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6 Multilingualism: New Perspectives on Syntactic Development

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Introduction

Linguistic diversity is a topic of increasing interest due not only to its manifold practical effects on politics and even on the economy, but also to its theoretical importance for the human sciences. According to the Ethnologue (www.ethnologue.com) there are 6,909 known living languages in the world. Just five states are listed as having only one indigenous living language and merely six countries appear with the lowest possible value, 0, for the Greenberg's diversity index (Greenberg 1956), indicating that any two persons in the country selected at random would have the same mother tongue (Lewis 2009, Table 7). 'Bilingualism – more generally, multilingualism – is a commonplace fact of life in the world today . . . two thirds of the world's children grow up in a bilingual environment (Bhatia and Ritchie 2004: 1).' (See also Grosjean 2004; Chomsky as cited in Mukherji, Patnaik, and Agnihotri 2000 among others.)

This state of affairs has far-reaching implications not only for society but for the individual as well. Therefore, it seems to be crucial to study multilingualism not only from the perspective of what its societal consequences are but research must also address the nature of the bi- or multilingual mind. The study of language as a unique human capacity helps to shed light on the way in which the human brain and cognition work; the study of the ability to use language deepens and enlightens our understanding of the nature of human cognitive processes. Hence understanding multilingualism provides an important window on one aspect of the human brain and cognition, viz. the mental processes involved in language learning and use.

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Key Issues in First- and Second-Language Acquisition

There have been outstanding attempts within the generative framework for linguistic theory to determine the character of the language faculty and its deployment in language learning. First-language (L1) acquisition studies have provided important insights into how the mind and language work. The pioneering work of Braine (1963), followed by that of Brown (1973), argued for the child developing its grammar using its own rules independent of those of an adult speaker, an assumption that paved the way to instituting L1 acquisition as a research field in its own right. L1 acquisition, however, encounters serious difficulties when attempts are made to explore the interaction of general cognitive and specifically linguistic processes in the learner's mind, because limitations deriving from general developmental (that is, maturational) deficits bear upon the language-learning process of children. In order to understand language and language learning as a crucial part of human cognitive processes, linguistic theory must accommodate the results provided by second-language (L2) acquisition studies, where L2 refers to a language acquired after infancy,¹ for here maturational issues play practically no role in the process of language development.

The issue of access to Universal Grammar in L2 acquisition

L2 acquisition research, then, provides an opportunity to examine language development independent of the influence of other developing cognitive processes, a necessary step in setting the basis for an adequate theory of language acquisition and competence (Epstein, Flynn, and Martohardjono 1996; Flynn, Martohardjono, and O'Neil 1998; Flynn and O'Neil 1988; Guasti 2002; Martohardjono 1993; Rizzi 2004). Accepting the Chomskyan theory of language acquisition, according to which it is the individual's language faculty which generates knowledge of language by responding to language input, Universal Grammar (UG) is defined as the theory of this language faculty and of 'the children's pre-linguistic initial state' (Chomsky 1981: 7). Consequently, L2 research had to meet the challenge of describing theoretically how L2 learners access UG in their language development of the L2. Some of the most representative theories are developed in Bley-Vroman (1989), Clahsen and Muysken (1986), Johnson (1988), Johnson and Newport (1989), Schwartz and Sprouse (1996), Hawkins and Chan (1997), Epstein *et al.* (1996), Flynn (1983 and subsequent work); see Eubank (1991) for arguments and counterarguments on these theories. For a detailed review on the different hypotheses about access to UG in L2 acquisition, see e.g., White (1989, 1998, 2003) and Cook and Newson (2007). For general treatments of the field of second language, see the chapters in Ritchie and Bhatia (1996, 2009).

Two principal models were developed to capture possible ways in which UG may be represented in L2 language acquisition. The first, the maturation model,

which was based on the maturation hypothesis (Borer and Wexler 1987; Felix 1984), claims that for L2 acquisition, UG is available to the L2 learner only in the form of a language-specific grammar viz., the L1, which is supposed to be the beginning basis, the initial state S_0 , for the development of the L2 grammar. Thus, under this hypothesis, new language knowledge is acquired through L1 alone via some yet to be defined transfer mechanism. The strong continuity model (Flynn and Lust 2002; also in Flynn, 2009 as 'constant model') is based on the strong continuity hypothesis as articulated for the study of L1 acquisition (Lust, 1999, 2006; Boser *et al.* 1992; for examples see Boser *et al.* 1995; Whitman, Lee, and Lust 1991). This model claims that it is not UG which changes over time but the theory-building capacity of the L2 learner. According to this model, UG remains distinct from the developing language-specific grammar and is continuously available for the L2 learner, as implicit principles that guide and constrain language acquisition. Learners with the help of their UG, the actual initial state (S_0), which triggers a language-specific grammar in view of new language input, map the language-specific grammar by dissociating and integrating grammatical components to construct their new language-specific grammars, a process referred to as 'grammatical mapping' (Flynn and Lust 2002; Flynn *et al.* 2005, also in Lust 2006).

Accepting the strong continuity model of UG does not mean denying obvious differences between the processes of L1 and L2 acquisition, but, rather, claiming that these differences are not due to a change in UG. Furthermore, new language-specific knowledge is not accessed only through L1, but benefits from the knowledge UG may provide. Given this model, the initial state is not absolute, rather 'the state of the mind/brain prior to experience with particular data and a particular new acquisition task' (Flynn and Lust 2002: 114) or in Chomsky's words:

the standard idealized model of language acquisition takes the initial state S_0 to be a function mapping experience (primary linguistic data, PLD) to a language. UG is concerned with the invariant principles of S_0 and the range of permissible variation (Chomsky 1995: 169).

Given this characterization of the S_0 , the testing of hypotheses about the initial state in L2 acquisition is crucial to the development of an understanding of the L2 learner's representation of grammar at the point of encountering the L2 input for the first time (White 1989, 1998, 2003; see related discussions on the nature of the L1 in the L2 grammar in Gass and Selinker 1983, 1992).

The issue of 'transfer' from L1 to L2

Another issue that has given way to fervent debates is the relationship of the two language grammars (L1 vs. L2) in the learner's mind, which raises the question of transfer between languages. The acquisition of Wh-structures may serve as illustration here. Consider the following English sentences (Martohardjono and Flynn 1995: 213):

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- (1) a What_i did Tom fix *e_i* [that the man had broken]?
 b *Who_i did Tom fix the door [that *e_i* had broken]?

English manifests overt Wh-movements (1a), although constrained, as exemplified in (1b); whereas, in Indonesian and Chinese there is no such overt Wh-movement (see Martohardjono and Flynn 1995 and references given therein). Thus, knowledge of Indonesian and Chinese does not provide an L2 learner of English from these two languages any knowledge about movement constraints in English. According to the claim that L2 learners transfer syntactic knowledge from their L1 and thus construct their L2 language-specific grammar, L1 Indonesian or Chinese learners of L2 English are expected not to be able to derive Wh-movement constraints for English as they do not apply them in their L1s. The prediction would be that they would not differentiate (1a) and (1b) above.

