

The Acquisition of Syntax: An overview and a case study of L2 Japanese

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Abstract

Is it possible to reset our intuitions about sentence structure when learning a new language? Many differences between languages, such as word order differences, are thought to arise from different parameter settings. The questions of whether, to what extent, and how learners of new languages can acquire the parameter settings of the new language are widely debated, with many competing theories advanced. After providing an overview of the Principles and Parameters framework and its significance in the study of second language acquisition, I outline a Minimalist view of parameters and word order variations. I then turn to theories of second language acquisition, summarizing and discussing competing theories about the initial state, the process of parameter resetting (or lack thereof), and the final state. In the end I argue for a theory that incorporates transfer from the first language and the possibility of parameter resetting in some form. However, the precise process by which parameter resetting may take place in second language acquisition, and the differences from the process of first language acquisition, remain unclear; no falsifiable theory fits all of the data convincingly. Finally, I present and analyze my own data collected from students of Japanese at Swarthmore College. I argue that my data shows evidence of first language transfer, as well as the influence of non-linguistic cognitive strategies in second language learning. I suggest some possibilities for future research to begin to address some of the remaining questions. In deepening our understanding of the process of learning new languages, we can both add to and refine our theories of syntax and neurolinguistics, and better equip ourselves to teach language effectively.

0. Introduction

Imagine a year-old child. Since birth she's been surrounded by sounds—laughter, music, dishes clinking together, grunts, coos, sighs, doors opening and closing, dogs barking, and yes, human speech. Perhaps she's been spoken to mostly in “baby-talk;” perhaps no one has spoken to her much, or at all. She's heard speech between adults and older children, speech characterized often by unfinished thoughts, repeated words, and hesitation, as most of our natural conversation is. Yet somehow, mysteriously, she's

beginning to make sense of the sounds around her, to separate words from other words, and within a year or two, she will be able not only to mimic the speech she hears, but to construct correct sentences that she's never heard before. This process goes on around the world, with every known human language, on approximately the same schedule, and, excepting pathological cases, with the same result: each child comes to know her language, with all of its intricate structures and nuanced judgments. (See for example Baker 1979 for discussion of first language acquisition.)

Now more than ever, with increased movement and interaction across the whole world, many people find themselves needing or wanting to recreate this natural process that was so unconscious when they were a baby: to learn a new language. Yet language classes are so often characterized by drilled grammar rules, lists of verb conjugations, and constant error correction, all alien to first language acquisition. Immersion programs, at the opposite extreme, seek to mimic the environment in which native languages are learned, presumably with the assumption that a new language can be learned in a similarly instinctive and unconscious way (see, for example, R. Ellis 1990 and Harley 1993 for discussions of different language teaching methods). The practical advantages of a deeper understanding of the linguistic and cognitive factors that drive non-native language acquisition are obvious: the more we know about how the process works, and to what extent it is similar or dissimilar to first language acquisition, the more we can help people to quickly and effectively become able to communicate in a new language. This, in turn, may have educational, economic, social, or cultural benefits for the learners.

In this thesis I examine the fundamental question of the similarities and differences between first language acquisition and acquisition of non-native languages,

looking specifically at the acquisition of syntax. In the next section I give an overview of the Principles and Parameters framework of generative syntax (Chomsky 1981, 1995) and how it relates to the question of language acquisition. I discuss briefly the Minimalist Program (Chomsky 1995) and how Principles and Parameters is viewed within the Minimalist framework. In the following section I summarize the main competing theories of non-native language acquisition of syntactic structures, presenting and discussing the results of several different studies in the area. The third section presents and analyzes my own data, gathered from students learning Japanese at Swarthmore College. I argue that my data shows evidence of transfer of native language syntax into the new language, a widely accepted phenomenon, and that it also suggests that non-linguistic cognitive processes, such as pattern imitation, are involved in influencing production, especially of the beginner and intermediate students. The fourth section gives a conclusion.

Before I begin the next section, a few notes about terminology: to refer to someone's native language, I will use L1, and to refer to the new language being learned, I will use L2, following the general convention in the literature. In keeping with that notation, I will often refer to the new language as a second language. This is not meant to imply that it is in fact the first non-native language that a given person has had exposure to or attempted to learn. While there are likely meaningful distinctions between the acquisition of a second language and the acquisition of subsequent languages, those distinctions are beyond the scope of this thesis. In addition, I use the word *acquisition* to refer to any acquisition of knowledge of or ability in a language. I do not make the

distinction between *acquisition* as an un-taught, natural process and *learning* as explicit instruction in a language (Krashen 1985).

