# 8

# Acquisition of syntax



In this chapter, we turn to the acquisition of syntactic properties. Syntax is all about the organization of clauses and sentences: word order and movement of constituents. It was argued in Chapter 2 that syntax proper involves universal operations that fall from the feature specifications of the different languages. We are going to expand our ideas on how morphosyntactic parameters work, and how acquisition researchers have sought to explain their acquisition.

## 8.1 A historical excursion into the notion of parameter (through the ages)

The acquisition of syntax was the first area of the grammar to develop in generative L2A, and it is still the area most closely associated with generative linguistics. In this chapter, we will review the adult L2 acquisition of syntactic parameters, still keeping in mind the overarching question of this book: what is easy and what is hard to acquire. In order to understand the

notion of parameter correctly, we need to start from the beginning and see how that notion has developed.

The original idea of language acquisition within generative linguistics (Chomsky 1981, 1986) was that, apart from universal properties called principles, language-specific properties could be described by parameters, understood as (a small number of) options provided by Universal Grammar for controlled variation, which, once set, would offer the basis for further parameter setting. A light switch that could be turned on and off was an apt metaphorical illustration of the idea.[1] Recall from Chapter 1 that one of the first parameters described in child language acquisition was the Null Subject Parameter (NSP) (Hyams 1986). Nina Hyams argued that English-speaking children start out with the null subject value of the parameter, only to reset it to the correct value later. The switch metaphor contributed to the perception of instantaneous, successful acquisition: switches are either on or off, with no in-between state.

Conceptually, it was attractive to think of parameters as changes that would bring a host of superficially unrelated constructions into the grammar, all of them dependent on a single parametric value. For the NSP, the proposed cluster of constructions included null subjects (1a), null expletives (1b), postverbal subjects (1c), *that*-trace effects (1d), and rich subject–verb agreement (Rizzi 1982). We already saw this cluster in Chapter 2, but I will repeat the examples for ease of reference. *That*-trace effects refer to the possibility of having a complementizer followed by the trace of the moved subject (signaled by *t*). Notice the ungrammaticality of that construction in the English translation of (1d). Once a learner—child or adult—acquired null subjects, the whole cluster of associated constructions would also become part of that individual's grammar. As the reader can ascertain, these constructions are not only superficially unrelated, but of different complexity as well.

(1) a. Ø Mangia come una bestia.
eat-3SG like a beast
'He/she eats like a beast.'

b. Ø Piove oggi
rain-3SG today
'It is raining today'

[1] Attributed by Chomsky to James Higginbotham.

c. Ha telefonato uno studente.
has telephoned a student
'A student called.'

d. Chi cred-i che *t* verrà?
who think-2SG that t come-FUT
*'Who do you think that will come?'

Unfortunately, even the earliest L2 generative studies related to the Null Subject Parameter (White 1985, Hilles 1986, Phinney 1987, Liceras 1988, 1989) did not find support for the clustering of these properties in English interlanguage. White (1985) probed this parameter in the grammar of native Spanish and French speakers learning English. The prediction was that Spanish learners would have initial difficulty learning not to produce null subjects, while the French learners would not, as French is not a null-subject language, hence there is no parameter to reset. The Spanish learners accepted ungrammatical English sentences where the subject was missing more than the French learners in this study, and their improvement was gradual. It is notable that some French beginners also accepted null subjects in English. More importantly, the purportedly related constructions of the cluster did not come into the grammar simultaneously, thus calling into question the concept of the parameter as a switch. Research on other parametric clusters, e.g., the Verb Movement Parameter (White, 1990), led to mixed results, as we shall see below.

The Feature Reassembly Hypothesis (Lardiere 2009a,b), which we discussed in the previous chapter, dealt a fatal blow to the notions of instantaneous acquisition and parametric clustering. But those ideas had been undermined by research findings, such as the ones on the Null Subject Parameter, long before that. Lardiere placed the emphasis on the acquisition of formal features, in what bundles they appear on the functional morphology, what functional morphology acts as an exponent for (a bundle of) features, and what the conditioning environments are for the use of that morphology. By 2009, Lardiere had enunciated what many in the field had been discussing for some time.

However, it is premature and counterproductive to dismiss the notion of parameter altogether. Parameters still have their place in linguistic theory and in generative SLA. In commenting on the FRH, Montrul and Yoon (2009) argued that the notion of lexically encoded parameters, as widely

accepted in the Minimalist Program (Borer 1984, Chomsky 1995) is still our best hope for describing principled and not haphazard parametric variation among languages of the world and making astute predictions about what is hard to acquire in a second language. The grammar of a language is defined by a selection of formal features from a universal inventory and bundling these features on the lexical items. These lexical items (some of them residing in the lexicon, some of them in a subset thereof, the Functional Lexicon) are accessed by the universal computational system, in order to construct syntactic expressions. It is in the syntax where features are active: they trigger various syntactic processes such as Agree and Move. Interpretable features remain in the derivation and pass on to the syntax–semantics interface where they are interpreted. Uninterpretable features trigger agreement and movement of syntactic objects. After they fulfill their function, they get checked and deleted. All of these computational syntactic processes are part of the innate language faculty and do not need to be learned through input.

While the emphasis on formal features and their assembly and reassembly on lexical items is welcome, there are still principled questions linguistic theory has to answer with respect to parameters. Montrul and Yoon phrase them like this:

- Just what sorts of formal features can be selected?
- What are the formal features that UG makes available to begin with?
- Since features are assembled into lexical items, what constraints, if any, exist on the assemblage?
- Is there a logical order in which features are acquired? That is, does the selection of a feature entail that of another?
- Are parameters independent? That is, does choosing a value for a parameter for one class of lexical items have consequences for other classes? (Montrul and Yoon 2009: 296)

The cluster of constructions associated with a certain parameter is no longer a premise of generative linguistic theory because it is difficult to express in lexical terms. The research questions enunciated above are just beginning to be addressed, and the answers are frequently sought in general principles of human cognition and processing. In particular, how come we express so many grammatical meanings while we have so few syntactic operations? Linguists are trying to address the tension between the austerity

of the computational system and the universally determined set of hierarchically organized functional categories. To exemplify the current syntactic thinking, I will summarize one recent proposal, Ramchand and Svenonius (2014), but other accounts exist, too. Ramchand and Svenonius start from the observation that the sentence structure in any language can be divided into three main domains: the Verb domain, the Tense domain, and the Complementizer domain. No language exhibits these domains in any other order. Analogs of these domains exist in the structure of nominal expressions as well. Why should that be the case? These domains constitute a hierarchy that is not innate, and not given by the computational mechanism, but is rooted in human cognition.[2]

The V domain represents the conceptual primitive Event (e), containing the verb and its arguments (the participants of the event). The T domain contains the V domain and adds another function: it anchors the event or state in time and makes it a Situation. Finally, the C domain contains the T domain, adding a connection to the discourse and making the whole sentence a Proposition with a truth value. To illustrate, think of the verbal phrase *Mary eat a sandwich* which gives us the type of event the sentence is about: an eating event with Agent and Theme arguments. That event has participants but is not anchored in time. In order to anchor it, we need some tense (and possibly aspect) inflection: *Mary will eat a sandwich* or *Mary ate a sandwich*. Finally, we link the sentence to discourse by leaving it as a statement or making it a question as in *Will / Did Mary eat a sandwich*?

According to Ramchand and Svenonius, events, situations, and propositions are cognitive primitives grounded in "extralinguistic cognition: A cognitive proclivity to perceive experience in terms of events, situations and propositions (with analogous ontologies for other extended projections)" (2014: 34).[3] While this is a deceptively simple picture, it is an illustration of how linguists are beginning to address the question of where the functional categories come from and why they are ordered in functional

[2] Note that for a hierarchy to be innate and to be rooted in human cognition amounts to the same thing in practice: it is available to all language learners and does not need to be relearned in SLA. However, this distinction is theoretically important. It is not clear where innate properties come from (yes, UG, but what is UG?) while extralinguistic cognition is truly universal in the appropriate sense.

[3] Wiltschko (2014) has an analogous proposal with four domains: discourse linking (C), time anchoring (T), point of view (Asp), and classification (V). Earlier proposals of similar spirit exist, too.

hierarchies. Clearly, much work remains to be done, but it is already clear that general cognition impacts the grammar.

In the next sections, we will review some views of the possibility of parameter resetting. When discussing the evidence, we will be pointing out the lexical base of what has to be learned, in each case.

