

Chapter 10 Multi-competence and syntax

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1. Introduction

From antiquity to our century we may easily find evidence for an overwhelming bi- and plurilingualism. “Language contact intruded into virtually every aspect of ancient life: e.g., high literature, the law, medicine, magic, religion, provincial administration, the army, and trade.” (Adams and Swain 2002:1). Given the increased pace of globalization and the boom in the use of social networking sites in the last ten years, as seen in the Pew Center’s Report (2013) the tendency to grow up in a plurilingual community and actively use multiple languages on a daily basis is likely to increase. See similar arguments in Chomsky (2006); Grosjean (2004); Auer and Wei (2007); Cook and Newson (2007), Aronin and Singleton (2012) among others. Bhatia and Ritchie in their recent *Handbook of Bilingualism and Multilingualism* claim that “far from being exceptional, as many laymen believe, plurilingualism [...] is currently the rule throughout the world and will become increasingly so in the future” (Bhatia & Ritchie, 2013). Country borders may, in some cases, still represent the borders of a linguistic community, but even these communities are affected by migration of other linguistic communities due to socio-political, economical or even climatic reasons. Increased infrastructure, better communication facilities and the explosive use of media have not only opened up but practically erased barriers among speech communities. If we consider the legions of people who are affected by any or all of these circumstances listed above, the amount of bi- or multilingualism is truly extraordinary. But even if a region is not divided up into communities speaking syntactically rather different dialects or variants of a language, educational policy requires the teaching of one or more foreign languages as part of the curriculum from primary school on or as early as in kindergarten. Therefore, even in regions where the overwhelming majority acquires and speaks the same language, the use of at least another language different from the official one has to be necessarily regarded as the most common and thus standard norm, or as Cook and Newson express it from a multi-competence perspective: “most people, or indeed *all* people, have multiple grammars in their minds” (Cook and Newson 2007:223).

As the present volume suggests, multi-competence is not restricted to the knowledge of syntax in the mind of multilinguals; nevertheless, the growth of syntactic knowledge in acquisition plays an undoubtedly leading role in language development. The role of syntax in language development is precisely what we try to explore here in this chapter. In doing so we present some essential research findings to claim for a cumulative enhancement of linguistic knowledge to facilitate language acquisition, as proposed by Flynn et al. (2004), and dwell upon the syntactic implications such a proposition has on the Faculty of Language and related processes. The chapter intends to show that the proficient use of multiple languages enhances learners to develop *syntactic fluency* which, we argue, is to be understood as a certain syntactic sensitivity to detect target-specific feature setups for functional categories and combinatorial ease in integrating and mapping them into the new grammar.

2. Development of language and cognitive development

Most experts agree that people's capability to acquire languages is specific to the human species, the Faculty of Language (FL) and that this capacity is innate. The theory of such a genetic endowment has been called Universal Grammar, or UG, to describe how the human brain processes linguistic material (e.g. Chomsky 1986, Wunderlich 2007, Pietrosky and Crain 2012; for an overview of L1 language development from this perspective, see Lust 2006). There are other recent but sharply emerging theories to invalidate the existence of a biologically programmed FL (see Li and Zhao 2013 for an overview of connectionist proposals for cognitive architecture; De Bot, Lowie and Verspoor 2007 for the description of the dynamic systems theory). It is not our intention here to debate over the convenience for conducting the study of syntax within the generative tradition, the series of crucial theoretical assumptions which have proved most fruitful in the last 50 years, but, with the help of assuming an innate capacity for language, we believe we may succeed in tracing some basic components for the theory of language development which considers bi- or multilingualism as Nature's standard.