Before we evaluate how transfer is understood in the context of the aforementioned models, here we would like to give a short review of the evolution of this concept in second-language acquisition. 'Language transfer' is the term which has been most frequently used in L2 research, but there is an extensive literature using different terms to refer to some certain aspect of the same phenomenon. For illustration, Weinreich (1953) used the term 'interference' while Schachter and Rutherford (1979) and Ringbom (1987) employed 'cross-linguistic influence' to refer to the negative effects the native language has on L2 acquisition. Lado (1957), Selinker (1972), Kellerman (1983), and Odlin (1989), for example, use 'language transfer' in a wider, more neutral way to refer to both facilitative and negative influence of the L1, while Gass (1983, 1984) uses the same term to refer to the determinant role of L1 patterns in the course of L2 acquisition. Anderson's (1983) research focused on transfer between languages exhibiting typological similarity with regard to some particular, mainly morpho-syntactic feature and which is perceived by the learner as similar to his L1. The following *Transfer to somewhere* principle, therefore, considers language transfer as a conscious process, assuming a certain linguistic awareness on the part of the learner. Kellerman (1983) suggested first the term 'psychotypology' to refer to the learner's perception of the typological characterization of the new language. Kellerman's (1995) *Transfer to nowhere* principle shifts the general focus on transfer of syntactic structures to a completely different perspective in L2 research. The principle indicates that it is rather the conceptual organization of the L1, which is likely to be superposed onto L2 patterns (see also Jarvis 1997, 1998; Jarvis and Pavlenko 2008; Pavlenko 2000; Pavlenko and Jarvis 2002; and Jarvis 2007 and Odlin 2005 on detailed reviews of conceptual transfer). Jarvis (1997) offers an example of conceptual transfer. In his study he observed that Finnish-speaking learners of English tend to use the same verb to refer to a 'collision' regardless of whether it applies to humans or objects. Finnish does not differentiate between humans and objects with respect to the verb 'collision.' In contrast, Swedish speakers use two different verbs to distinguish these two types of 'collision.' Jarvis argues that when Swedish speakers learn English as an L2, they have difficulty when attempting to apply the singular concept of 'collision' to both humans and objects. He

concluded that the Swedish L2 learners conceptually categorize these two types as typologically different and attempt to transfer these concepts into their English interlanguage. This later move to conceptual transfer shifts the research focus from syntactic development (see detailed reviews on variables that affect cross-linguistic influence, e.g., Murphy 2003; Jarvis and Pavlenko 2008; Cook 2010; Rothman and Cabrelli Amaro 2010).

Returning to the two models of UG access in L2 acquisition, we would like to point out a fundamental difference in the predictions made by each with respect to syntactic transfer. Given the maturation model, it follows that adult L2 learners are guided by transfer from their L1, as UG has developed into the grammar of the L1, the initial state for L2 acquisition. In contrast, the strong continuity model hypothesizes that it is UG that guides the acquisition of an L2, as it does in L1 acquisition. Thus, at some level, both models predict some form of constraint by UG. In the maturation model it is only via the L1. It is not clear how this model predicts the development of the new target language (see extended discussion in Epstein *et al.* 1996). In the strong continuity model, UG in its entirety is available to the learner. Consequently, this model predicts that language learners do not 'transfer'; that is, they do not build the new grammar using the language-specific grammatical features of L1, but rather they construct the new grammar with the help of 'grammatical mapping,' i.e., they 'map from one primary structure to a more developed structure by dissociating modular grammatical components and integrating them in the "assembly" of new language-specific grammars' (Flynn *et al.* 2005: 2). All in all, the strong continuity model rejects transfer on the level of fundamental computational mechanisms which characterize the language faculty, as a result of understanding language learning not as a maturational, but rather a computational process. However, the strong continuity model does recognize the role of other languages known in terms of subsequent language development as will be discussed in more detail below.

Multilingual Acquisition

Yet, there is more to it. The manner in which a multilingual learner approaches subsequent language learning is widely accepted to be different from that of an L2 learner in certain respects,² for example, the L3 learner may rely on certain language-learning strategies picked up in the course of acquiring an L2. It seems empirically that the acquired knowledge of at least one L2 may well play a role in subsequent acquisition (see e.g., Cenoz, Hufeisen, and Jessner 2001; Hammarberg 2009; Leung 2009). Cook (1992) refers to the putatively qualitatively different linguistic competence of a multilingual learner as 'multi-competence.' There are ongoing fervent debates on multilingual acquisition and its relation to cross-linguistic influence, for the knowledge of an L2 (or various L2s) and with it the experience of having acquired a nonnative language as well as having developed language-learning strategies add to the complexity of issues such as access to UG and transfer from prior languages in the initial state of L3 acquisition.

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Numerous studies and volumes in recent years are dedicated to the exploration of how L1 and/or L2 bear upon the acquisition of subsequent language(s), i.e., multilingual acquisition (see e.g., Cenoz *et al.* 2001; De Angelis 2007; Gabrys-Barker 2006; Gibson, Hufeisen, and Libben 2001; Hammarberg 2009; Odlin, Alonso, and Alonso-Vázquez 2006; Odlin and Jarvis, 2004; Leung 2005, 2009; Ringbom 1987). For simplicity's sake we will use the term 'L3 acquisition' to refer to the acquisition process of any multilingual learner whether of a third language, a fourth language, etc.

Generative multilingual research may render answers that the study of L2 acquisition alone cannot. For example, L3 provides insights about the role of the L1 in subsequent language acquisition. Is there a privileged role for the L1? An answer to this question would inform debates concerning the availability of UG for next-language acquisition in general. More specifically, the study of L3 acquisition raises issues concerning the maturation model itself. What is available to the L3 learner in terms of UG – an L1 that has partially morphed into an L2? What would this mean? Clearly, the study of L3 acquisition has the potential to inform current debates concerning the role of UG in subsequent language acquisition as well as confronting claims made about subsequent language learning (see the discussion of recent models for multilingual acquisition below). Development of explanatorily adequate models of language need to account for L3 acquisition and in doing so need to delineate the nature of the initial state for all subsequent language learning.

Much research has been done to explore the role of previous lexical knowledge at the L3 initial state and has suggested that there might be some form of lexical influence from the L2 to the L3 (see e.g., Cenoz *et al.* 2001; Boot 2004; Dewaele 1998; Gibson *et al.* 2001; Hammarberg 2001; Williams and Hammarberg 1998), whereas there have been few such attempts in exploring the nature of prior syntactic knowledge. Nevertheless, the emerging research within the framework of generative morpho-syntax has inspired numerous empirical studies necessary for further exploration of how language learning occurs. In the following, we will introduce three of the most influential current models of multilingual acquisition: the L2 status factor; the typological primacy model; and the cumulative enhancement model for language acquisition. All of these models coincide in assuming that multilingual learners *a priori* have access to UG and that they process their L3 under altered conditions from that of their L2; that is, previously attained linguistic knowledge may act as some type of source for cross-linguistic transfer. The L2 status factor and typological primacy model aim to describe the initial state of L3 acquisition; they attempt to tease apart the intervening variables in order to determine the most likely source of syntactic transfer for L3 acquisition, whereas the cumulative enhancement model for language acquisition attempts to create the representation of language development in the mind of a multilingual learner and at the same time to inform us about the initial state for subsequent language learning.