1. Principles and Parameters

For a long time it seemed impossible to account simultaneously for the extreme variation and idiosyncrasies of different languages, and the amazing ability of children around the world to quickly and reliably learn language within their first couple of years. The child described at the beginning of the introduction would succeed in learning any language she was surrounded with, meaning that in her infancy she has the capacity to learn any human language. Yet languages seem so different from each other on the surface. The Principles and Parameters (P&P) framework provides a way of viewing the human language faculty that allows for variation between languages, and yet relies on a universal core of knowledge that makes the task of acquisition seem less daunting. In this section I will give a brief overview of P&P, highlighting its relevance to the question of acquisition. I will then talk specifically about the basic formulation of P&P within Minimalism, which is the framework I will be working in for the rest of the paper.

Within P&P, syntax consists of a core of Principles, which we are born knowing instinctively, and a finite set of Parameters that determine cross-linguistic variation. The core of intrinsic knowledge is referred to as Universal Grammar (UG). UG can be thought of as encompassing all potential human language grammars, and the process of setting parameters fixes the grammar to be that of one specific language. I will discuss, as an illustrative example, the word order parameter. We start from the observation that

different languages have different basic constituent orders. Observe the following two sentences contrasting English and Japanese:

English

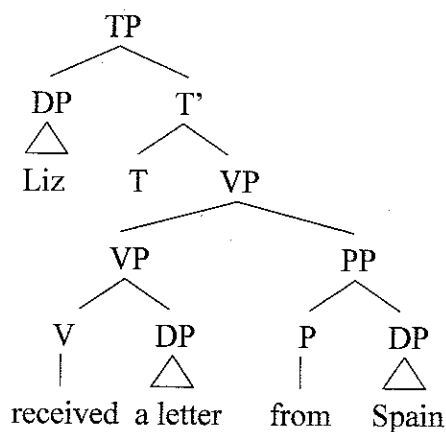
(1) Liz received a letter from Spain.

Japanese

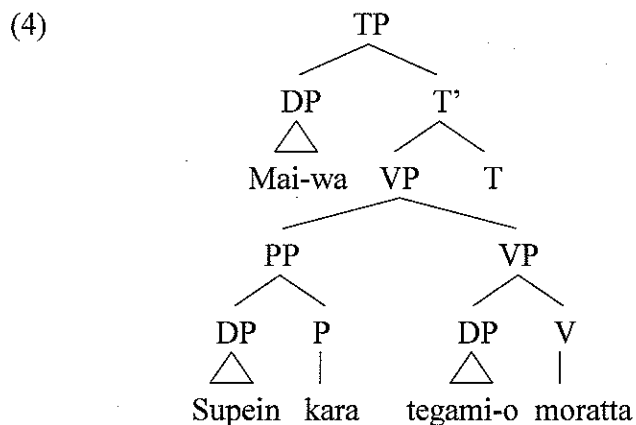
(2) Mai-wa Supein kara tegami-o moratta.
Mai-TOP Spain from letter-ACC receive-PAST
 'Mai received a letter from Spain.'

In English, the verb precedes the direct object and the preposition precedes its object, while in Japanese the object precedes the verb, and *kara* functions as a postposition rather than a preposition. This data can be captured elegantly by assuming that both languages have the same basic structure for generating objects as the 'complements' (sisters in a syntactic tree) of the verb or preposition; the languages vary then only in whether they put the complement first or the head¹ first, as shown in the simplified structures in (3) and (4):

(3)



¹ The 'head' of a verb phrase is the verb, of a prepositional phrase the preposition, and so on. A fundamental assumption of the structure-building mechanism used in P&P is that all 'phrases' are projected from 'heads.' For more detail, see Chomsky (1981) or any summary of X-bar Theory.



In this way, a child learning English or Japanese would already have the built-in knowledge of the basic phrase-building rules, and all she would have to do to internalize the word order differences between the two languages would be to notice whether objects seem to precede or follow verbs. Once she made that observation, she could set the ‘parameter’ that determines whether the language is head-final (like Japanese) or head-initial (like English), and once the parameter is set, she will be able to generate a wide range of accurate structures.

Shifting now to Minimalism, we find the same observed difference explained in a very different way. Under Kayne’s (1994) Linear Correspondence Axiom (LCA), word order is assumed to be a consequence only of the hierarchical structures of the syntactic tree; two ‘sisters’ sitting at the same level could not have their linear order determined, since neither asymmetrically c-commands the other². Hence linear order is determined through movement of certain elements to higher positions in the tree. Parameter settings determine whether or not this movement happens overtly, so that it affects the pronounced word order, or covertly, so that it doesn’t. The differences between languages are assumed to come about not because of structural differences in how

syntactic trees are built (whether heads precede or follow their complements), but rather because of different ‘feature strength’ of certain elements of the morpholexicon: ‘strong’ features trigger overt movement, and ‘weak’ features lead to covert movement. In the next section I explain in more detail the mechanics of movement and feature strength in Minimalism, and how they affect word order. I explain in more detail what is meant by ‘covert’ movement, and also briefly discuss a reinterpretation of covert movement, which reanalyzes it as long-distance agreement that can take place without movement in the absence of strong features.