## 8.2 Representational Deficit versus Full Functional Representation accounts

If we understand parameters as sketched above—limited to the formal features that are selected from a universal inventory, assembled on functional categories and accessible from the Functional Lexicon—we have to conceptualize parameter resetting as adding or subtracting features from the feature bundles of the L2 functional categories. Recall Figure 2.2 in Chapter 2 to visualize this process. If a formal feature does not exist in the L1 but is active in the L2, then the L2 grammar needs to add it. That would be the case of grammatical gender on English pronouns and French nouns and pronouns. If a feature is expressed in the L1 but not in the L2, then this feature needs to be preempted, or deleted from the grammar. This would be the case of the feature [±Human] in English pronouns (*him*/*her* versus *it*), absent from French (clitic) pronouns (*le*/*la*) (see the discussion in Section 7.6). Finally, if a feature exists in the L1 and L2 but has a different value, or is differently bundled, or is expressed on a different syntactic category, then parameter resetting would entail feature reassembly.

In the case when a feature has to be added, we are mostly looking at uninterpretable features regulating agreement or movement. This is because a slightly different learning situation is true of interpretable features, to be addressed below. There are two major positions on the possibility of acquiring a new uninterpretable feature in the L2 grammar. In a nutshell, the Representational Deficit view argues that the mental representations of L2 learners cannot *in principle* achieve native standards because uninterpretable features not coming from the native language cannot be successfully acquired. This view subsumes the Valueless Features Hypothesis (Eubank 1996), the Local Impairment Hypothesis (Beck 1998), the Failed Functional Feature Hypothesis (Hawkins and Chan 1997), the Interpretability Hypothesis (Hawkins and Hattori 2006, Tsimpli and Dimitrakopoulou 2007) and the Fundamental Difference Hypothesis (Bley-Vroman 1989, 1990, 2009).

The Interpretability Hypothesis, for example, posits the impossibility of attaining uninterpretable features unavailable from the native language, if a learner is post-critical-period. The recent version of the Fundamental Difference Hypothesis invokes domain-general problem-solving strategies as well as transfer from the native language as the only mechanisms of acquisition available to adult L2 learners. Researchers supporting this general position have to explain *successful* acquisition of properties that are predicted not to be acquirable.

Counter to the Representational Deficit view, the Full Functional Representation view (Schwartz and Sprouse 1994, 1996, Prévost and White 2000, and many others) contends that nativelike linguistic representations are possible *in principle*, although they may be very difficult to attain in practice. Researchers defending this position have to explain variation in L2 production and comprehension, and distance from native speaker norms, that is, *unsuccessful* acquisition. Some of the hypotheses explaining variation, such as the Missing Surface Inflection Hypothesis and the Prosodic Transfer Hypothesis were presented in the Chapter 7. Other explanations will be discussed below.

One interesting thing to note is that representational deficit views can only be investigated in learning situations where the L1 and L2 differ, that is, there is an uninterpretable feature to be added or preempted (e.g., the Null Subject Parameter in Spanish and English). If research looks at a learning situation where the parameter value is the same (e.g., the Null Subject Parameter in French and English), and if successful acquisition is attested, one cannot be certain whether this knowledge came through the L1 or Universal Grammar.[4] Obviously, in the case where no parameter resetting is involved but knowledge is not yet complete, as in the French learners of English null subject in White's (1985) study, we have to invoke other explanations than parameter resetting.

In the next sections, three properties of syntax will be used to exemplify the two views: word order, verb movement, and *wh*-movement. They all depend on uninterpretable features; at issue is whether those features can be successfully acquired.

[4] In the context of L2 acquisition, Hale (1996) argues that the distinction between knowledge derived from the L1 and knowledge drawn directly from UG becomes impossible to test empirically in studies of L2 acquisition because the fundamental properties of any L2 grammar are also manifested in the L1 grammar.

## 8.3 Word order

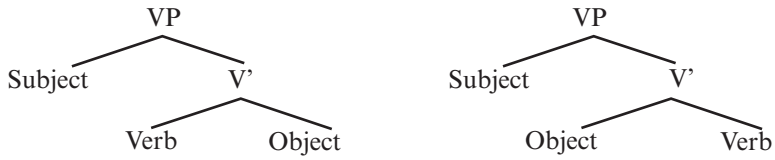
The positioning of the subject (S), verb (V), and object (O) in an informationally neutral clause (without topic and focus) is one of the major differences among languages (see Chapter 2). Permutations of the three clause ingredients can give six possible word orders. However, not all six are equally attested in the world languages. Typological generalizations show that in the vast majority of human languages, the basic word order is either SOV (about 45% in the World Atlas of Language Structures) or SVO (about 35.4%) while orders like VSO (9%) or OSV (0.5%) are much less frequent or extremely rare. It has been suggested that these strong tendencies can be explained cognitively in terms of the prototypical transitive action scenario, in which an animate agent acts forcefully on an inanimate patient to induce a change of state. The most cross-linguistically prevalent word order patterns reflect the most natural ways of linearizing and nesting the core conceptual components of actions.[5] This type of cognitively based explanation is akin to the tripartite functional structure of the sentence we discussed above, and illustrates the current efforts by linguists to embed some aspects of language in general cognition principles. If these explanations are on the right track, the significant corollary for L2 research is that switching between parameters that are cognitively supported should be easier than acquiring less cognitively supported, less frequent word orders.

To date, most L2 research has focused on acquisition of one or the other most prevalent word orders. How does a learner acquire basic SVO when their native language exhibits SOV, or vice versa? The theoretical conceptualization of this parameter has changed over the years. At the time when researchers were interested in OV/VO word order acquisition, the prevalent analysis was that the ordering of the verbal head and the object in the VP was a parameter provided by UG and fixed on the basis of ample linguistic experience.[6] The structures are illustrated in (2).

[5] See Kemmerer (2012). Note that the subject does not always carry the Agent thematic role, the object is not always the Theme, (e.g., *The key opened the door*), so assuming strict mapping is misleading.

[6] For example, Travis 1984.

(2) a. Head-initial VP (English, Romance) b. Head-initial VP (Japanese, German)




In the 1990s, an influential proposal by Kayne (1994) suggested that SVO was the universal underlying word order, and all other attested orders were a product of constituent movement. In the 2000s, the analysis shifted again to reflect a minimalist UG cleansed of all parameters. It is now widely accepted that the VP is built through the operation of Merge, satisfying the selection features on the verb (e.g., the verb *eat* is transitive and hence needs to merge with two arguments, an Agent and a Theme). Once the VP is built, the linearization of the string, that is, where each constituent is pronounced in the surface string, is calculated at the interface between syntax and the sensory-motor system, and depends on a diacritic on the verb. Essentially, the lexical information of the verb in English contains the information that the verb goes before the object, while the lexical information of the Japanese verb contains the opposite information, that the verb follows the object.

The acquisition of word order in the VP was a big part of the debate on the initial state of L2A in the mid 1990s. This debate was couched in terms of the relationship between two sources of L2 knowledge. One source is the native grammar, and how much of it constitutes the initial hypothesis for the L2 grammar. *Full transfer, partial transfer*, and *no transfer* were all proposed. The other possible source of knowledge, relevant for later stages of acquisition beyond the initial state, was access to UG, based on the L2 linguistic experience. Thus, *full access, partial access*, and *no access to UG* were discussed. Theoretical proposals varied in their claims on the two sources of L2 knowledge and how they combined. For example, Full Transfer Full Access (Schwartz and Sprouse 1994, 1996) declares its claims in the very name of the hypothesis. The Minimal Trees Hypothesis (Vainikka and Young Scholten 1994, 1996) proposed transfer of lexical categories but not of functional categories, so partial transfer. This hypothesis, however, still argued for full access to UG. The No Transfer Full Access option was also proposed (Epstein, Flynn, and Martohardjono 1996).[7] Note that all three positions

[7] Although the researchers didn't give this name to their hypothesis.

that diverge on transfer argue for full access, understood as follows: UG makes all parameter values and features available to the learner, as they are needed in accounting for the L2 input and building L2 functional categories. Successful acquisition is in principle possible, based on the L2 linguistic experience, although in certain areas of the grammar where input may be misleading, full convergence is not guaranteed (Schwartz and Sprouse 1996).

The position advocating partial access to UG was represented by the Failed Functional Features Hypothesis (Hawkins and Chan 1997). This hypothesis proposed that although lexical categories such as the VP and its headedness were learnable, functional features not available from the native language cannot be acquired. However, as Meisel (2011: 93) correctly points out, the lines between the partial UG access and the no UG access positions were blurred. If partial access is *only* through the native grammar, then there is no effective direct access to UG, for functional categories and features not instantiated in the native language.