It has always proved to be a puzzling matter to discover the fundamental nature of the human innate capacity for language; hence language acquisition has always evoked considerable interest among linguists. From the perspective of syntax, there are two essential elements that fundamentally determine how linguistic theory, and by extension the theory of mind, are to be developed. Researchers are divided about the line what stand they take in these matters. Firstly, linguists are interested in finding out how the

development of language differs from other cognitive development and thus the relationship between the FL and other domains of cognition. Can language development be considered as one of the factors of a more general cognitive development governed by external rules or does it have its own specific principles which govern linguistic development in general? Once accepted the proposal of an independent FL for language development, a corollary question arises as to its availability for L2...Ln acquisition. Empirically founded arguments and theoretically valid considerations have been made to support the idea of an innately determined faculty specific to human language that guides and constrains L1 development as well as later L2–Ln acquisition (see, for example, Epstein et al. 1996, Martohardjono et al. 1998 among others). This does not mean, however, that the theory of an independent FL denies that language acquisition is a rather complex phenomenon subject to and influenced by the development of other related cognitive systems. Linguistic theory must focus on what is distinctive and thus specific to language and language acquisition, only then may it contribute to constructing an adequate theory of mind.

As an illustration of how the access to unknown linguistic phenomenon can be studied by L2 learners, consider Ko, Perovic, Ionin and Wexler's study of how certain semantic universals affect the choice of English L2 articles (2008). The authors of the study tested two groups of English L2 learners on their knowledge of three semantic factors in English L2: definiteness, specificity, and partitivity. The learners' L1s, Serbo-Croatian for group 1 and Korean for group 2, lack articles and demonstrate no other way of directly encoding either specificity or partitivity. Nonetheless, results show that learners with either of the L1s can distinguish specificity in English L2. Since the learners could not rely on learnt knowledge taken from their L1 in either of the cases, these results cannot be explained by language transfer. Hence, this finding presents support to the claim that learners of English L2 can have direct access to linguistic knowledge provided by their UG without the intermediation of their L1.

Another fundamental question related to FL refers to its change over time. More specifically, language theory must ask what the role of FL is in language development. What happens to FL in the course of development, be it L1, L2 or Ln? Does FL alter at all, and if so, how can alteration in FL be conceived or understood? Accordingly, the ultimate question refers to the nature of language development, to ask what is that matures, changes or restructures as a response to input effectuating increased knowledge

of language? If we follow the line of investigation we have adopted here, the logical answer to these questions is that FL cannot change, mature or restructure at all, being an innately determined language capacity for humans. Nevertheless, the increase in knowledge of language takes place as a natural consequence to linguistic input. To give an example, let us consider here a behavioural acquisition study comparing the structural constraints of children and adult code-switching. Paradis, Nicoladis and Genesee (2000) looked at how production data of children and adult French-English bilinguals reflect learners' knowledge of the functional category INFL for these languages. The presence of system morphemes in their utterances, such as tense, agreement or aspect markers, copulas, auxiliaries, etc. is considered as overt reflexes of the above mentioned functional category. Given the fact that INFL-related morphology in English emerges later in development than in French, results indicate that the use of language-specific INFL morphology does not necessarily reflect children's syntactic knowledge related to the language-specific INFL. The authors conclude that syntactic knowledge must be regarded as something different from the knowledge of grammatical rules of the target language. Yet, syntactic knowledge seems to be closely related to the acquisition of the target-specific setup of elements in the Lexicon, in this case the specific architecture of the English and French functional category INFL.

3. Bilingualism is Nature's standard

In the previous section we introduced the two fundamental questions a syntactic theory of language development must consider if it aims to be explanatory. In what follows, we would like to delineate an approach which may eventually help to understand language development of multilinguals. We present here supporting evidence not only from a wide range of behavioural L1 and L2–Ln acquisition studies but provide arguments as well using the results of some recent brain imaging studies.

Linguistic theory, especially from the formulation of the framework of Principles and Parameters (see Chomsky 1981), has stimulated fruitful research in language acquisition. A great variety of language combinations has been studied, especially those where parameter values do not match. The term *parameter resetting* refers to the mechanism which helps learners to assign a new value to the learnt language. The term itself seems to be a rather unfortunate choice as it suggests the loss of a value with the replacement of another, which would ultimately imply the loss of the representation of one language-specific grammar, viz. L1 in the acquisition of another, viz. L2. Not only is it a problematic term, but practical considerations heavily undermine the explanatory aspirations of a theory that

adopts “parameter resetting”. Individuals with linguistic competence in at least two languages necessarily own and retain more than one grammar, the simultaneous presence of different grammars in a mind is a fact (see explicit examples in Cook and Newson 2007). Simultaneous bilinguals, for instance, are in multiple language states at the same time. Given the great diversity in how languages generate wh-questions, wh-movement has been one of the most studied areas in language theory and acquisition. Let us take a Korean-English simultaneous bilingual as an example. It is well known that the two languages represent typologically contrasting ways. Whereas English requires that wh-elements move to the C-domain visibly in the course of the derivation (1.a), Korean wh-phrases remain in-situ (1.b).