In the following, we will briefly introduce the mentioned models in light of the research focus reviewed here. As its name suggests, the L2 status factor (L2SF)

(Bardel and Falk 2007, 2012, Falk and Bardel 2010; Williams and Hammarberg 1998) describes a general tendency on the part of L3 language learners to activate their last-learned language when acquiring an L3; that is, it proposes that, when it comes to recounting the variables that influence syntactic transfer, the last-learned language plays a primary role in determining the L3 initial state due to the higher degree of sociolinguistic and cognitive congruence surrounding the acquisition of L2, L3, . . . , L_n. These factors include age of onset, proficiency, exposure and use of the new target language as well as learning strategies, meta-linguistic knowledge, and so on. The model focuses on the learners' tendency to activate the last-learned language rather than their L1, especially in the initial state of L3 acquisition (but see Falk and Bardel, making the same claim for more advanced learners of L3), and predicts a general tendency to activate and transfer linguistic knowledge and/or elements of the last-learned language into subsequent L3 language acquisition. Bardel and Falk (2007) propose, furthermore, that the L2SF guides syntactic transfer as well; that is, they posit that syntactic development in subsequent acquisition is also affected by the specific syntactic features of the last-learned language (for a different view, see Håkansson, Pienemann and Sayehli 2002).

This claim is based on the experimental study of the placement of negation at the initial stage of nonnative acquisition of L3 Swedish and Dutch by two groups of learners with different linguistic backgrounds. Bardel and Falk start from the theoretical assumption argued for within the generative framework that the verb-second (V2) phenomenon in the Germanic languages (except for English) is due to the raising of the verb past negation (see Vikner and Schwartz 1996 for a review). Bardel and Falk assume then that if learners produce a 'verb + negator' string in their L3 Swedish or Dutch, it clearly indicates that verb raising is part of the grammar of the interlanguage of these learners. Subjects were placed into two groups according to the V2 property of the languages they knew prior to experiment, having either an L1_{+V2}/L2_{non-V2} or the opposite, an L1_{non-V2}/L2_{+V2}. Results showed that learners with L2_{+V2} outperformed learners with L1_{+V2} in producing post-verbal negation at their initial stage of L3_{+V2}, concluding that learners activated their L2, rather than relying on their L1, at the moment of facing the linguistic input from the new language. Furthermore, none of the L1_{+V2} learners seemed to transfer systematically from their L1, although L1 matched L3 in this syntactic aspect, which led the authors to claim that L1 for these learners was, in fact, inaccessible.

The predictive power of the L2SF was further tested in a subsequent study (Falk and Bardel 2010), which looked at the placement of object pronouns by intermediate L3 German learners collocated into two groups, a FrenchL1/EnglishL2 and an EnglishL1/FrenchL2 group. Results were similar to the previous study; significant differences were attested between the performances of the two groups in a way that the overall outcome confirmed the strong role of the L2 status factor. According to this, learners are driven by their cognition-based learning strategies acquired in the course of L2 acquisition, independent of any typological similarities among the involved languages.

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Consequently, the L2SF contradicts the typological primacy model (TPM) (Rothman 2010; Rothman and Cabrelli Amaro 2010), which does not reject L1 transfer. The model seeks to predict which set of language properties a multilingual learner is likely to transfer when learning a subsequent language L_n . Based on the theory of the (psycho)typologically motivated transfer (Kellerman 1983), the TPM suggests that the learner may choose, with the help of an internal parser, the typologically more similar system for multilingual transfer to facilitate the acquisition of L_n . The real typological proximity or the typological proximity as perceived by the learner is to guide the learner in selecting the system to be transferred to facilitate the acquisition of L_n . Two subject groups were tested on their interpretation of noun–adjective order in romance determiner phrases (DPs) at an intermediate level of L3: ItalianL1/EnglishL2 learners of L3 Spanish and EnglishL1/SpanishL2 learners of L3 Brazilian Portuguese. Romance adjectival constructions involve the raising of the head noun of a noun phrase (NP) to a position before an adjective, unlike English where the noun remains in its underlying position after the adjective; therefore, the interpretation of adjectival constructions can be regarded as an indicator of the underlying mental representations of the syntactic features involved in raising (or not raising) the head noun to the position before the adjective. Results indicated that all learners had an almost target-like knowledge of these constructions, both syntactic and semantic; none of the groups, nor any of the individual subjects, differed from the others significantly in their tacit knowledge of noun raising in romance. The experiment in its attempt to tease apart the variables that play the most crucial roles in syntactic transfer disconfirms the claim that L2 has a leading role as proposed by the L2SF and concludes by claiming that the most likely source of selective transfer in multilingual acquisition is (psycho)typological proximity. In a subsequent experiment (see Rothman and Cabrelli Amaro 2010), which tested the TPM against the cumulative enhancement model, this conclusion was reiterated.

To sum up, the L2SF and the TPM models agree that it is precisely the already existing grammars in the mind of the learner at the beginning of the acquisition process that make L3 language learning essentially and qualitatively different from L1 or L2 acquisition. Hence, the fundamental question these two models seek to investigate is the role of previously attained language-specific morpho-syntactic knowledge at the initial state of L3³ in attempts to tease apart the variables that guide perceived syntactic transfer. Without doubt the variables of the L2 status factor or typological affinity may prove to be crucial for learning, as they provide a legitimate basis for strategies the multilingual learner has access to and may apply in order to proceed. Nevertheless, the assumption that reduces the S_0 of the multilingual learner when facing new input of a specific language to the result of one or more intervening variables does not provide an explanatorily adequate language acquisition theory as it does not attempt to explain the manner in which UG maps this new input into linguistic knowledge of L3. Furthermore, still left unexplained is the degree to which such variables can be part of or relate to the language faculty. In short, in order to provide an explanatorily adequate

theory of language acquisition – that is, the theory of how multilingual language development is constrained by UG – we need to explore the way multilingual learners build the grammar of a specific target language, and filter out universal tendencies that may shed light on how UG constrains development of a language-specific grammar.

A recently emerging effort to explain multiple-language acquisition in an attempt to answer the requirement of explanatory adequacy is the cumulative enhancement model (CEM) (see Flynn, Foley, and Vinnitskaya 2004). Its primary focus is to investigate the structural development of a specific L_n language. The fundamental prediction the model makes is that language learning is cumulative, and it excludes redundancy in linguistic representation, a claim that contradicts Hufeisen (1998) (see also Gibson *et al.* 2001), according to whom, despite the richer basis of experience, there is no trace of novel conditions for S_0 beyond trilingualism. In Hammarberg's words 'Hufeisen's claim still relies on reasoning and the absence of direct counter-evidence' (Hammarberg 2010: 96); hence, we believe that the results reported in this chapter may provide direct empirical counter-evidence against such a claim. Here we attempt to show that the accumulated linguistic knowledge an L3 learner has enhances subsequent language learning; therefore, we undertake to explore what the linguistic nature of this enhancement might be. As a corollary we hope to provide insights into the S_0 with which the multilingual learner starts off to construct the L3 grammar.

Theoretical Background

According to the theoretical claim made by Chomsky (2000), there is linguistic development in the process of constructing language-specific grammars by learners. Consistent with the current view of language proposed within the generative framework of linguistics, language acquisition necessarily involves the correct selection and development of formal features on functional heads, which then guide the mapping of language-specific constituents and/or clausal architecture.

This section builds upon a series of language development studies focusing on the acquisition of relative clauses in English. These studies seek to elucidate language development by contemplating the development of language-specific properties of the complementizer phrase (CP). It is assumed that the interpretable vs. non-interpretable features of the CP are responsible for the head–complement relationship among syntactic elements on the sentence level – specifically, the order of head and complement within CP in a given language. According to this position, specific features of the CP, generated by UG, determine the directionality of embedding (head directionality or branching) and the constituent word order within the subordinate clause (see Flynn and Foley 2004; Lust 2006). Therefore, we may talk about right- or left-branching languages with either subject–verb–object (SVO) or subject–object–verb (SOV) word order in the embedded clause.