Let us consider the experimental evidence now, with respect to the word order in VP property (OV vs. VO). A common assumption of The Full Transfer Full Access Hypothesis and the Minimal Trees Hypothesis is that learners initially transfer their native word order in the languages they are acquiring. For learners of German (SOV) whose native language is a Romance language (SVO), the expectation is that they will initially transfer SVO and will place the verb (both finite and non-finite forms) before the object. This assumption is supported by findings in Meisel, Clahsen, and Pienemann (1981), where verbs initially appeared in second position. Supporting findings also come from Vainikka and Young-Scholten's work: Korean and Turkish learners of German are observed to prefer verb-final constructions initially, while Italian and Spanish learners tend to use left-headed VPs. The fact that learners use their native VP word order appears to be empirically well established.

How about acquisition of word order more generally speaking? Beyond the order of constituents in the VP, surface word order is regulated by uninterpretable features. One of the most important of such features, known as the EPP[8] feature for historical reasons, controls whether subjects have to move to the TP projection, or whether another constituent or a null subject can check the feature. Also regulated by uninterpretable features is

[8] EPP stands for External Projection Principle, a feature which ensures that every clause must have a subject.

the movement of nominal and other constituents called "scrambling" (think: scrambled eggs). In the languages where scrambling is licit, such constituents can appear in positions different from where they were merged, sometimes optionally, sometimes to satisfy language-specific constraints. We shall look at examples of such feature acquisition next.

But first let us update the predictions. With the focus on features in L2 research, the "access to UG" source of knowledge has to be reformulated as follows: are uninterpretable features, externalized by the functional morphology and demonstrable through correct movement and agreement, acquirable in a second language if they differ in the native and target grammars? If research findings attest to successful acquisition of uninterpretable features so expressed, full access to UG approaches will be supported and representational deficit positions, e.g., the Interpretability Hypothesis, will be in question. If, on the other hand, it is demonstrated that learners cannot attain such knowledge even at advanced levels of proficiency, then full functional representation will be challenged.

I will summarize here the relevant findings of Papadopoulou et al. (2011), a large study investigating knowledge of word order and its interaction with case marking and specificity in the interlanguage of Greek native speakers, beginning and intermediate learners of Turkish. Greek exhibits SVO word order while Turkish is an SOV language so learners have to establish a new word order in their second language. The battery of tests in this study included a cloze test, an online grammaticality judgment task, and a picture selection task. Learners were significantly more accurate on verbal inflection (agreement) than on nominal inflection (case endings), as established in the cloze test. Accuracy percentages for the beginner group were 42% versus 21%, respectively. At the same time, learners got progressively better in supplying correct case endings, with increased proficiency (95% for verbal inflection, 49% for case in the most proficient group).

In the grammaticality judgment task, which utilized only simple transitive sentences, learners viewed each word centered on the screen for 2 seconds. A "?" at the end of the sentence prompted them to record whether they found the sentence acceptable. Response times were measured. The study findings attest to the target SOV word order of Turkish being acquired even by the lowest proficiency group. However, on non-canonical word orders, learners did not do so well. Look at the following examples.

(3) a. gazete-ler-i çocuk oku-du. $O_{ACC}$ SV
newspaper-PL-ACC child read-PAST
'The newspapers were read by some child.'

b. *gazete çocuk oku-du *$O_{ABS}$S V
newspaper child read-PAST
'Newspapers were read by some child.'

In Turkish, specificity and case marking interact with word order. When the subject is generic (referring to some unspecified child, in this case) and the object is specific (known to the speaker), the object is marked for Accusative case and obligatorily appears in sentence-initial position. The acceptable (3a) and the unacceptable (3b) illustrate this. Note that this word order is different from the canonical SOV. It is probably very rare, and it is only allowed with Accusative case-marked objects. Papadopoulou et al. (2011) found that their beginning and intermediate learners had not acquired this word order, although they showed some sensitivity to it. Taken together, the results of this study suggest that the uninterpretable features responsible for the Turkish canonical SOV are acquirable, but intermediate proficiency learners have problems with non-canonical word orders, especially when there is an interaction with case, which is still shaky in their grammar. Thus, this study provides support for accounts such as the Bottleneck Hypothesis and the Feature Reassembly Hypothesis that place lexical learning of the functional lexicon at the heart of acquisition. Interaction between features (in this study, word order and case) obviously increases the complexity of the learning task, and acquisition just takes longer.

Papadopoulou et al.'s (2011) experimental participants were intermediate learners of Turkish. This leaves us with the unanswered question of whether non-canonical word order is acquirable in the longer term. To see one answer to this question, we turn to Hopp's (2005) study. Hopp tested English and Japanese native speakers who were advanced learners of German. He used a contextualized grammaticality judgment task to probe their knowledge of "remnant movement," a complex German construction which moves parts of the embedded clause to sentence-initial position. In order for the reader to appreciate the high complexity of this German word order, part of the tested paradigm appears in examples (4) and (5). The symbol *t* stands for the position where the moved phrase, in square brackets, started.

(4) Remnant topicalization (across-scrambled phrase) across finite clause boundary, acceptable:

[$t_1$ Zu reparieren]$_2$ glaube ich [$t'_2$ hat Peter [den Wagen]$_1$
to repair think I has Peter the car
schon $t_2$ versucht].
already tried
'I think that Peter already tried to repair the car.'

(5) Remnant scrambling across short-scrambled phrase, unacceptable:

* Ich glaube, dass [$t_1$ zu reparieren]$_2$ Peter [den Wagen]$_1$ schon $t_2$
I think that to repair Peter the car already
versucht hat.
tried has
'I think that Peter already tried to repair the car.'

Knowledge of the whole paradigm (allowed and disallowed scrambled sentences) depends on uninterpretable features beyond those responsible for topicalization.[9] In addition, Japanese learners would have an advantage over English native speakers in learning these constructions, since Japanese also allows scrambling. Thus the "scrambling" feature, whatever it is, would be available to them from their native language, while it would be new for the English natives. Hopp's results attest to ultimately successful acquisition, in that all English and Japanese learners robustly repeated the evaluations of the native German speakers. He also uncovered native language influence. Hopp made the case that knowledge of the allowed and disallowed sentences could not have come through classroom instruction or observation of the native input. Since complete knowledge of this paradigm involves rejection of unacceptable constructions that cannot come from astute observation of the input and pattern-noticing, Hopp argued that this is a Poverty of the Stimulus learning situation. The input simply does not contain unacceptable sentences of the sort of (5). The input does not contain unacceptable sentences, period. Furthermore, they look suspiciously similar to the acceptable sentences in (4), and both are pretty complex. Still, advanced learners distinguish between them reliably.

[9] Topicalization is a construction marking old discourse information structure, available in English, recall the discussion in Chapter 6.

In summary, let us discuss the relative merits of the two opposing positions, with respect to word order phenomena. Proponents of representational deficits can take heart from findings such as Papadopoulou et al.'s (2011), because they document lack of successful acquisition of non-canonical word orders. For full functional representation proponents, however, findings such as Hopp's (2005) provide a clinching argument: acquisition of uninterpretable features cannot be *impossible*, if at least one such documented case of successful acquisition exists. It is crucial that successful acquisition involves knowledge of ungrammaticality, which cannot be due to noticing patterns or imitation. However, pattern noticing and imitation are the only ways in which deficit accounts can explain learner success with uninterpretable feature acquisition.

## 8.4 Verb movement

After discussing headedness in the VP and movement of non-verbal constituents in the sentence structure, this section looks at another poster child of UG parameters: verb movement. This is a parameterized language distinction also triggered by uninterpretable features and featuring a cluster of constructions that has been extensively researched in L2 acquisition.

The Verb Movement Parameter studies (White 1990, 1991, and others) provoked a lot of heated discussion in the debate on new parameter value accessibility. At issue is a distinction like the following (Pollock 1989) illustrated in (6), (7), and (8), examples from White (1990):

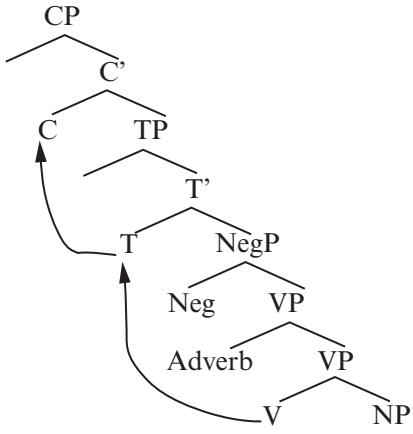
(6) a. Jean embrasse souvent Marie. — French: S–**V**–Adv–O
John kisses often Mary
b. *John kisses often Mary.
c. *Jean souvent embrasse Marie.
John often kisses Mary
d. John often kisses Mary. — English: S–Adv–**V**–O

(7) a. Marie n'aime pas Jean. — French: S–**V**–Neg–O
Mary likes not John
b. *Mary likes not John.
c. Mary does not like John. — English: S–Aux–Neg–**V**–O

(8) a. Aime-t-elle Jean? French: **V**-S-O?
likes-she John
b. *Likes she John?
c. Does she like John? English: Aux-S-**V**-O?