- (1) a. What_t do you like e_i?
 b. ne-nun mwues-ul cohaha-ni?
 you-Top what-Acc like-QE
 ‘What do you like?’ (Chung, 2000: 358 (1 a-b))

Simultaneous bilinguals, i.e. those who learnt both languages from birth are speakers with two L1s, therefore, their FL is supposed to represent the two languages in fundamentally similar ways. The central issue here is to find a plausible way to reconcile linguistic theory with the theory of language acquisition, theory with practice, theory with how multiple linguistic systems actually interact in the mind of an individual. More specifically, if we accept that wh-movement is triggered by a strong wh-operator feature on the head of a functional category like CP (see Chomsky 1995), the question is how a person who is in English and Korean language states at the same time can select the correct strong/weak wh-operator for an interrogative sentence. Consequently, and as indicated above, the technical term of parameter setting/resetting is not apt to capture this important aspect we have dwelled on here.

Recent developments in code-switching studies further elucidate this intriguing question. MacSwan (1997, 2000, 2013) convincingly argues for the implementation of a constraint-free theory of code-switching, i.e. a theory without a speculative control structure of which role would be to mediate between the two grammars in use. Making effective use of the tools provided by the Minimalist Programme (Chomsky 1995), MacSwan proposes that cross-linguistic variation can be traced back to the Lexicon, whereas the syntactic operations along the computation are constrained by UG for all intervening languages. Cheng’s Clausal Typing Hypothesis (Cheng, 1991) explains how the typological variation

in wh-question formation can naturally be applied to the Lexicon. In order to “type” a clause as interrogative, the speaker either selects a wh-particle for the C head, in which case overt movement is not necessary, or chooses a wh-word, which has to be valued by an AGREE operation according to the requirements of the overt component and movement follows. If this hypothesis is on the right track, an English-Korean multilingual speaker selects the interrogative pronoun *what* from the Lexicon in English and, as required by UG, moves it to the C-domain to construct the sentence (1.a), but chooses the wh-particle *-ni* and leaves it in-situ to express the same idea in Korean (1.b).

Further support for the view that cross-linguistic differences are restricted to lexical representations is provided by insights about the development of the functional INFL category. As noted above, Paradis, Nicoladis and Genesee (2000) investigated code-switching data from 15 bilingual children and found an unequal emergence of the INFL category in the acquisition of the two languages. The authors claim that English-French bilingual children, although clearly aware of this category’s existence, seem to lag behind in their productive use of INFL in English. Such a finding hints at the possibility of regarding the feature setup of the English INFL as less transparent for children, which effectuates such a delay. Further studies are necessary to make a stronger claim for the lexicalist approach proposed by MacSwan, but the hypothesis has already proved to be productive, and if it continues doing so, it undoubtedly has far-reaching implications not only for how the architecture of the bilingual FL may look like but also for the theory of language acquisition in general.

4. Towards a new research paradigm for language development

Making the statement that bilingualism is Nature’s standard strongly implies that an efficacious theory of language development must show a serious interest in trying to understand the bilingual mind. In what follows, we would like to suggest some approaches to constructing a new paradigm for the theory of language development, pointing out how they are related to the two fundamental questions of language acquisition discussed above in order to improve our comprehension of what actually happens in the field of syntactic development. We believe that such an endeavour will also foster understanding of related domains of human cognition.