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The complementizer phrase (CP) setup

Experience shows that head directionality may overlap in certain languages, like English, Spanish or Russian, which are strictly head-initial languages in the sense that they not only embed the relative clause after the relativized NP (right-branching) but also exhibit an SVO constituent word order within the relative clause. The CP feature setup is independent of whether the gap within the relative clause is in subject or in object position. The examples given below in (2) show the full range of combinations of the function of the head NP in the matrix clause and the function of the gap in relative clauses in English, in (2a) the head NP is the subject in the matrix clause, in (2b) the head NP is the object in the matrix clause; in the (i) examples the gap in the relative clause is in the subject position, and in the (ii) examples it is in the object position. Examples (3) show the schematic representation of subject-gap and object-gap relative clauses in English.

- (2) Strictly head-initial languages (right-branching and SVO – e.g., English) – examples:
- a Subject-head (*the boy*) in matrix clause
 - i. Subject-gap in relative clause (referred to as an ‘SS’ or ‘subject–subject relative clause’):
*The boy_i [_{CP} *who_i [_{e_i/subject} found the man]] saw the girl**
 - ii. Object-gap in relative clause (an SO relative):
*The boy_i [_{CP} *who_i [_{the man found e_i/object}]] saw the girl**
 - b Object-head (*the boy*) in matrix clause
 - i. Subject-gap in relative clause (OS relative):
*The girl saw the boy_i [_{CP} *who_i [_{e_i/subject} found the man]]**
 - iii. Object-gap in relative clause (OO relative):
*The girl saw the boy_i [_{CP} *who_i [_{the man found e_i/object}]]**
- (3) Strictly head-initial languages – general schemas
- a Subject-gap in relative clause (SS or OS)
 Head NP_{*i*/subject/object} [_{CP} *wh*-phrase_{*i*} [_{*e_i/subject*} V NP_{*object*}]]
 - b Object-gap in relative clause (SO or OO)
 Head NP_{*i*/subject/object} [_{CP} *wh*-phrase_{*i*} [NP_{*subject*} V *e_i/object*]]

By contrast, Japanese and Kazakh are left-branching (head-final) languages with an SOV constituent word order in the relative clause. The example in (4a) shows an object-gap relative clause (Saito 1985), the schematic representation of such relative clauses in Japanese is given in (4b).

- (4) Strictly head-final languages (left-branching and SOV – e.g., Japanese) – Object-gap relative clauses.
- a Example (an OO relative)
*John-wa [[_{CP} *Mary-ga*_{subject} *e_i/object* *kaita*] [_{Head NP} *hon_i-o*]] yonda*
 John-topic Mary-nom wrote book-acc read
 ‘John read the book that Mary wrote’

- b Schema (SO or OO)
 [CP [NP_{subject} e_i /object V]] Head NP_{i/subject/object}

Background Studies

Design

Of particular importance to this section are Flynn's (1983, 1987) studies of adult L2 and Flynn *et al.*'s (2004) study of L3 acquisition of English. The L2 studies investigated adult L1 Japanese and L1 Spanish speakers learning of English and the L3 study investigated KazakhL1/RussianL2 speakers learning L3 English. All of these studies used the same test sentences – an adaptation of the original study of Flynn and Lust (1980) of monolingual children acquiring English – and employed the same procedure, an elicited imitation task.

Results of these studies revealed that in order to examine how the CP develops in L2 acquisition, it is necessary to test learners on their handling of free relatives, because free relatives appeared to be developmental precursors to headed relatives in the process of building a full-fledged, language-specific CP architecture (Flynn *et al.*; Flynn, Vinnitskaya, and Foley 2008). Consequently, the homogeneous groups were tested on lexically headed and headless relatives, and the lexically headed relatives were further divided into relative clauses with specified vs. unspecified heads (i.e., a lexical NP head vs. *person*).⁴ Learners were given an elicited imitation task, the design varied along three factors. The stimulus sentences involved the relativization of a noun phrase object or subject; within the subordinate clause, the gap was either in subject or in object position. These variations were extended to three types of relative clause structures that were varied in terms of the semantic and syntactic status of the relativized head NP – lexical head NP, *person* as head NP, and no head (free relative) (see Table 6.1).

Furthermore, a proficiency test was administered to the participants prior to the experiment in order to allocate them into three proficiency levels in English (low, mid, and high), as established by the Michigan test.

Results

Table 6.2 provides a simplified summary of the results of the above-mentioned studies.

Results of these studies indicated that the L1 Japanese learners of L2 English (study #2 in Table 6.2), like the English monolingual children (study #1 in Table 6.2), scored significantly higher on free relatives than on any of the lexically headed relative types, whereas the Spanish L1 group (study #3 in Table 6.2) did not do significantly better on any of the three types of relatives in their L2 acquisition of English, despite having been equated with the Japanese L1 speakers at all levels of English competence. It seems that the Spanish L1 learners could somehow draw upon their knowledge of CP structure, for Spanish and English match in terms of both CP properties (contrary to Japanese vs. English), and use it in

Table 6.1 Stimulus sentences used in study

<i>Relative type</i>	<i>Head position: Subject</i>		<i>Head position: Object</i>	
	<i>Gap position: Subject (SS)</i>	<i>Gap position: Object (SO)</i>	<i>Gap position: Subject (OS)</i>	<i>Gap position: Object (OO)</i>
<i>Lexically headed, specified</i>	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.
<i>Lexically headed, unspecified</i>	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.
<i>Free</i>	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.

Source: Flynn, Foley, and Vinnitskaya (2004). Berkes and Flynn (in press).



Table 6.2 General summary of results of relative clause studies for L1, L2, and L3 English

<i>Target language</i>	<i>Group</i>	<i>Pattern</i>	<i>Abbr. name of study</i>
1. English as L1	Children	Free relative precedes lexically headed relative clause	EnL1
2. English as L2	Adults, L1 Japanese (head-final)	Free relative precedes lexically headed relative clause	JaL1/EnL2
3. English as L2	Adults, L1 Spanish (head-initial)	Free relative does NOT precede lexically headed relative clause	SpaL1/EnL2
4. English as L3	Adults, L1 Kazakh (head-final) and L2 Russian (head-initial)	Free relative does NOT precede lexically headed relative clause	KazL1/RusL2/EnL3

Sources: Flynn and Lust (1981), Flynn (1983, 1987, 1989); Flynn (2009).

subsequent learning. This observation led the authors to conclude that the free relative clause structure appears to be a developmental precursor to the lexically headed form.

The primacy of free relatives in CP development of the target language was further tested by the mentioned L3 study, which investigated an adult group of KazL1/RuL2 learners of L3 English (study #4 in Table 6.2). Kazakh is a head-final language with an SOV constituent word order within the relative clause, like Japanese (see (4)). The difference between study #2 and this one was that these learners learned Russian – which is a head-initial language with primary SVO order in relative clauses so that it matches the English configuration represented in ((2)–(3)) – as L2 first and subsequently English as L3. Results of this study indicated that the learners' development of CP structures in the target language patterned with that of the SpaL1/EnL2 rather than the JaL1/EnL2 group; in other words, the Kazakh L1 adult learners, with the help of their experience in acquiring L2 Russian, had developed a target-like CP structure upon which they could draw. Flynn *et al.* (2004) concluded, on the one hand, that the universal knowledge underlying the free relative seems to be fully available for the learner and, thus, acts as a developmental precursor in the acquisition of English, as was to be observed in the case of the JaL1/EnL2 group. On the other hand, prior CP development appears to influence the development of target-specific CP structure, as in the case of the KazL1/RuL2/EnL3 group or the Spanish L1 learners of L2

English, who had already instantiated the CP setup for English through the acquisition of L2 Russian and their own L1, respectively.