As examples in (6) show, the French verb moves to the left of the adverb *souvent* 'often,' which is argued to mark the edge of the VP. In English, however, the verb stays in VP, as its position to the right of the adverb demonstrates. Examples from negative sentences in (7) illustrate the same fact: the French verb appears to the right of the stable (non-clitic) negation marker *pas,*[10] while in English the positions are reversed. Finally, (8) shows that it is possible (although not obligatory) for the French verb to invert with the subject to create interrogative clauses. This would be the equivalent of (8b), which is of course unattested. To mark a sentence as interrogative, English main verbs need *do*-support (although auxiliary verbs are different in this respect). These three properties make for a beautiful paradigm, don't they? Pollock's linguistic analysis explains all of these examples by postulating that the verb moves out of the VP and up to T and C in French, while it remains in VP, in English.

(9)




[10] French negation is made up of two little words *ne . . . pas*. One of them, *pas*, has a stable position, while the other, *ne*, is a clitic and attaches to the front of the verb for reasons of pronunciation. Thus *ne* moves together with the verb and is often omitted in colloquial French.

As demonstrated in the examples and the tree structure in (9), the Verb Movement Parameter associates three superficially unrelated constructions, united by a common analysis in linguistic theory. That is why this parameter was investigated as another showcase of grammar restructuring: parameters are responsible for clusters of superficially unrelated constructions becoming part of the grammar once the triggering feature of the parameter has been acquired. In this case, movement of the verb over adverbs and negation, as well as knowledge of V-to-T-to-C movement in question formation, were predicted to be correlated (although the putative trigger, rich verbal morphology, was not tested).

In an ambitious and carefully designed study, White and her colleagues (White 1990, 1991, White, Spada, Lightbown, and Ranta 1991) tested francophone adolescents (the average age was 11) on adverb placement before and after a teaching intervention. During a two-week-long period, one experimental group was exposed to instruction on adverb placement, while the second experimental group was taught question formation. A post-test and a delayed post-test on adverb placement were then administered. Parameter theory (at the time) predicted that instruction on one property in a cluster associated with lack of verb movement in English would generalize to the other property in the cluster.

The francophone adolescents' knowledge of adverb placement was probed with three different tasks: a grammaticality judgment task, a preference task where acceptable and unacceptable sentences were shown side by side, and a word order manipulation task where learners had to arrange words written on cards into acceptable combinations. Recall that the prediction would be that both the question group and the adverb group should improve on adverbs if question formation and adverb placement are both reflexes of the verb-raising parameter. The results were devastating for parameter theory. While accuracy on adverb placement increased dramatically in the adverb group, there was no change of behavior in the question group. Even the gains of the adverb group proved to be short-lived: as White (1991) reports, after exactly one year post-intervention, the children's accuracy on adverbs had reverted to the pre-test values. In addition, Trahey and White (1993) exposed another group of francophone adolescents to a flood of Subject–Adverb–Verb–Object naturalistic examples, without any focus on form. The results revealed that while the adolescents acquired the grammaticality of the English adverb placement, they did not preempt the French placement. In other words, they ended up

with a grammar containing optional S-V-A-O and S-A-V-O. The researchers argued that a flood of positive input (without negative evidence) may not be sufficient to restructure the grammar, in some cases. Possible explanations of these results touched on the issue of quality and quantity of the (unambiguous) input available to learners, with respect to adverb placement, as well as the length of the teaching interventions. Whatever the explanation, such results would obviously support representational deficit accounts.

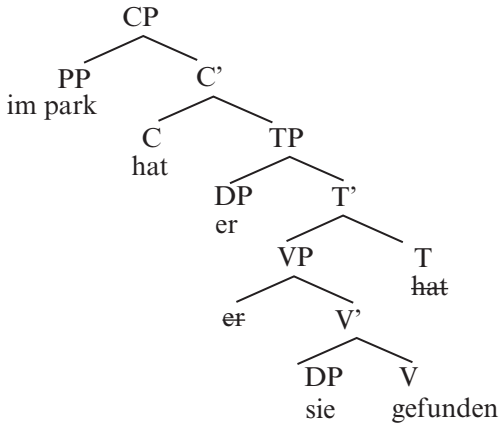
Related to verb movement is the so-called Verb-Second (V2) parameter. In German and other Germanic languages, an uninterpretable feature requires that the verb is always second in the clause. If another constituent other than the subject moves to clause-initial position as in example (10) below, the (auxiliary) verb has to follow it and so comes to be pronounced before the subject.

(10) a. Er hat sie im Park gefunden (Meisel 2011: 32)
he had her in the park found
'He found her in the park.'

b. Im park hat er sie gefunden
in the park had he her found
'He found her in the park.'

The structure illustrating this movement will be along the lines of (11) (leaving numerous details aside), where the copies of the moved constituents are crossed out.

(11)



In languages with the "on" value of the V2 parameter (German), the verb moves to C, while in languages with the "off" value (English), the verb stays in T. I shall use this parameter to illustrate an influential recent account of child language acquisition that unifies parameter setting with general learning mechanisms based on frequency of relevant evidence in the input, Yang's Variational Learning Model (Yang 2002, 2004, 2010). The main idea is that a parameter supported with abundant and unambiguous evidence in the input will be learned earlier than a parameter for which the supporting evidence is scarce. More concretely, this learning model considers the frequency of unambiguous input (what Yang calls a parameter "signature") in proportion to all the input relevant to that parameter. An example of a parameter set very early is that of *wh*-movement in English (which we shall discuss in the next section). Supporting evidence for this parameter amounts to about 25% of all child-directed input.[11] On the other hand, Yang gives the V2 parameter in German as an example of a late acquired parameter. It is unambiguously evidenced only by sentences where the object or some other constituent is in the sentence-initial position and the verb precedes the subject. Taking into account all the child-directed relevant sentences, such evidence comes in only 1.2% of them, which results in a relatively late acquisition at the 36th–38th month (Clahsen 1986).

This account can be extended to second language acquisition. If Yang's metric is on the right track for the establishment of the V2 parameter value in the second language, we should find experimental evidence for late V2 acquisition in adult learners as well. Such evidence exists. Wahlstrom McKay (2001) tested oral production of beginning to intermediate instructed learners of German (3rd and 4th semester of German classes). She found that students violated V2 in 49.3% of obligatory contexts. However, Conradie (2006), Prévost (1999), and Tran (2005) present evidence for successful acquisition of the V2 rule. Conradie used a battery of tests to investigate knowledge of V2 in South African English-speaking learners of Afrikaans and argued that parameter resetting in their grammars is complete by the time of testing. Prévost (1999) tested Spanish-native intermediate learners of German on a variety of properties, including V2. His learners obtained 100% accuracy for verb placement on the production task. Prévost showed that these learners were also accurate in rejecting V3

[11] Stromswold (1995); see also Yang (2004: 455: Table 1).

structures (possible in Spanish), and they only rejected correct V2 utterances where an argument was fronted (topicalized) without sufficient context. Finally, Tran's (2005) study tested English-native children (aged 9–13) learning German in an instructional setting. Her experimental data consist of oral productions of fronted (topicalized) time adverbials and direct objects. Her results indicate that the high proficiency learners make very few errors with the V2 placement of the finite verb. The results of all four studies mentioned above point to initial difficulties and subsequent successful acquisition of the V2 rule.

Recently, the V2 parameter has been used as an illustration of another proposal on how language acquisition unfolds: the Multiple Grammars hypothesis by Amaral and Roeper (2014). The authors argue that it is *in principle* possible to maintain incompatible subgrammars in human language. This state of affairs can explain dialectal variation in adult grammars, diachronic language change, variation, and optionality in first and second language acquisition. For example, while German has a V2 rule active in the whole of the grammar, that is, a generalized V2 rule, English has a lexically limited V2 rule. Subject–auxiliary inversion is allowed after the negative polarity adverbs *never, rarely*, etc., for emphasis. Of course, the non-emphatic variant in (12b) is also an option.