For the discussion in this paper I will assume this Minimalist conception of parameters: there is in fact one universal computational system of syntax, and variation between languages is morpholexical, involving, for example, different feature strengths that force different patterns of movement (Chomsky 1995). This view has important consequences for the study of both L1 and L2 acquisition. Specifically, if the actual syntactic system is the same in all languages, that could be seen as drastically simplifying the task of learning a new language. The task of acquisition becomes all about learning the lexicon and morphology, including things like feature strength. Of course, that undertaking is far from simple. In section II, following the discussion of Minimalism in the next section, I will summarize the main theories about second language acquisition and its relationship to UG and parameter setting.

1.1 Parameters and Word Order in Minimalism

In this section I will cover the basic concepts of feature checking and feature strength in Minimalism, leaving aside many of the messy details. Those interested in

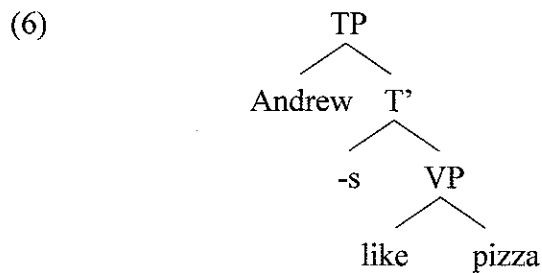
² A given node asymmetrically c-commands all descendents of its sister.

those messy details should see, for example, Hornstein, Nunes, and Grohmann (2005), or any other more comprehensive overview of Minimalism. Here I will first describe what is meant by feature checking, then illustrate the difference between strong and weak features by comparing English and French word order in sentences with certain adverbs. Finally, I will summarize how word order could be determined by feature strength parameters, to generate, for example, SVO languages (like English) and SOV languages (like Japanese). Understanding the mechanisms behind word order differences is important in studying second language acquisition, since word order is one of the most salient differences between languages and hence is very often the focus of studies in L2 acquisition. In order to interpret and generalize from the results of such studies, we must understand what actually determines word order, and where the differences arise. More generally, the shift from viewing different parameter settings as actual different syntactic structures to viewing them as different properties of certain elements of the morpholexicon has clear implications for the act of learning a new language.

Before I begin the discussion of Minimalism, however, I will mention a few basic assumptions about the structure of sentences in this framework of syntax. What I describe here is sufficient for what I want to illustrate; it may be somewhat simplified in some cases, leaving out, for example, any structural shells that are not relevant to what I am trying to show. The crucial concept is that information like tense, mood, voice, person, number, and other factors that may enter into the verbal morphology, is carried in a functional head that is present in the syntactic tree just like lexical heads, such as verbs and nouns. For example, we assume that tensed clauses are projected from a tense node, T, so that the whole clause is a Tense Phrase (TP). The Verb Phrase (VP) is the

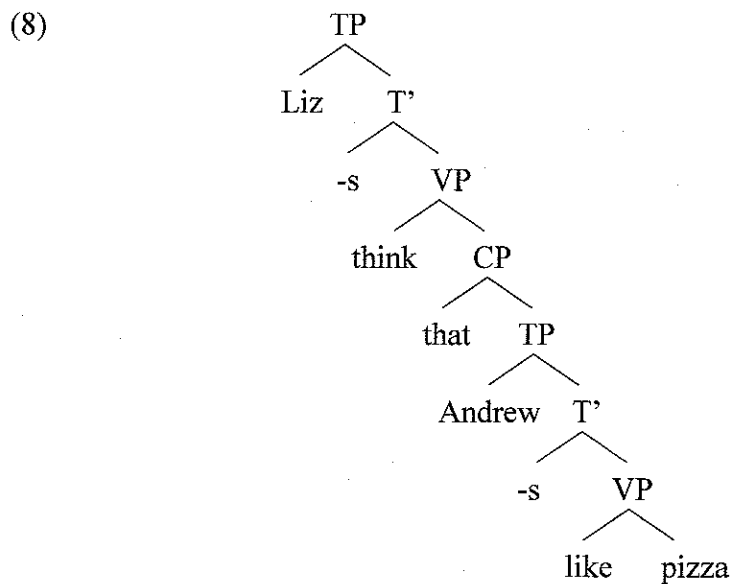
complement of T. The tense node does not always have phonetic content, although it may: in English, for example, the present tense is generally represented by the morpheme *-s* in the T node of the tree, as shown below

(5) Andrew likes pizza.