Summarizing the main findings so far, data seem to support the theoretical claim, according to which in L1, L2, L3 acquisition of relative clauses, there appears to be linguistic development, a process by which the learner constructs a specific language grammar, i.e., a theory of the specific language. Accepting the assumption that language learning is computational and that it is constrained by UG in the course of acquisition, the learner's linguistic development consists of the learner trying to map from one primary structure to another more developed structure by dissociating modular grammatical components and integrating them in the 'assembly' of new language-specific grammars (Flynn *et al.* 2005; see also Foley 1996).

Results seem to indicate that in L1, L2, L3 acquisition of English restrictive relative clauses development of the 'headless' relative is developmentally primary to that of the lexically headed relative clause, i.e., free relatives seem to precede the development of full-fledged CP structure. In contrast to the language-specific knowledge, the universal underlying the free relative appears to be fully available at all points in development and it seems that this knowledge is precisely what is needed to enable the acquisition process for lexically headed relatives. Furthermore, results from the L2 studies suggest that at least the directionality of the CP (branching) is critical for this development.

The L3 study of Flynn *et al.* (2004) concluded with the postulation of the CEM for language acquisition. This model hypothesizes that language learning is cumulative, i.e., all previously known languages are available to the learner to constructively enhance subsequent language learning.⁵ According to the CEM any prior language can be strategically drawn upon in subsequent acquisition and may enhance the acquisition of further languages. Results of the L3 study investigating the development of language-specific CP features support the validity of the claims of the CEM in the following manner (5):

- (5) a Development of the CP structures in a prior language or languages determines the course of future language-specific development.
- b Having integrated language-specific CP features with universal knowledge of CP in earlier language acquisition, the learner can draw upon that developmental process or template created by this earlier developmental experience in later acquisition.

More informally stated, the model predicts that the architecture of previously developed CP structures may be available to the learners in terms of enhancing subsequent language development. Consequently, it appears that with respect to the CP, the mind does not redundantly represent CP clausal structure.

Berkes and Flynn (in press)

In this section we continue with describing the results of an additional study using the same test design with the objective of testing the predictive strength of the

CEM and to refine further the claims supporting this model. What we were principally interested in was the linguistic nature of the proposed CP development, thus we had selected German L1 learners of L2 English (GeL1/EnL2) and compared their production with that of a group of Hungarian L1 with L2 German learners of L3 English (HuL1/GeL2/EnL3).

Matrix clauses in German are head-initial (right-branching), like in English (and in Hungarian; see (2)–(3)), but with regard to CP-relevant word order (that is, in embedded clauses), it exhibits a general SOV word order, as do most of the head-final (left-branching) languages, like Japanese; therefore, in this aspect, it matches neither English nor Hungarian. A relative sentence contains a relative pronoun, which introduces the relative clause and which is marked for case, gender, and person, as we can observe in the example in (6), where the relative pronoun *der* refers to a singular masculine subject:

- (6) Der Anwalt, *der* den Arbeiter kritisierte, rief den Polizisten
 The lawyer *rel.pr.* the-Ac worker criticized called the-Ac policeman
 ‘The lawyer who criticized the worker called the policeman’

Hungarian is a Uralic language belonging to the Ugric group; it is agglutinative with a complex conjugation system. As mentioned before, in Hungarian, relative clauses appear to the right of the relativized head; hence, it is a head-initial (right-branching) language with a primary SVO word order. The stimulus sentences we are concerned about in our experiment include objects modified by an article, in which case the SVO word order is regarded to be the default (MacWhinney and Pléh 1988; see also É. Kiss, 1981), like English and in contrast to German. The Hungarian relative pronoun is marked for case and person, so the sentence in (6) translates as (7) into this language.

- (7) Az ügyvéd, *aki* kritizálta a munkást, hívta a rendőrt
 The lawyer *rel.pr.* criticized the worker-Ac called the policeman-Ac

We must add here, that although Hungarian manifests an English-like CP structure in restrictive relative clauses, this language is considered to be organized around the concept of topic and focus rather than the concept of subject (Li 1976). There is an ongoing debate whether the underlying structure of the Hungarian verb phrase (VP) is hierarchical (e.g. Bródy 1995; Marác 1989) or flat (e.g. É. Kiss 2002).⁶ Facts suggest that there is relative freedom in terms of constituent word order in the postverbal domain of the Hungarian sentence which seems to be related to the extractability of the verb into a functional head (É. Kiss 2008).

Given that German manifests the same head directionality as English (head-initial) in matrix clauses but differs with regard to constituent word order within subordinate clauses by exhibiting a standard SOV order, the comparison between the two studies provided the unique possibility of teasing apart the influence of the two constitutional features of the CP, head directionality and constituent word order relevant to the CP, on the development of target language syntax. A

careful analysis of the produced developmental patterns by the two groups learning English, where the L3 group had previously acquired German (the L1 of the L2 study group), promised to shed light on the nature of the acquisition process involving complex structures. The comparison between the L2 and L3 studies offered an additional chance to investigate the effect of enhancement on development as a result of multiple language acquisition experience.

Furthermore, the design of this study allowed us to investigate the role of the last-learned language on the acquisition of language-specific syntactic knowledge. Here we refer back to the Flynn *et al.* (2004) study, which had strongly suggested that the L1 does not have a privileged role in L3 development on the level of complex sentence construction. KazL1/RuL2 learners of English L3 manifested a clearly distinct developmental pattern in their acquisition of English from that of the Japanese L1 speakers, even though the CP properties of Kazakh and Japanese match, i.e., they are both head-final languages with SOV constituent word order within the relative clause. Therefore, we expected that the language combination chosen for this study, where L1 and L3 match completely but not L2, could shed light on what, if any, effect the L2 has on subsequent language development. Additionally, we carried out error analyses as part of this study with the objective to reveal whether the errors made by the two groups at the matched proficiency levels exhibit traces of syntactic transfer from L2 to L3.

In order to facilitate further reference to the feature arrangement relevant to CP in the languages involved in this series of experiments (see Table 6.2), Table 6.3 offers a simplified overview including German and Hungarian as well.

The statistical analysis of the results of the L2 study group revealed significant differences between correct production of lexically headed and free relatives at the low and mid levels of their acquisition of L2 English. The developmental patterns at the early and intermediate stages of acquisition seemed to resemble those

Table 6.3 CP directionality and word order in subordinate clauses in tested languages

<i>Relevant study</i>	<i>Language involved</i>	<i>Head-initial (RB)</i>	<i>Head-final (LB)</i>	<i>SVO</i>	<i>SOV</i>
#1 English L1	English	✓		✓	
#2 JaL1/EnL2	Japanese		✓		✓
#3 SpaL1/EnL2	Spanish	✓		✓	
#4 KazL1/RuL1 EnL3	Kazakh Russian	✓	✓	✓	✓
#5 GeL1/EnL2	German	✓			✓
#6 HuL1/GeL2/EnL3	Hungarian	✓		✓	

Source: Berkes and Flynn (in press).

isolated for the L2 acquisition of English by Japanese speakers and for the L1 acquisition of English by children, rather than the one reported for the SpaL1/EnL2 and the KazL1/RuL2/EnL3 studies. This result suggested that free relatives act as developmental precursors to the lexically headed forms for the L1 German learners of L2 English as well, for the data revealed a free relative primacy at low and intermediate levels of English proficiency. We concluded, then, that we had found evidence to support the claim that the feature responsible for the constituent word order within subordinate clauses seems to play a role in the process by which the learner constructs subsequent language-specific grammars, i.e., it may suggest that due to CP-related word order differences they have to figure out the new values for the CP, which does not seem to be immediately evident, just like in the case of the JaL1/EnL2 learners.