(12) a. Never/rarely have I seen such a beautiful garden!
b. I have never/rarely seen such a beautiful garden!

Note how the V2 parameter is not deterministic any more, and is relegated to a V2 rule. Amaral and Roeper argue that the input from any language is usually ambiguous due to such lexically triggered exceptions. As a result, multiple grammatical rules coexist in the human mind. The incompatible rules are distinguished by diacritics, or little notes "attached" to the rule to specify environments in which they are manifested. To take another example, an adult English speaker knows that *it seems cold* and *seems cold* are both colloquially possible in English, although the latter is the signature of a null subject grammar while English is not a null-subject language. *Seems cold* is lexically restricted, then, to main clauses and to diary and colloquial registers. Rules are kept separate by the diacritic and accessed independently: the English speaker knows that inversion after any old adverb is not appropriate, see (13a):

(13) a. *Occasionally have I seen him smoke.
b. Occasionally, I have seen him smoke.

While the linguistic aspect of this hypothesis is simple and satisfying, the psycholinguistic side is not sufficiently developed yet. That is, it is not very clear how the mind keeps the multiple grammatical rules separate in language use so that massive optionality and variation do not occur.

To recap this section, here we discussed a series of experiments on the Verb Movement Parameter in French–English interlanguage, whose general findings do not support parameter restructuring in a cluster-engaging fashion. On the other hand, we also mentioned several studies documenting successful acquisition of the V2 rule in German. Yang's Variational Learning Hypothesis is in a position to explain why V2 is a difficult rule to acquire, while the Multiple Grammars approach proposes that incompatible rules like generalized V2 (in German) and lexically restricted V2 (in English) can co-exist in the mind of a German–English bilingual.

## 8.5 *Wh*-movement

In this last section, we will use the acquisition of *wh*-movement constraints (a.k.a. island constraints) to discuss the issue of Poverty of the Stimulus in the second language. We already alluded to this issue in discussing German scrambling in Hopp's (2005) work. The argument in a nutshell is as follows. Acquiring the fact that some construction is ungrammatical (also known as preempting) constitutes a learnability problem because the relevant information is not available in the positive input that the language acquirer is exposed to. Superficial observation of grammatical *wh*-movement may lead to the wrong generalization that *wh*-movement is essentially free of constraints. Thus, demonstrating knowledge of unavailability of certain constructions by rejecting them in experimental conditions attests to innate linguistic knowledge that could not have come from the observation of the input or simple analogy.

But let us first look at what there is to acquire. The big initial divide is between languages that allow their question words to remain where they were merged, in argument positions, versus languages that move their question words to the beginning of the clause, to the CP projection. Chinese is what linguists call a *wh-in-situ* language:

(14) a. Hufei mai-le shenme (Mandarin Chinese)
Hufei buy-PERF what
'What did Hufei buy?'
b. John bought WHAT? (echo-question)
c. *John bought what? (regular question seeking information)
d. What did John buy?

Both Mandarin and English are SVO languages, but English cannot allow the question word for the object to remain after the verb. (14b) is acceptable as an echo question with emphasis on the question word. These questions are used when we have not heard properly. However, (14c) is ungrammatical as a regular question seeking information, while the correct way to ask for the object is (14d). The *wh*-movement parameter captures this linguistic distinction.

Now, as we have already seen in this textbook, the movement of the *wh*-word to the top of the sentence, in languages that require such movement, is constrained in a complicated way. The examples below are based on Belikova and White (2009), and they illustrate the cases when *wh*-movement in English is allowed and when it is prohibited. The ungrammatical constructions are called islands, as a metaphor for a spot from which one cannot escape (if we disregard boats and ships). The underline stands for the original position of the *wh*-phrase, also known as "the gap."

(15) a. This girl danced with Mark.
b. Who did this girl dance with ____?

(16) a. You said that this girl danced with Mark.
b. Who did you say that this girl danced with ____?

(17) a. You wondered whether this girl danced with Mark.
b. *Who did you wonder whether this girl danced with ____?
(wh-island)

(18) a. You spread a rumor that this girl danced with Mark.
b. *Who did you spread a rumor that this girl danced with ____?
(complex NP island)

(19) a. You met a girl that danced with Mark.
b. *Who did you meet a girl that danced with ____?
Relative clause island

(20) a. You met this girl after she danced with Mark.
b. *Who did you meet this girl after she danced with ____?
Adjunct island

Chomsky (1973) proposed that the disparate constraints illustrated in the examples above have the same underlying explanation, having to do with the necessity of the *wh*-phrase to take short steps on its way to the top of the sentence, but not longer jumps. This unifying principle was called the Subjacency condition: a constituent may not move over more than one "bounding node" at a time. The bounding nodes could differ across languages (Rizzi 1982) but in English NP and IP (what is now TP) were proposed to be bounding nodes. We introduced this constraint in Chapter 2.

In their classical work on the Critical Period Hypothesis, Johnson and Newport (1991) focused specifically on the acquisition of Subjacency. They tested Chinese native speakers who had arrived in the US between the ages of 18 and 38, on NP complements as in (18), relative clauses as in (19), and *wh*-islands (17). It is no wonder that the Chinese native speakers did not perform as well as the English native speakers on these complex sentences: they are understood much better if context is provided. However, the learners distinguished reliably between the acceptable and unacceptable sentences, demonstrating that their judgments are not indiscriminate (though they may not be completely nativelike). We shall come to this issue again.

A very important study for this particular topic (*wh*-movement) in SLA was Gita Martohardjono's (1993) PhD dissertation. Just as Johnson and Newport, she tested native speakers of Indonesian, Italian, and Chinese, all languages argued not to obey Subjacency in the same way that English does. Martohardjono tested rejection rates of ungrammatical constructions of two types: extractions of subjects and objects of relative clauses. By that time, the theory had identified that these two extractions differed in acceptability. Sentences such as (21a) still violated Subjacency, but did not lead to strong ungrammaticality: these were called weak violations. They should contrast in the reader's judgments with strongly unacceptable sentences as in (21b), which violate Subjacency and another linguistic principle, the Empty Category Principle. The latter were considered to be strong violations.

(21) a. ??Which car did John spread [$_{NP}$ the rumor [$_{CP}$ that the neighbor stole _____?]]
b. *Which neighbor did John spread [$_{NP}$ the rumor [$_{CP}$ that _____ stole a car?]]

**Table 8.1** Rejection rates of strong and weak violations, in percent (based on Martohardjono 1993)

| Native language | Strong violations | Weak violations |
|---|---|---|
| English | 99 | 78 |
| Indonesian | 87 | 42 |
| Chinese | 76 | 38 |

The distinction between the acceptability of the two types of sentences as in (21a) and (21b) is clearly present in the judgments of the native English speakers, as can be seen in Table 8.1 by their 99% rejection rate for strong violations versus their considerably lower 78% rejection rate for weak violations. That is why the example in (21a) is marked with two question marks only, while (21b) is rated completely ungrammatical with an asterisk. This difference in acceptability constitutes a Poverty of the Stimulus situation for learners because neither type of sentence appears in the input. It is remarkable, then, that the same pattern of acceptability demonstrated by the native controls is exhibited by the learners as well. As the ratings of the learners on the strong violations are significantly above chance, Martohardjono argued that these learners have been successful in acquiring *wh*-movement. It is important to emphasize that the successful acquisition here differentiates between two relatively complex and unacceptable types of sentence, which the learners have never heard pronounced, which they cannot transfer from the native language, and they have not been taught to reject. Their behavior, then, is suggestive of access to universal grammatical principles and parameter values.

We should mention two more studies attesting successful acquisition of *wh*-movement, both looking at Chinese native speakers acquiring English. Li's (1998) study tested 180 adult learners and documented nativelike judgments. White and Juffs (1998) compared the performance of two groups of Chinese learners: one group that had never left China, and hence consisted of foreign language learners, and another group that was studying in Canada at the time, having been exposed to naturalistic English input. Not only were the learners' judgments highly accurate, but the two groups differing in type of exposure to English were also not statistically different.

**Teaching relevance**

When we are speaking of successful acquisition of *wh*-movement and other properties, we are mentioning mostly research results from groups of participants. Group results may hide individual differences, of course. While it is clearly the case that some participants in those studies have acquired the constraints on movement of *wh*-phrases in English, acquisition is not uniform, and not guaranteed. For some test participants, an L1-based analysis of some constructions will continue to predominate. For all learners, though, rich input in natural situations provides all they need in order to restructure their native grammar.