4.1 Aspects of grammatical knowledge development

In the present section we would like to discuss some relevant issues regarding what aspects of grammatical knowledge develop in the course of language acquisition. However, before we set off, we need to say some words about what we consider to be the “initial state” for L2 acquisition. There are two principal and rather contrasting hypotheses on which researchers within the UG tradition have based their models for language development: the Maturation Hypothesis, originally put forward by Felix (1984) and the Strong Continuity Hypothesis, proposed by Flynn and Lust (2002)¹. The difference between the two comes down to the fact that the Maturation Hypothesis assumes L2 learners’ access to UG in the form of a previously developed language-specific grammar, namely their L1, whereas the Strong Continuity Hypothesis posits that UG remains intact and available for guiding the development of further target-specific grammars. Adopting one or the other hypothesis has far-reaching implications for a theory of language development. The Maturity Hypothesis only allows for a unidirectional or linear development, be it increasing or decreasing, viz. language loss, due to UG having been transformed into L1. It seems that such a hypothesis is doomed inoperable for a research paradigm that argues for bilingualism as Nature’s standard. The Strong Continuity Hypothesis, on the contrary, allows for postulating an initial state for L2–L_n acquisition similar to the one for L1 regarding the capacity of a speaker’s FL to construct target-specific grammars. In other words, it proposes that certain principles of UG operate as long as a learner encounters new linguistic data that need to be processed (see Berkes and Flynn 2013a for a more detailed review of the two hypotheses and the models based on them).

Once we accept the claim that, after shaping L1, UG remains accessible for the processing of subsequent linguistic data, we need to ask why the majority of L2 learners seem to fall behind L1 speakers in their performance of the given language. The Critical Period Hypothesis has been the subject of intense debates for over decades. The original idea proposed by Penfield & Roberts (1959) and broadly disseminated by Lenneberg (1967) was also extended to SLA (for detailed reviews of this debate see Singleton and Lengyel 1995; Singleton and Ryan 2004). Nonetheless, research in behavioural L2 acquisition indicates that, contrary to popular belief, there is no empirical evidence in support of a critical period for L2 (or next language) acquisition (e.g. Cook 2002; Epstein et al. 1996; Klein and Martohardjono 1999). In addition, several brain imaging studies using fMRI and

¹ A comparable model for L1 development was originally proposed by Levy (1983) challenging Gleitman’s stage-model for language development (1981).

PET appear to corroborate this claim by revealing that highly proficient non-native speakers display similar patterns of acquisition, regardless of age of acquisition² (Perani et al. 1998). This is in contrast to the results produced by intermediate level non-native speakers, who display more diffuse representation of the L2 across the brain when compared to highly proficient non-native speakers (Dehaene et al. 1997). The same conclusion was drawn by Kessler, Martohardjono and Shafer (2004), who also looked at morphosyntactic development to test abstract grammatical knowledge. In short, language-related brain activation patterns seem to attest that it is language proficiency rather than age of acquisition that is critical in determining how the brain processes linguistic material. Development in applied Electroencephalography (EEG) studies further attest that event-related potentials (ERP) responses vary systematically with L2 proficiency level. Increased proficiency seems to be in causal relationship with late P600 effects, viz., 600 milliseconds after the introduction of the stimulus to the brain. Nonetheless, results also indicate omissions of left anterior negativity. This in turn suggests less automated syntactic processing in the case of advanced learners (Hahne 2001). Magnetoencephalography (MEG), a further functional neuroimaging technique, was employed to conduct a recent study to map brain activity at language production (Arviso et al. 2005). The main objectives of this study were to learn how MEG patterns of activation differ in the course of L2 development and whether patterns of L2 acquisition can in any way at any stage be related to established L1 patterns. Results indicate that learners of English L2 differentiate grammatical and ungrammatical verb stimuli in the same manner as native speakers do. Consistent with former results in behavioural SLA studies, the MEG study of Arviso et al. also suggests that age of arrival and age of learning an L2 are not significant factors in determining brain patterns for language acquisition. We conclude then that any theory of language development must clearly recognize and distinguish between factors of performance and those of competence taking proficiency rather than age as a covariate.

Having said this, now we return to the issue of how languages known prior to a new acquisition task relate to each other. This has been the subject of hot debates over years either in the form of *L1 transfer* to refer to how the L1 of a learner influences further acquisition, or as *cross-linguistic influence* to refer to how any or all languages known prior to the acquisition of an Ln impact this process (for recent discussions see e.g. De Angelis

² Kim et al. (1997) indeed found that age of acquisition emerged as a significant factor in terms of subsequent patterns of brain activation. However, their study did not control for levels of L2 competence.