L1 speakers of Hungarian acquiring English as an L3, on the contrary, encountered a language that involves a similar type of integration of universal and language-specific properties concerning CP head directionality to their L1. Our prediction in support of the CEM were thoroughly fulfilled as the statistical analysis of the results indicated that HuL1/GeL2 learners of L3 English did not need to fall back on the primary use of free relatives in order to build up a target-like CP, since this group showed no evidence that they found the imitation of free relatives easier than that of the headed ones. These results matched those produced by the KazL1/RuL2/EnL3 group (Flynn *et al.* 2004).

These findings prove to be relevant to our research on the role of the last-learned language in subsequent language acquisition as well. The different developmental patterns exhibited by the L2 and the L3 studies provide one of the strongest pieces of evidence for rejecting an astructural transfer of the last-learned language into subsequent acquisition. If the syntactic setup of the last learned L2 German was what L1 Hungarian learners transfer into their L3 English, we would have expected to find almost identical developmental patterns. The lack of negative transfer from L2 to L3 was also corroborated by the error analyses.

Concerning enhancement, the L3 group's exceptionally good performance was also attested by the fact that their production at the high level was significantly better than the comparable results of the GeL1/EnL2 group.

Research Focus

Along these lines we have come to show that the CEM may serve as a valid model for language acquisition, as it genuinely reflects the way that language-specific CP develops within the constraints of UG. Learners at comparable proficiency levels (L2 study vs. L3 study) seem to manifest distinct levels of CP knowledge. So, the question that is still to be explored is whether there is any connection between enriched CP knowledge and ease of subsequent language learning. Multilingual individuals can be frequently heard saying that language learning 'gets easier' the more languages one knows.⁷ But what is the linguistic explanation for this, i.e., what is the linguistic nature of this enhancement? Can it be that the

representation of the various CP feature-setups in the mind triggers some 'multilingual function' that enhances language-learning capacity, i.e. they show how to draw upon this knowledge in the course of subsequent language acquisition? Or is it rather, that in the course of multiple language-learning experience the learner unconsciously acquires a boosted skill to figure out CP options, which has an impact on learning strategies, and it ultimately produces the effect of enhancement? These are the questions we turn to explore in the following section of this chapter.

Enhancement Study

To explore this intriguing question was what motivated our study to compare the production data of two groups of learners of English with Hungarian L1, but one of the groups had learned German as L2 before acquiring L3 English. We have chosen these language combinations to investigate the linguistic nature of the 'enhancement effect' in the course of multiple language acquisition predicted by the CEM. Recall that the CEM was based on studies that investigated the production of groups with language combinations which provided them with the possibility to draw upon their knowledge acquired in the course of earlier CP development, hence the claim that CP does not seem to be represented redundantly in the mind of a speaker. KazL1/RuL2 and HuL1/GeL2 learners of L3 English did not need to fall back onto starting out to construct the language-specific CP architecture with the help of the developmentally primary free relatives, since they had already developed an English-like CP architecture through their previous experience in language acquisition (Russian and Hungarian, respectively). This new study, however, compares production data of groups where the only difference is an additional L2 German in case of the L3 study group, but this L2 since it does not match the L3 with respect to CP architecture – does not contribute to subsequent language acquisition as a direct source of knowledge with respect to CP architecture. This means that, in this regard, the L3 study group has no advantage over the L2 group. Furthermore, we made sure to statistically equate the two groups on proficiency.

Predictions

This design allows us to focus on our research question, that is, what is the nature of the enhancement the CEM predicts provided language proficiency is controlled? Taking the previously enumerated findings into account, we have generated the following predictions:

- (8) If there is no apparent difference between the production of the L2 and the L3 groups, we would find support for a straightforward application of the CEM. According to this model, Hungarian L1 learners of L2 and L3 English (the L2 and the L3 study, respectively) may draw upon their knowl-

edge of full-fledged CP, because Hungarian seems to manifest the same CP properties in restrictive relative constructions as English.

- (9) If the L2 study group clearly performs better than the L3 study group, we would find indices of negative transfer in syntactical development from L2 to L3, since in the L3 study L1 matches L3 but differs from L2 with regard to one of the CP-relevant features (word order within the subordinate clause is SOV in German, as opposed to the Hungarian/English SVO order).
- (10) If the performance of the L3 study group on relative clauses is undeniably better than that of the L2 group, we would find support for the CEM in a radically new way. Results would indicate that enhancement takes place in the learners' syntactical knowledge due to multilingual experience.

Design and subjects' data

The design of our L2 and our L3 studies matched the ones reported above (see also Berkes and Flynn in press; Flynn 1983, 1987, 1989; Flynn *et al.* 2004; and Flynn and Lust 1980). Using an elicited imitation task, we tested two groups of young adults on their production of three types of relatives. Thirty-six Hungarian learners of L2 English and 36 Hungarian learners (with L2 German) of L3 English took part in the experiment. Members of both groups were mainly high school students preparing to enter university or attended university at the time of testing. They had also received 2 to 10 years of formal instruction in English.

The L3 group had been exposed to German for at least 10 years. All of the subjects declared themselves nonnative speakers of German, although their exposure to German in school was very intensive. These students exhibited an advanced competency in this language, which was also tested independently with the help of an online test (www.testpodium.com). Those who did not score high enough to be on a C2 level (the 'Mastery' level of the European Language Portfolio, the highest level of language competence in a certain language, according to common criteria accepted throughout Europe) were excluded from the study prior to the experiment, because our aim was to see to what extent fully constructed, language-specific CP structures influence the development of subsequent learning.

A proficiency test was administered to the participants prior to the experiment in order to allocate them into three proficiency levels in English (low, mid, and high), as established by the standardized Michigan test. Subject information is summarized in Table 6.4.

We carried out an ANCOVA statistical analysis on the data, a three-way mixed design $2 \times 3 \times 3$, with study (L2 and L3 study) and level (low, mid, high) as between-subjects factors and sentence type (specified headed, unspecified headed, free) as a within-subjects factor, using proficiency as a covariate to statistically equate the two groups on proficiency. The nonsignificant value for the two-way study*level interaction ($p = .555$) suggests that the proficiency effect was statistically equivalent for the two language groups. Moreover, the three-way study*level*type of relative interaction ($p = .537$) gave a nonsignificant value, which suggests that the

Table 6.4 Subject information

Level	L2 Study: HuL1/EnL2		L3 Study: HuL1/GeL2/EnL3	
	Number of learners	Mean ESL score	Number of learners	Mean ESL score
Low	12	18.8	9	19.8
Mid	15	27.8	13	32.0
High	9	40.8	14	42.4

Table 6.5 HuL1/EnL2 – Mean number of correct responses on three types of relatives by level (max. value = 8)

Level	Specified	Unspecified	Free
Low	.3333	.3333	.8333
Mid	1.7333	1.6000	3.1333
High	3.6667	3.3333	5.6667
Total	1.7500	1.6111	3.0000

Source: Berkes and Flynn (in press).

effect of proficiency is not significantly different across levels of the two studies and sentence type.