We just reviewed some studies arguing that acquisition of *wh*-movement by L2-ers can be successful. How would proponents of the Full Functional Representation position explain why learners are never as accurate as the native speakers on such constructions? They don't have to. What L2 acquisition studies are trying to show is that learners have established a contrast in their mental grammar between acceptable and unacceptable structures. That's what knowledge of language really means. Learners don't have to be statistically indistinguishable from native speakers in all respects. Bley-Vroman (1983) cautioned against comparing natives and learners directly. It would be a Comparative Fallacy to do so, he argued. It is a welcome result if learners perform as well as the natives in some study, but that need not be the case for successful acquisition to be established. The more complex the linguistic construction, the more variation in learner performance is to be expected, related to individual differences dependent on processing resources. We will talk a lot more about individual variation in processing in Chapter 12. Suffice it to say here that more variation is expected in L2 processing as compared to native language processing, because there are two languages at play in the mind.

On the other side of this debate, taking the opposite view, is the Representational Deficit position. Recall that this view postulates the impossibility of acquiring uninterpretable features and explains cases of successful acquisition as only seemingly successful, or superficial. We shall exemplify supporting evidence for this view from studies of resumptive pronouns. Hawkins and Chan (1997) tested the acquisition of restrictive relative clauses by Chinese and French speakers. French and English relative clauses have a similar analysis, while Chinese relative clauses arguably do not

involve *wh*-movement and allow resumptive pronouns. Compare the sentences in (21).

(22)

a. The girl [$_{CP}$ who [$_{TP}$ I like _____] is here.]

b. *This is the boy [$_{CP}$ who [ $_{TP}$ Mary described [$_{NP}$ the way [_____that Bill attacked_____.]]]

The sentence in (22a) is acceptable because the *wh*-word *who* has made a small manageable jump to the beginning of the relative clause CP. The sentence in (22b) violates Subjacency because the second step involves jumping over two bounding nodes (NP and TP). Chinese relative clauses do not exhibit movement of the *wh*-phrase, and they allow a pronoun in the original gap, which would sound something like (23a) in English, if it were allowed:

(23) a. *This is the girl I gave a present to **her**.
b. [$_{CP}$ [$_{TP}$ Wo song liwu gei **ta** $_{TP}$] de $_{CP}$] neige nühai
I gave present to her "that" the girl
'This is the girl I gave a present to.'

*Ta* in the Chinese relative clause in (23b) is the equivalent resumptive pronoun. Hawkins and Chan argued that Chinese learners of English would not acquire the correct way of forming relative clauses in English, which does not allow resumptive pronouns. We have to mention that the French learners of English behaved as expected on all the test sentences, although they reached native levels only at advanced proficiency. The Chinese learners, though, performed differently, see Table 8.2.

The arrows in this table point to the direction of accuracy improvement. While it seems that the Chinese learners are acquiring the ungrammaticality

**Table 8.2** Accuracy rates by Chinese learners of English on restrictive relative clause violations, in percent (based on Hawkins and Chan 1997)

| | **Correct rejection of resumptive pronoun** | **Correct rejection of *wh* - island** | **Correct rejection of complex NP** |
|---|---|---|---|
| Chinese elementary | 38 ↓ | 63 ↑ | 71 ↑ |
| Chinese intermediate | 55 | 54 | 61 |
| Chinese advanced | 90 ↓ | 41 ↑ | 38 ↑ |
| English natives | 98 | 98 | 85 |

of resumptive pronouns, their correct rejections of Subjacency violations is slipping down, as the arrows show. Hawkins and Chan suggest that the elementary learners are rejecting the ungrammatical *wh*-islands and complex NPs at rates higher than the advanced learners because they do not see in them the resumptive pronouns they are looking for. The Chinese advanced learners, on the other hand, perform better on rejecting resumptive pronouns, which suggests that they are acquiring the surface form of English restrictive relative clauses. However, they perform much worse on detecting Subjacency violations, which points to an incorrect analysis of the structure without *wh*-movement. Hawkins and Chan's careful experimental study shows how important it is to keep in mind that if a learner group is accurate on an experimental task, this does not necessarily mean that the learners have the same analysis as the native speakers.

Continuing with the acquisition of resumptive pronouns, we will look at two further studies, one a partial replication of the other. Tsimpli and Dimitrakopoulou (2007) looked at Greek learners of English. Since Greek optionally allows resumptive clitics, the authors hypothesized that it would be impossible for Greek learners to preempt resumptive pronouns in their mental grammars for English. In addition, the authors hypothesized that various other interpretable features, such as animacy, may be able to aid the learners in learning superficial structure. Here are some examples from the acceptability judgment task:

(24) Grammatical and ungrammatical subject extraction, with and without complementizer *that*:
   a. *Who do you think that Ø met Katerina?
   b. *Who do you think that he met Katerina?
   c. Who do you think met Katerina?
   c. What do people think Ø makes American cinema popular?
   d. *What do people think it makes American cinema popular?

(25) Grammatical and ungrammatical object extraction, animate and inanimate *wh*-phrase:
   a. What did you say that Maria forgot Ø when she was leaving home?
   b. *What did you say that Maria forgot it when she was leaving home?
   c. Who do you think that Susan would marry Ø?
   d. *Who do you think that Susan would marry him?

**Table 8.3** Percentage of correct rejection of ungrammatical sentences in T&D's experiment

| | **Subject (–*that*)** | **Subject (+*that*)** | **Object** |
|---|---|---|---|
| Intermediate | 63.9 | 59.6 | 59.5 |
| Advanced | 68.4 | 66.5 | 78.6 |
| Native speakers | 96.7 | 95.5 | 96.7 |

As the accuracy scores in Table 8.3 suggest, even advanced learners of English were far from accurate on rejecting sentences with resumptive pronouns, although they were slightly more accurate on object versus subject extractions. Tsimpli and Dimitrakopoulou concluded that "(un)interpretable formal features . . . cause learnability problems even at advanced stages of acquisition" (2007: 237).

Leal Méndez and Slabakova (2014) set out to replicate this study with Spanish native speakers. Why was a replication deemed necessary? Spanish, like Greek, makes resumptive clitics available in informal registers. The researchers divided their English learners into those who accepted resumptives in their native Spanish (the +R group), and those who did not (the –R group). The hypothesis was that the group that did not like resumptives in the L1 would have an easier time with resumptives in the L2. Leal Méndez and Slabakova used the same test sentences as Tsimpli and Dimitrakopoulou, but embedded in a context and pronounced in a natural way by a native speaker (Table 8.4; see also Exercise 8.1).

The –R advanced group is on average over 10% more accurate than the **+**R advanced group, suggesting that individual preferences against resumptives in their native Spanish do have an effect in the L2 English. That is, learners may be transferring an individual (processing) tolerance to resumptives from their native language.[12] Importantly, however, both **+**R and –R advanced learners have established a syntactic, grammatical contrast in

[12] There is a tension between processing and grammar in the usage of resumptive pronouns. While they are generally not grammatical in English, sometimes they alleviate Subjacency violations. Ross (1967) is the classical treatment. Example (i) is a spontaneously produced example while examples like (ii) were elicited experimentally by Ferreira and Swets (2005).

(i) We are afraid of things that we don't know what **they** are.
(ii) This is the donkey that I don't know where **it** lives.

**Table 8.4** Percentage of correct rejection of ungrammatical sentences in LM&S (in press)

| | **Subject (−*that*)** | **Subject (+*that*)** | **Object** |
|---|---|---|---|
| −R Intermediate | 66 | 65 | 64 |
| +R Intermediate | 70 | 65 | 70 |
| −R Advanced | 97 | 95 | 96 |
| +R Advanced | 84 | 84 | 79 |
| Native speakers | 96 | 97 | 95 |

their grammar between ungrammatical sentences with resumptives and grammatical sentences with gaps. In addition, factors such as animacy did not seem to have much effect on the judgments. The authors argued that their results do not support a representational deficit account. Findings on processing resumptives in English by Najdi Arabic speakers (Aldwayan, Fiorentino, and Gabriele 2010) also go against a representational deficit. Research on this topic is very much continuing. In the future, proponents on both sides of the debate will have to think of innovative research designs to tease apart underlying competence from superficially attained, or indirectly acquired, competence.