2007; Hammarberg 2009; Leung 2009; or see Berkes and Flynn 2013a for an up-to-date review).

As we indicated above, the Strong Continuity Hypothesis suggests that UG is available in its entirety to the learner, yet accepting this hypothesis does not imply that the role previously acquired languages and language grammars may play in subsequent language development must be rejected. More precisely, what is predicted is 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, here we propose to reject “transfer” on the level of fundamental computational mechanisms which characterize the FL as a result of understanding language learning not as a maturational, but rather a computational process.

Such an understanding obviously raises the question of how previously known languages may be at work when a learner faces a new acquisition task. Results from a recently completed series of studies may shed light onto this matter (Flynn and Lust 1980, Flynn 1983, 1989; Flynn et al. 2004; Berkes and Flynn 2012a, 2012b). Learners with different L1s were tested on their elicited imitation of three types of restrictive relative clauses: headed (specified and unspecified) and free relatives, each type including four variants according to function of head NP and gap (SS, SO, OS, OO), as illustrated in (2)-(5) below:

- (2) Headed (specified): *The woman instructed the lawyer who the policeman called.* (OO)
- (3) Headed (unspecified): *The person who the engineer answered criticized the man.* (SO)
- (4) Free: *Whoever entered the office introduced the professor.* (SS)
- (5) Free: *The professor introduced whoever greeted the lawyer* (OS)

The participating homogeneous groups consisted of English L1 children, or either English L2 or English L3 learners at three levels of English proficiency, measured by a standardized test prior to experiment. Background languages for the groups were selected according to the parametric variation of two CP-related features: head-directionality and word order in subordinate clauses. Table 1 lists the participating groups and their background languages indicating the relevant characteristics with regard to the two CP features in each language.

Table 1: CP-related features in background language from selected studies

#	Study	Source	Language	Head- initial	Head -final	SV O	SO V
1	English L1	Flynn and Lust (1980)	English	✓		✓	
2	JaL1/EnL2	Flynn (1989)	Japanese		✓		✓
3	SpaL1/EnL2	Flynn (1983, 1989)	Spanish	✓		✓	
4	KazL1/RuL2/ EnL3	Flynn et al. (2004)	Kazakh		✓		✓
		Flynn et al. (2004)	Russian	✓		✓	
5	HuL1/EnL2	Berkes and Flynn (2012b)	Hungarian	✓		✓	
6	HuL1/GeL2/ EnL3	Berkes and Flynn (2012a,b)	German	✓			✓

The general results of this series indicate, on the one hand, that a linear model for multiple language acquisition does not satisfactorily explain the development of underlying syntactic processes. On the other hand, the experiments show that the development of syntactic knowledge in L3 acquisition cannot be clearly traced back to either L1 or to the influence of the last learned language. Japanese L1 learners of English L2 (study #2 in Table 1), like the English monolingual children (study #1 in Table 1), scored significantly higher on free relatives than on any of the lexically-headed relative types, whereas the Spanish L1 group (study #3 in Table 1) did not do significantly better on any of the three types of relatives in their L2 acquisition of English, despite having been equated 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 the Japanese L1 learners of L2 English), and use it in subsequent learning. This seems to signify that the free relative clause structure is a developmental precursor to the lexically-headed form (similar results were found for English, see Hamburger 1980 and Flynn and Lust 1980; for Mandarin see Packard 1988; for Korean see Lee 1991 and Lee et

al. 1990; for Japanese see Murasugi 1991; for French see Foley 1996; for Tulu see Somashekar 1999; for Polish see Mróz 2010).

The primacy of free relatives in CP development of the target language was further tested by Flynn et al. (2004) (study #4 in Table 1), who investigated an adult group of KazL1/RuL2 learners of L3 English. Kazakh is a head-final language with an SOV constituent word order within the relative clause, like Japanese, the difference being that these learners learned Russian as L2 first and subsequently English as L3, which is a head-initial language with primary SVO order in relative clauses, so it matches the English configuration. Results of this study indicated that the development of the CP structures in the target language of these learners 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 English, who had already instantiated the CP setup for English through the acquisition of their own L1. In sum, it seems that some sort of awareness of CP-related features in previously known languages has an impact on how additional language-specific grammars develop. Based on these experimental facts Flynn et al. (2004) ended with the postulation of the *Cumulative Enhancement Model for Language Acquisition* (CEM), which claims that learners may draw upon acquired knowledge of language-specific information or template in later acquisition, e.g. CP features. In other words, this model hypothesizes that all previously known languages are available to the learner to constructively enhance subsequent language learning.

