, and nine advanced students who demonstrated similar scores in both English and Russian on placement tests provided for the respective languages.

In contrast to this language-specific knowledge, the universal knowledge underlying the free relative appears to be fully available at all points in development. The free relative again emerges as developmentally primary. These results lend support to a growing view that the free relative serves as a developmental precursor to the construction of other relative forms when no relevant experience of constructing relative forms can be drawn upon.

Interestingly, both typologically and diachronically, the free relative seems to be a syntactic primitive with respect to other relative clause types. For example, diachronically, relative question words in free relatives precede question words in headed relatives (von Breman 1987). Typologically, there are languages with question words heading free relatives, but not other types of RCs (e.g., German, Japanese, or Literary Arabic). However, the converse does not hold (question words heading other types of relative clauses, but not free relatives) (von Breman 1987). We suggest that cross-linguistically, diachronically, and in acquisition, the free relative provides a first step toward subordination involving operator-variable binding within the embedded clause.

Appendix

Appendix Table 1. Experimental design for the Kazakh study

	<i>Head position: Subject</i>		<i>Head position: Object</i>	
Type	Gap position: Subject	Gap position: Object	Gap position: Subject	Gap position: Object
Lexically headed, specified	The lawyer who criticized the worker called the policeman.	The student who the professor introduced answered the man	The boss introduced the gentleman who questioned the lawyer	The woman instructed the lawyer who the policeman called.
Lexically headed, unspecified	The person who criticized the engineer greeted the man.	The person who the engineer answered criticized the man.	The boss introduced the person who instructed the lawyer.	The janitor questioned the person who the student greeted.
Free relative	Whoever entered the office introduced the professor.	Whoever the policeman greeted questioned the gentleman.	The professor introduced whoever greeted the lawyer.	The doctor answered whoever the policeman criticized.

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