## 8.6 Conclusion

We started this chapter with an overview of the notion of linguistic parameter through the fifty-year-long history of the generative research enterprise. Changes in the theory inevitably affect the debate between Representational Deficit accounts and Full Functional Representation accounts. In a reconsideration of theories, Belikova and White (2009) argued that a great deal of the research findings on differential sensitivity to weak and strong *wh*-movement violations, which were previously argued to be acquired despite

However, the very same subjects that produced sentences like (i) and (ii) rejected them in the acceptability task. It has been long acknowledged that speakers of many languages have prescriptive attitudes towards resumptive pronouns. However, sentences with resumptives in English that do not violate Subjacency are still unacceptable:

(iii) *I saw the boy that Mary loves him.

Poverty of the Stimulus, turned out to be based in universal grammatical constraints. The outcome of this process of reconceptualization of parameters is that it now appears to be impossible to distinguish between the effects of the L1 and of UG. The L2 acquisition process, however, remains UG-constrained as much as ever. All languages share a minimal UG accompanied by cognition-based functional hierarchies and processing efficiency constraints. However, the parametric differences between Chinese and English *wh*-questions that we discussed at the outset of Section 8.5 are still very much the same. Formal features reflected in the functional lexicon and their configurations are all that needs to be acquired. As Belikova and White point out, it is no longer even clear whether it is *possible* for the L1 and L2 acquisition processes to be fundamentally different (Belikova and White 2009: 219).

## 8.7 Exercises

Exercise 8.1. In this chapter, we discussed two studies on the L2 acquisition of resumptive pronouns, Tsimpli and Dimitrakopoulou (2007) and Leal Méndez and Slabakova (2014). Find and download the original articles from the respective journal sites. Here is your task:

1. Here is a subset of the test sentences given in the Appendix of Tsimpli and Dimitrakopoulou. On one day, go through the first list and record your judgments based on a Yes or No decision. On another day, go through the sentences again (see end of chapter) and record your judgments using the scale. Is there a difference in your performance? Discuss the methodological matter of using Likert scales versus categorical choices. Does the type of construction matter for this choice, in other words, are scales better for some constructions, and Yes–No answers for others?

Record your judgment of the acceptability of the following sentences. If you find the sentence acceptable, choose Yes. If you find the sentence sounds unacceptable, choose No.

| | | |
|---|---|---|
| 1. What did you say that Maria forgot it when she was leaving home? | Yes | No |
| 2. What do teachers insist that pupils should read before the exams? | Yes | No |

| | | | |
|---|---|---|---|
| 3. | Who does Peter think that Mary should meet? | Yes | No |
| 4. | What has John decided that he should buy for Christmas? | Yes | No |
| 5. | Who do you think that he met Katerina? | Yes | No |
| 6. | Who have you suggested that he should not resign? | Yes | No |
| 7. | What do you think that it makes the book very interesting? | Yes | No |
| 8. | Who did the students think he would be the best president? | Yes | No |
| 9. | Who do you think that Susan would marry him? | Yes | No |
| 10. | What do people think it makes American cinema popular? | Yes | No |
| 11. | Who did Mary say he wanted to study abroad? | Yes | No |
| 12. | Who does Kathryn think is a good painter? | Yes | No |
| 13. | Which politician did Jane say he is very honest? | Yes | No |
| 14. | Who did John say kissed Susan? | Yes | No |
| 15. | What did John suggest should be announced at the meeting? | Yes | No |
| 16. | What have you insisted that student should read it before the exam? | No | Yes |

Leal Méndez and Slabakova presented the same sentences (the list above is a subset), embedded under contexts such as this one below. Note that the *wh*-word is different from the ones above.

*Gabriel and Maria were chatting at the Java House. Maria said that Peter liked that new book "Going Rogue" so much that he memorized every word. Gabriel corrected her and said that "Going Wild" was the book Peter had read so carefully. To resolve the argument, Maria called Peter's best friend Vladimir and asked him:*

*Which book do you remember that Peter read it carefully?*

Do you think that the context makes a difference for the acceptability of the questions? Why, or why not? Create several contexts of your own for some of the sentences in the list.

Exercise 8.2. The following series of questions will be based on Grüter (2006): "Another take on the L2 initial state: Evidence from comprehension in L2 German," Language Acquisition 13(4), 287–317. It is a study that addresses the Minimal Trees Hypothesis discussed in this chapter and brings evidence from comprehension of German questions.

Answer the questions in sequence. This is a long exercise, but at this point in the textbook, you are prepared to tackle it.

**Question 1.** What does the Minimal Trees Hypothesis propose for the initial stages of L2A? What is the principled linguistic distinction that the researchers use?

**Question 2.** If lexical categories transfer from the native language and functional categories don't, what are some predictions for linguistic behavior at the very first stages? Will the learners at these stages be able to produce negative sentences? Sentences with past tense verbs? Will they be able to produce questions, considering that they only operate with one VP, and no functional category (or a very restricted one) above it?

**Question 3.** There is a growing skepticism as to whether production data are fully indicative of learners' knowledge. As pointed out by White (2003): "Indeed, to investigate the possibility that there might be a stage prior to the emergence of L2 speech in which functional categories are lacking, we need methodologies that do not rely on production data." Grüter (2005/6) is the answer to that skepticism. She set out to devise a comprehension experiment to address the L2 initial state. But before we discuss the study, what is the underlying assumption that makes it possible to use comprehension and production data to check knowledge of functional categories?

**Question 4**. The study takes advantage of the ambiguity of some German questions: with feminine or neuter nominals, the questions in (1) can be interpreted as either subject or object questions.

(1) a. Was beisst die Katze?
what bite-3SG the cat
'What is biting the cat?' (= subject question)
OR 'What is the cat biting?' (= object question)

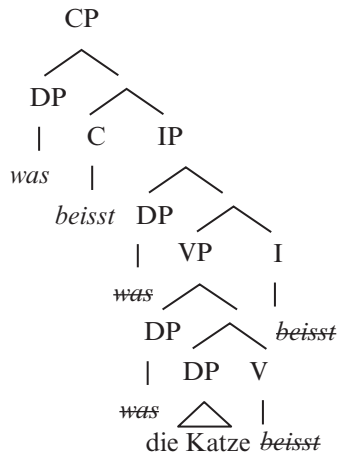
b. Was hat die Katze gebissen?
what have-3SG the cat bitten
'What has bitten the cat?' (= subject question)
OR 'What has the cat bitten?' (= object question)

Here are the two possible analyses for the sentence in (1a). Discuss them and show how the ambiguity arises. Then provide the structures for the sentence in (1b). HINT: the tree structures will be roughly the same, copy them and try to fit the words in the slots. Note: Grüter's structure has two VPs to

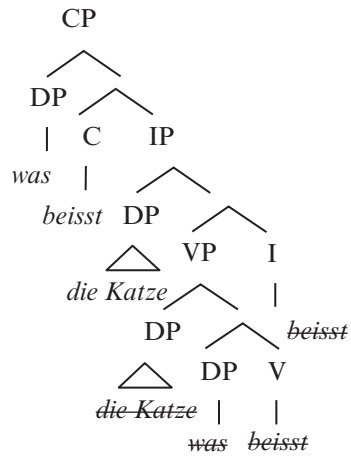
accommodate the auxiliary verb but you don't have to. Note also that the intermediate projections are not shown (c′, etc.).

(2)

a. Subject question
What is biting the cat?




b. Object question
What is the cat biting?

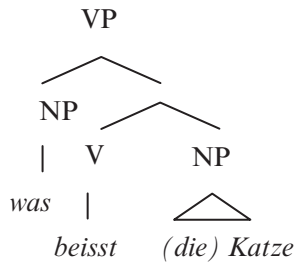



**Question 5**. We already discussed the basic structure of English and German sentences, see (10) and (11) above. If English learners of German transfer all the L1 functional categories into their initial L2 grammars, as the Full Transfer Full Access hypothesis (FTFA) would have it, draw their initial interlanguage sentence structure.

**Question 6.** If on the other hand, there are no functional categories in the initial stages, and the VP is transferred from the native language, draw these same learners' sentence structure.

**Question 7**. Grüter provides the tree showing how a string such as *Was beisst die Katze* would be analyzed according to the Minimal Trees Hypothesis (MT).