Berkes and Flynn (2012b) extended the series by adding production data from a bilingual HungarianL1/EnglishL2 group and a multilingual HungarianL1/GermanL2/EnglishL3 group to the database. Hungarian and German match English in head-directionality, notwithstanding both Hungarian and German differ from English in another CP-related parameter, the word order in the subordinate clause, as indicated in Table 1. German exhibits an SOV word order in subordinate relative clauses, whereas Hungarian is

considered to be organized around the concept of topic and focus rather than the concept of subject (Li 1976), which also suggests that constituent word order within the relative clause might not be encoded in this language the same way as in German or in English. Results of study #5 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 1), seem to be fully available at all points in development. Free relatives seem to have a more transparent syntactic structure for learners (Flynn et al. 2005) subsequently they appear to be available for them from the beginning of their language development. Hence, this study provides further support for the claim that free relatives seem to be developmental precursors to full lexically-headed forms. In contrast, the multilingual HuL1/GeL2/EnL3 speakers produced all types of relative sentences with nearly the same high rate of success. The additional error analyses showed that the emerging developmental patterns were radically distinct in the English L2 and L3 groups. No significant difference was detected in their production of free relatives at any stage of their language development. It appears then that multilingual language growth regarding syntactic development shows a highly nuanced picture. Multilingual learners of English exhibited an enhanced knowledge of the target-specific CP architecture although German does not entirely replicate the target-specific CP. In this case learners could not possibly draw on already established patterns, viz. previously acquired complete CP structure, nevertheless a significant enhancement effect was found, as if the previously acquired fully-fledged CP structure of L2 German had activated possible CP patterns in the learners' mind.

The series of studies presented here is a counter-example to 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. There are, however, indices which show that specific previous linguistic knowledge does make a difference in subsequent language development. Not only knowledge of a full-fledged CP structure may induce learners to skip a more "primitive" stage and build up complex structures in the target language, as we saw in the case of L1 Kazakh learners of L3 English who could draw upon their L2 Russian (study #4 in Table 1), but also the activation for new CP patterns in the mind of multilinguals (study #6 in Table 1). The

subtle knowledge that CP may have diverse feature setups seems to provide *syntactic fluency*, the ability to combine features for CP with greater ease to facilitate subsequent acquisition of target-specific grammars and circumvent falling back onto the more primitive stage of building upon free relatives.

4.2 What knowledge does FL provide?

In the previous section we attempted to show that multiple language acquisition is to be considered fundamentally different from L2 acquisition as regards to the linguistic properties of the initial point of the non-native grammar. Due to acquired syntactic knowledge provided by previously known languages, the learner of an Ln seems to be equipped with the ability to dissociate and newly integrate functional features for elements selected from the Lexicon to compute sentences, a disposition which may result in a statistically measurable cumulative enhancement effect concerning the new grammar. Now we turn to consider the type of knowledge a multilingual learner's FL provides, or with other words, we undertake to explore how learners integrate innate linguistic and language-specific knowledge for Ln in acquisition.

Some mainstream acquisition studies brought forth the claim that language development is mainly due to non-linguistic mechanisms, such as distance and processing ease. In point of fact behavioural studies on restrictive relative clauses found that there is a general hierarchical order in ease of processing, equally applicable to comprehension and production data in L2 English acquisition. According to this view, subject-modifying relatives, especially where the gap in the relative clause is the subject (SS) were claimed to be the easiest to process (e.g. Gass 1979; Pavesi 1986), mainly due to the shorter distance between the filler and the gap in the relative clause in the linear surface order of constituents (e.g. Tarallo and Myhill 1983). On the other hand, recent usage-based analyses have attested the primacy of object-modifying relatives in development of complex structures in L1 acquisition (e.g. Kidd et al. 2007) where language-specific difficulties in processing object-modifying relatives were eliminated by employing pronominal subjects or inanimate objects. Yet, abandoning the quest for underlying syntactic principles leaves essential cross-linguistic second language acquisition findings unexplained. Therefore, if the theory of dissociation and integration of features is on the right track, we need to look for empirical support that language development is guided and constrained by UG, i.e. there are indices for a syntax-driven progress in language development. We believe that

experimental data taken from the acquisition of free relatives provide the desired arguments.