Results

L2 Study: Hungarian L1/English L2 group Participants were tested on three types of relative clauses (lexically headed and specified, lexically-headed and unspecified, and free relatives); each type varied according to the grammatical function of the relativized head and its gap in the relative clause (SS, SO, OS, OO – see Table 6.1). The mean number of correct responses for the three types of relatives is presented in Table 6.5 (two measures were taken from all 3*4 sentences; max. value is 8).

A three-way analysis of variance was carried out on the data with level as a between-subjects factor (low, mid, and high), and within-subjects repeated measures on type of relative clause (specified headed, unspecified headed, and free relatives). Type of relative proved to be a significant main effect ($F_{2,66} = 17.646$, $p < .001$). Figure 6.1 shows the production data broken down into the three levels of English competency.

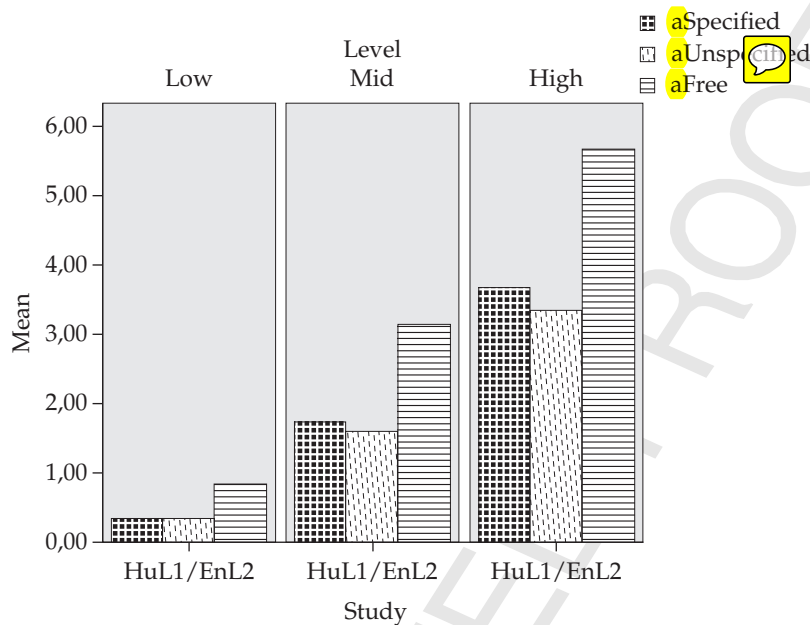


Figure 6.1 HuL1/EnL2 group: Mean of correct production according to level and relative type

Table 6.6 HuL1/GeL2/EnL3: Mean number of correct responses on three types of relatives by level (max. value = 8)

Level	Specified	Unspecified	Free
Low	1.3333	.7778	1.3333
Mid	4.2308	3.9231	4.0000
High	5.6429	5.9286	6.2143
Total	4.0556	3.9167	4.1944

Source: Berkes and Flynn (in press).

Pairwise comparisons revealed that the highly significant within-subjects effect is due to the successful imitation of free relative sentences.

L3 Study: Hungarian L1/German L2/English L3 group Table 6.6 presents the mean number of correct responses for the three types of relatives produced by the L3 group.

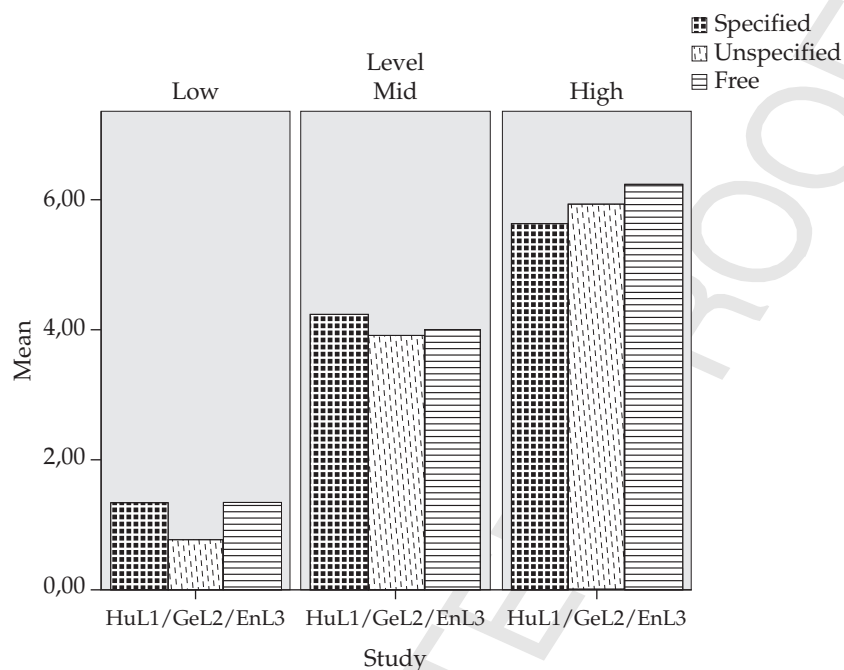


Figure 6.2 HuL1/GeL2/EnL3 group: Mean of correct production according to level and relative type

Even a casual look at Table 6.6 shows that there is only a very modest difference among the three relative types. Nevertheless, as in the case of the L2 group, we carried out a three-way analysis of variance on the data with level as a between-subjects factor (low, mid, and high), and within-subjects repeated measures on type of relative clause (specified headed, unspecified headed, and free relatives). We did not find a significant effect on sentence type ($F_{2,66} = 0.653$, $p = .524$), nor did pairwise comparisons among types of relative clauses give significant p values. Figure 6.2 shows the production data broken down into the three levels of English competency.

Additionally, a three-way analysis of variance was carried out on the data produced by the two groups to test the enhancement factor related to our predictions. We included study (L2 and L3) and level (low, mid, and high) as between-subjects factors, and within-subjects repeated measures on type of relative clause, similar to the previous analyses.

Results show that the type of relative clause had a significant main effect by itself and produced a very strong interaction with study ($F_{2,132} = 6.248$, $p = .003$). Moreover, the test of between-subjects effects gave a significant value for study ($F_{1,66} = 14.608$, $p < .001$) and level, but this was to be expected, because production

Table 6.7 Compared correct production on types of relatives by L2 and L3 learners: Study effect overall and according to levels

Level	F	p
Low	$F_{(1,19)} = 3.206$	.089
Mid	$F_{(1,26)} = 25.028$	.016
High	$F_{(1,21)} = 7.172$	.014
Overall	$F_{(1,19)} = 14.608$	.000

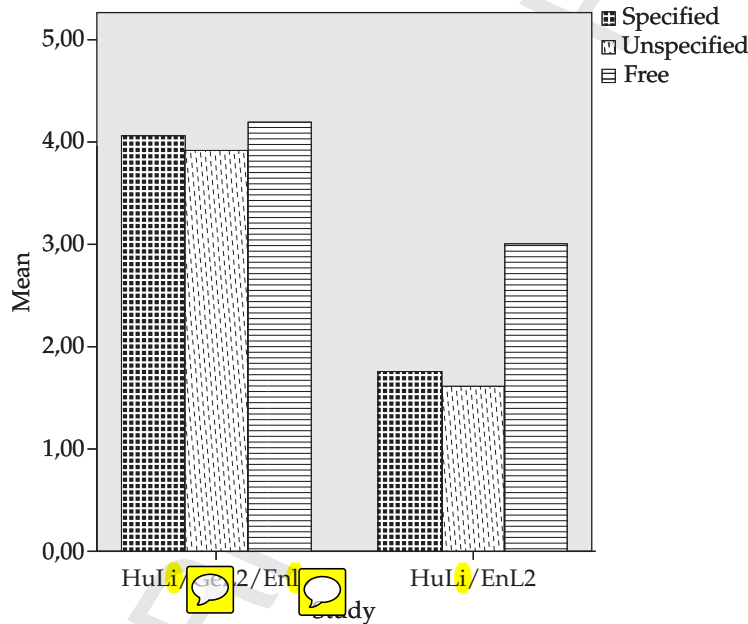


Figure 6.3 Correct production by the L2 and the L3 learners according to type of relatives

clearly improves with competence. In fact, the p value proved to be significant or very close to significant at each level of proficiency, as shown in Table 6.7.