(3)

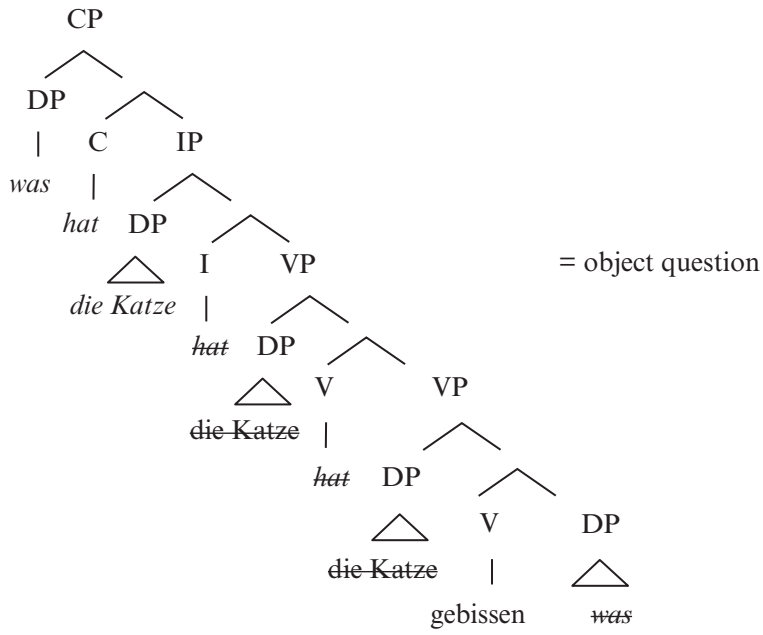



= subject question

Provide the tree for the FTFA analysis. Is a subject or an object interpretation possible? Is an ambiguous interpretation possible?

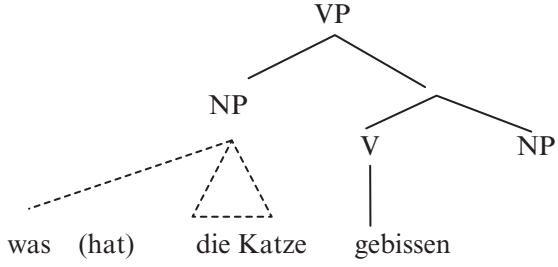
**Question 8**. The analysis of the sentence in (1b) *Was hat die Katze gebissen?* under FTFA assumptions is provided below:

(4)




The verb-final structure is difficult to accommodate under the MT analysis of the initial state, see below.

(5)




Based on those structures, formulate clear predictions about learner behavior. Fill in the blanks:

According to FTFA, the present tense structure will be interpreted as a _____ question.
According to MT, the present tense structure will be interpreted as a _____ question.
According to FTFA, the perfect tense structure will be interpreted as a _____ question.
According to MT, the perfect tense structure will be interpreted as a _____ question.

**Question 9.** Grüter made a special effort to ascertain that the learners were at the absolute initial state of their German interlanguage. What kind of data would give us certainty that they are?
Here is what the test participants had to do. They saw the picture in Figure 8.1, followed by some questions like the one below it. They were tested one at a time, face-to-face with the researcher.

(6) Was jagt das Kamel?
what chase-3SG the camel
'What is chasing the camel?' / 'What is the camel chasing?'

**Question 10.** Figures 8.2 and 8.3 present the frequencies of the learner and native choices. Since the options were two animals (corresponding to a subject and an object interpretation), both or neither, the percentage choices add up to 100. Do all the native speakers realize the ambiguity of the

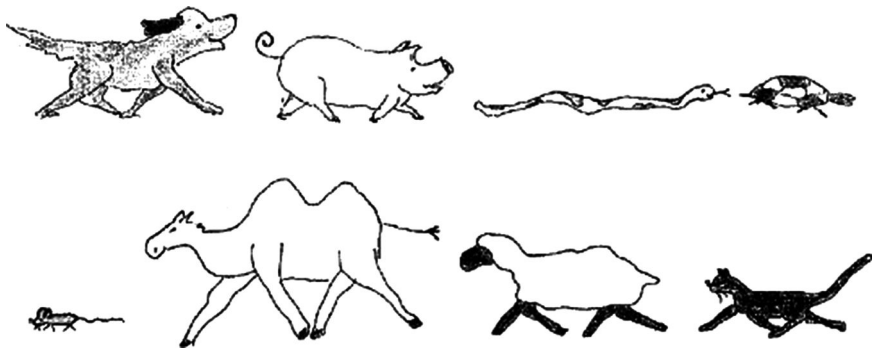
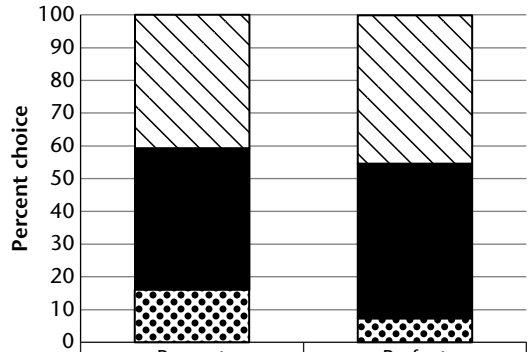
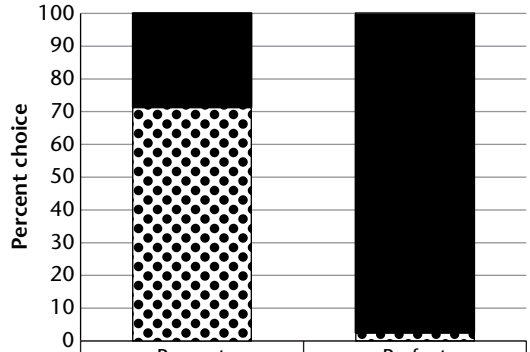


**Figure 8.1** Visual stimuli for the interpretation task, from Grüter (2006)
Reproduced with permission from Taylor and Francis




| | Present | Perfect |
|---|---|---|
| ☐Neither | 0 | 0 |
| ▧Both | 40.7 | 45.3 |
| ■Object only | 43.3 | 47.3 |
| ⊡Subject only | 16 | 7.3 |

**Figure 8.2** Interpretation choices of native speakers, from Grüter (2006)




| | Present | Perfect |
|---|---|---|
| ☐Neither | 0 | 0.6 |
| ▧Both | 0 | 0 |
| ■Object only | 28.8 | 97.1 |
| ⊡Subject only | 71.2 | 2.4 |

**Figure 8.3** Interpretation choices of learners, from Grüter (2006)

questions? Is there a qualitative difference between the natives' choices for the present and the perfect questions?

How about the learners? Is there a qualitative difference between their choices on the two types of questions? Which is the most common interpretation of the present question? Which is the most common interpretation of the perfect question? Which model's predictions, FTFA's or MT's, are supported by these data? Why? Be specific.

Bonus points: What is going on in the mind of the learners (28.8%) who chose only the object interpretation of *Was beisst die Katze?* Which model can accommodate these answers?

Exercise 8.1 (reprise): On a different day, record your judgment of the acceptability of the following sentences. If you find the sentence fully acceptable, choose +2. If you find the sentence less than fully acceptable, choose +1. If, on the other hand, the sentence sounds unacceptable, choose −2. Slightly less unacceptable gets −1. If you cannot offer a judgment, circle "IDK" ("I don't know").

| | | | | | |
|---|---|---|---|---|---|
| 1. What did you say that Maria forgot it when she was leaving home? | –2 | –1 | 1 | 2 | IDK |
| 2. What do teachers insist that pupils should read before the exams? | –2 | –1 | 1 | 2 | IDK |
| 3. Who does Peter think that Mary should meet? | –2 | –1 | 1 | 2 | IDK |
| 4. What has John decided that he should buy for Christmas? | –2 | –1 | 1 | 2 | IDK |
| 5. Who do you think that he met Katerina? | –2 | –1 | 1 | 2 | IDK |
| 6. Who have you suggested that he should not resign? | –2 | –1 | 1 | 2 | IDK |
| 7. What do you think that it makes the book very interesting? | –2 | –1 | 1 | 2 | IDK |
| 8. Who did the students think he would be the best president? | –2 | –1 | 1 | 2 | IDK |
| 9. Who do you think that Susan would marry him? | –2 | –1 | 1 | 2 | IDK |
| 10. What do people think it makes American cinema popular? | –2 | –1 | 1 | 2 | IDK |
| 11. Who did Mary say he wanted to study abroad? | –2 | –1 | 1 | 2 | IDK |

| | | | | | |
|---|---|---|---|---|---|
| 12. Who does Kathryn think is a good painter? | –2 | –1 | 1 | 2 | IDK |
| 13. Which politician did Jane say he is very honest? | –2 | –1 | 1 | 2 | IDK |
| 14. Who did John say kissed Susan? | –2 | –1 | 1 | 2 | IDK |
| 15. What did John suggest should be announced at the meeting? | –2 | –1 | 1 | 2 | IDK |
| 16. What have you insisted that student should read it before the exam? | –2 | –1 | 1 | 2 | IDK |