Results of the series of studies we presented in chapter 4.1 (see Table 1) help to better understand language acquisition, and most particularly the nature of the hypotheses that language learners entertain when learning a new target language. In particular, strong support was found for the claim that the acquisition of complex sentence structures involving relativisation of an NP in a target grammar requires a specific developmental process. This process seems to follow a common path for learners with diverse language backgrounds on the one hand, but on the other hand it appears to be greatly influenced by accumulated knowledge of possible syntactic structures in general. The series of studies listed in Table 1 shows that in constructing the lexically headed relative clause in English, L1, L2 and L3 learners build upon knowledge of the free relative. This suggests that the universal properties underlying the free relative are fully available for learners at all points in the course of developing the 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 and thus provide a basis for “grammatical mapping” from UG principles to language-specific grammars (Foley 1996).

It is to be noted here that grammatical function primacy regarding free relatives is to be distinguished from the Accessibility Hierarchy proposed by Keenan and Comrie (1977). The latter presents a continuum regarding the level of difficulty with which language learners access the rules of the target language based on processing difficulties. Given that free relatives are structurally more transparent, as noted above, grammatical function primacy in free relatives reveals an aspect of grammar that is more directly related to basic or ‘core’ grammar rules of UG. Hence free relatives provide the basis for ‘grammatical mapping’ of complex structures and this is the reason why examining their development may give insights to the type of knowledge the FL provides.

A further study was conducted based on the series listed in Table 1 to investigate this matter. Berkes and Flynn (2013b) compared the elicited imitation of free relatives of a German L1 and a Hungarian L1 group of adult English L2 learners. This study involved the already presented four variants of free relatives according to function of head and gap (SS, SO, OS, OO) at three levels of language proficiency measured by an independent standardized test. The syntactic derivation of an OO free relative based on assumptions made by Caponigro (2000) proves to be the most economical, thus the fact that both

groups produced statistical result for the OO type of free relatives³ gives support to the theory that language development is constrained by principles of economy. The observed grammatical role primacy effects imply therefore that language development is syntax-driven, and more generally, that acquisition of complex structures is a true reflection of linguistic economy.

Another supporting argument for a syntax-driven FL representation comes from a study that examined how multilingual learners acquire correct referential relations for subject-controlled pronominal anaphora in adverbial subordination. In Berkes and Flynn (in press) we looked at the elicited production of sentences involving adverbial subordinate clauses with the subordinator *when* (6)-(9) of a group of HungarianL1/GermanL2 learners of English L3.

- (6) When he entered the office, the janitor questioned the man.
- (7) When PRO_i inspecting the room the worker_i questioned the janitor.
- (8) The man answered the boss when he installed the television.
- (9) The professor_i answered the owner when PRO_i preparing the lunch.

Testing the production of null anaphora (PRO) was critical to the design as null anaphora is obligatorily subject-controlled in English, as indicated (sentences (7) and (9)). However, this is not the case in either Hungarian or German nor there are non-tensed clauses; thus, production of such constructions reflects a form of grammatical analysis implicitly carried out by these learners.

Accepting the claim that directionality as set in the target-language fundamentally affects the way learners interpret pronouns, the experiment was to test whether referential relations involving pronoun anaphora would reflect learners' subtle syntactic knowledge of English directionality. As we mentioned before, neither German nor Hungarian match the feature setup of the English CP completely, learners must figure it out in the acquisition process. Although we found no statistically measurable evidence that learners imitate postposed adjuncts with overt pronouns more successfully than preposed ones, error analyses suggest that this is so. Learners tend to commit significantly more anaphora errors on preposed adjuncts with an overt pronoun than on postposed adjuncts at low level. This

³ Group-specific differences were explicated by the fact that German, Hungarian and English differ in the ability of the matrix verb in relative clauses to assign structural case. Matching effects occur in German but not in Hungarian and only partially in English. Nonetheless, this study shows that language development, as exhibited in the case of free relatives, is comparable regardless of L1.

fact shows that there is a surprising directionality effect present in the imitation data and which replicates the results found in English L1 acquisition where it was seen that children tended to be more productive on forward pronominalization (Lust et al. 1986; and references cited there). It seems that Hungarian L1/German L2 learners of English L3, like English L1 children, connect directionality of the target-input and referential relations since they are more productive on forward pronominalization.