Finally, the within-subjects contrasts revealed that it was precisely the contrast between free vs. both types of lexically headed relatives that contributed to the significant interaction between study and type of relative. Figure 6.3 shows the graphical representation of correct production by the two groups according to the different types of relative sentences.

Discussion

The production data of the HuL1/EnL2 speakers on the three types of relatives were highly surprising: Learners did not seem to benefit from their previously acquired knowledge of the CP setup for Hungarian when learning English. Results reveal that free relatives were significantly more productive than the lexically headed forms in terms of amount correct, i.e., the HuL1/EnL2 learners appear to develop the target-like CP structure over time, whereas the free relatives, as in the case of the JaL1/EnL2 group (study #2 in Table 6.2), seem to be fully available at all points in development. We did not expect such an outcome, yet, there might be a good reason why learners would need to employ such a strategy. It is true that Hungarian matches English in head directionality, notwithstanding Hungarian is considered to be organized around the concept of topic and focus rather than the concept of subject (Li 1976). This might precisely be the reason why Hungarian learners of L2 English would need more time to find the right values for the CP setup in the target grammar. Free relatives, which seem to have a more transparent syntactic structure for the learner (Flynn *et al.* 2005), appear to be available for them from the beginning of their language development. This study provides, then, further support for the claim that free relatives seem to be developmental precursors to full lexically-headed forms (Flynn *et al.* 2005).

In contrast, the multilingual HuL1/GeL2/EnL3 speakers produced all types of relatives with nearly the same high rate of success; we could not detect a markedly better production of free relatives at any stage of their language proficiency. We conclude, therefore, that for these learners free relatives do not appear to be primary in the development of target-like grammar.

Turning back to our predictions, we found no evidence for negative transfer from L2 German in the way that learners of L3 English construct their target grammar (prediction (9)). Whereas the HuL1/EnL2 group seems to develop full lexically-headed forms over time, the HuL1/GeL2/EnL3 group appears not to differentiate the three types of relatives in their treatment, thus indicating that the fully-fledged CP setup in the target grammar is fully available to them from the beginning of their constructing the target grammar.

Regarding our predictions (8), we may conclude that the picture which is emerging is more nuanced than we had thought before. Not only have we found a significant difference in the correct imitation of the three types of relatives between the two groups, but the emerging developmental patterns have proved to be radically distinct in the two groups.

Results support our prediction (10), i.e., the claim that multilingual learners have an enhanced knowledge of the target-specific CP architecture. Even where learners had no explicit advantage in terms of previously acquired CP structure, a significant enhancement effect was found. It seems as if the knowledge of the fully-fledged CP structure of L2 German activates possible patterns the CP might take, thus it indicates that multilingual learners, due to their enriched experience

in CP properties, acquire an enhanced syntactic fluency, which seems to facilitate the way that they construct subsequent target grammars.

Conclusions

We are in a position now to provide a tentative answer to our research question which seeks to explore the nature of the multilingual enhancement effect. Results of the series of studies we have presented in this chapter help us better understand language acquisition, and most particularly the nature of the hypotheses language learners impose when learning a new target language. In particular, we have found strong support for the claim that the acquisition of complex sentence structures involving relativization of an NP in a target grammar requires a specific developmental process, which seems to follow a common path for learners with diverse language backgrounds. More specifically, in constructing the lexically headed relative clause in the target language, learners build upon knowledge of the free relative (see Flynn and Lust 1980 and Hamburger 1980 for English; Packard 1988 for Mandarin; Lee 1991 and Lee, Lust, and Whitman 1990 for Korean; Murasugi 1991 for Japanese; Foley 1996 for French; Somashekar 1999 for Tulu; Mróz 2010 for Polish; Flynn *et al.* 2004 for Kazakh). These results suggest that the universal properties underlying the free relative are fully available for the learner at all points in the course of developing a target-like grammar, therefore we may say that free relatives seem to act as a sort of syntactic primitive with respect to other relative clause types.

We may, therefore, argue that the series of studies presented here provides strong support against simplified accounts of language transfer from either L1 or any previous language. Any theory of acquisition based entirely on transferring surface elements from one language to another cannot give an explanatorily adequate account for how language develops in the mind of the learner. We could, however, observe that specific previous linguistic knowledge does make a difference in subsequent language development. On the one hand, we saw how the knowledge of a full-fledged CP structure in L2 Russian helped L1 Kazakh learners of L3 English to draw upon this knowledge and thus skip a more 'primitive' stage, where learners take advantage of the more transparent free relatives to build up complex structures in the target language (Flynn *et al.* 2004). On the other hand, this chapter shows that certain language constellations may be beneficial for the learner as they facilitate the acquisition of syntactic features carried by functional elements. Given that a certain 'word order' feature on CP is responsible for the possible variations in word order in the subordinate clause, when L1 Hungarian learners have acquired L2 German, their universal CP knowledge seems to register the existence of such a feature, a knowledge which we called 'syntactic fluency,' and thus facilitates their subsequent acquisition of English, since we have not detected a need to fall back onto the more primitive stage of building upon free relatives.

R

Finally, we would like to add here a remark concerning CP properties. As we mentioned earlier, results of the Berkes and Flynn (in press) study seemed to support the claim that the CP feature for constituent word order plays a critical role in subsequent language acquisition. Results of the HuL1/EnL2 study seem to indicate that there might be another determining feature in the CP setup, the one responsible for how sentence structure is organized, which has an impact on how a language learner constructs target-like grammars.

NOTES

- 1 See Hammarberg (2010) for a discussion on conventional and alternative uses of concepts and terminologies with regard to the acquisition of L1, L2, and L3.
- 2 Saying this, however, does not mean that UG is unavailable to the learner – at least under the Strong Continuity Hypothesis as discussed above.
- 3 Attempts were made to extend findings to the process of subsequent interlanguage development (see Falk and Bardel 2010; Rothman 2010).
- 4 The inclusion of relative sentences with unspecified heads, where the head has little or no semantic content (as in the case of free relatives), allows researchers to tease apart the syntax and the semantics. If learners' production on unspecified headed and free relatives patterned alike, it would show that there is a semantic effect, whereas if headed relatives patterned against free relatives, it would suggest a syntactic effect.
- 5 This claim contrasts with deficit models (e.g., interference, negative transfer). Performance errors may negatively influence production data or the learner may licitly opt for using the strategy of translation and thus transferring elements of grammar from one language to the other, but such errors are not necessarily an indication of the level of competence at the deepest level, at the level where the construction of language-specific grammar takes place.
- 6 See É. Kiss (2008) for a summary of arguments for and against.
- 7 See also Cenoz (2004).

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