Our first conclusion then is that the directionality principle, as in the case of English L1 children, constrains the development of learners' representation of the new grammar from the very beginning. Furthermore, Hungarian is considered to be a null-subject language (NSL), i.e. it requires the omission of personal pronouns in neutral contexts. Given the fact that Hungarian does not encode directionality in the domain of our stimuli for lacking the obligatory DP layer present in non-null-subject languages (non-NSL), we assume it is the German L2 that provides this subtle knowledge learners could draw upon. Production data in this case supports the hypothesis that language learning is a cumulative process whereby learners have access to previous syntactic experience to enhance subsequent learning as proposed by the CEM. Language representation is not redundant, syntactic feature settings can be drawn upon to build a new target-specific grammar. Therefore, production data of adverbial pre- and postposed adjunct clauses with overt pronouns and with subject-controlled pronominal anaphora PRO imply that development of anaphoric relations in these domains is likewise constrained for Hungarian L1/German L2 learners of English L3 by their FL as for English L1 children.

The studies presented in this chapter attempt to illustrate how structure is imposed upon a developing target-grammar, in this case English. Such a finding has far-reaching consequences in designing theories of language development. If we are on the right track, *parameter setting* must be reinterpreted in a way that it refers to the capacity of multilingual learners to respond to the structural requirements FL imposes on the new grammar. This is what we propose to call *syntactic fluency*. In sum, we could see that our Hungarian L1/German L2 learners of English L3 could develop the correct anaphoric relations based on their capacity to dissociate directionality from CP and integrate it into DP. Simultaneously, success required the recognition of the obligatory presence of a DP-layer in the domain of our stimuli.

5. Conclusions

As suggested in this chapter, the view presented by Multi-competence, as “the knowledge of more than one language in the same mind” (Cook 2012) necessarily includes the L2...Ln speakers’ syntactic knowledge as an integral part of their language awareness. The basic claim of this paper is precisely to support the thesis that bi- or multilingualism is Nature’s standard which has clear repercussions in the way syntactic development of language occurs in the brain of language learners. A bilingual mind, a truly unique human characteristic, is capable of being in multiple language states at the same time. This implies that language theory and the theory of language development must undergo a change in the research paradigm regarding fundamental issues. One such matter is the way in which language influence is to be understood, or more generally, the relationship among known languages is to be considered. We claim that the unidirectional approach has to be reinterpreted to allow for a more creative progress the learner goes through. The same is true for how language parameters and parameter setting must be treated. If features on lexical and functional elements determine how syntactic relationships are formed and meaning processed, language development must be the result of how learners dissociate and integrate lexical and functional features into elements of the Lexicon to map the linguistic material to language-specific grammars. Generally speaking, all language learners must be considered as linguists, albeit unconscious, whose language learning process is fundamentally determined by how successful they are in discovering and assigning adequate features to elements picked out from the Lexicon of the developing target-language. This is one of the aspects of what we called *syntactic fluency*, the ability which seems to be enhanced by linguistic experience provided by knowledge of multiple languages.

Furthermore, there is enough supporting evidence to claim that the mind imposes structure on developing grammars, which implies that mapping of linguistic material to grammar representations by learners is achieved with the help of genetically available support attributed to UG, and the syntactic requirements of language-specific grammars. Multi-competent plurilingual learners who show high proficiency in languages where certain feature settings do not match appear to be sensitive to single out the features needed for a new setup, another aspect of their sophisticated *syntactic fluency*. The analysis of some key issues looked at in this chapter provides some new insights into a more nuanced

understanding of the human capacity for language. We believe that setting out from here has a steadfast chance to develop an explanatory theory of language development.

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