When this sentence is sent to the morphology, the morpheme *-s*, being a bound morpheme, will be attached to the verb, giving the sentence in (5). Complementizers, such as English *that*, take TPs as their complement, and form CPs, so that sentence (7) has the structure given in (8):

(7) Liz thinks that Andrew likes pizza.



Note that the complementizer *that* could also show up as phonetically null; *Liz thinks Andrew eats pizza* is a fine English sentence. However, even when no complementizer is pronounced, we still assign the same structure as shown in (8), except with a phonetically null complementizer.

A few more terms and assumptions will be important to the discussion. Anyone familiar with syntactic trees under X-bar theory might notice the absence of some bar levels from the above trees. I'm using the Minimalist system of Bare Phrase Structure, in which sentences are built through the operation Merge, which takes two syntactic objects (items from the lexicon, or structures that have already been built through merging) and combines them to form a new syntactic object.³ When two objects merge, the head of one of them 'projects'; that is, the new item formed seems to generally have the properties of one of the original lexical items that went into making it, and that item is the head. For example, the phrase *exceptionally pretty student sitting at the desk* has pretty much the same properties and distribution as the noun *student*, so we say *student* is the head of that phrase, and that the whole constituent is a Noun Phrase, or NP. Or in other words, the noun has projected when it merged with all of the modifying phrases. The first object that merges with a given head such that the head projects is generally its complement; when subsequent arguments merge with the syntactic object [head + complement], they are called specifiers. Generally, though not always, a head will stop projecting after it merges with a specifier. Bar levels are only included in the tree when

³ This is the term generally used to refer to a chunk of syntactic structure formed at some point in the derivation; it is not related to the use of 'object' to refer specifically to the DP complement of a verb or preposition. I will try to avoid confusion by always specifying 'direct object' or 'object of the verb' when I intend the second usage.

they are in fact necessary; in other words, when the head merges with more than one object.

Three last details of the basic tree structure deserve mention. The first is Determiner Phrases. I will be assuming throughout that phrases like *the student* are DPs, projected from the determiner *the*. This assumption is in keeping with the general observation that all heads are able to project, so that if we have determiners we should expect to find DPs. Proper names, pronouns, and plurals will also be classed as DPs. This isn't the place for a detailed defense of DPs, but see Abney (1987) for more discussion. I also assume the VP-internal Subject Hypothesis (Koopman and Sportiche 1991), which maintains that subjects of verbs are generated as specifiers of the verb, and move at some point in the derivation to the position of [Spec, TP], specifier of the Tense Phrase. However, in some cases, for the sake of simplicity I will draw trees as though the subject were generated in [Spec, TP], when the derivational history of the subject is irrelevant to whatever I am illustrating. Finally, I assume the copy theory of movement (Chomsky 1995, Nunes 1995), where movement is actually just the copying of some element followed by the merging of that copy into the structure.

To make the ideas discussed above more concrete, I will step through the derivation of the sentence *Holly visited Liz's house in Chicago*. It is assumed that the possessive morpheme *'s* is a determiner that takes the thing possessed as its complement, and the possessor as its specifier.

- (i) Merge *in + Chicago*; *in* projects.
[_{PP} *in Chicago*]
- (ii) Merge *house + PP*; *house* projects.
[_{NP} *house* [_{PP} *in Chicago*]]

- (iii) Merge 's + NP; 's projects.
[D' 's [NP house [PP in Chicago]]]
- (iv) Merge *Liz* + D'; 's projects.
[DP Liz [D' 's [NP house [PP in Chicago]]]]
- (v) Merge *visit* + DP; *visit* projects.
[V' visit [DP Liz [D' 's [NP house [PP in Chicago]]]]]
- (vi) Merge *Holly* + V'; *visit* projects.
[VP Holly [V' visit [DP Liz [D' 's [NP house [PP in Chicago]]]]]]]
- (vii) Merge *-ed* + VP; *-ed* projects.
[T' -ed [VP Holly [V' visit [DP Liz [D' 's [NP house [PP in Chicago]]]]]]]]]
- (viii) Copy *Holly*; Merge *Holly* + T'; *-ed* projects.
[TP Holly [T' -ed [VP Holly [V' visit [DP Liz [D' 's [NP house [PP in Chicago]]]]]]]]]]]

Notice that here the X' notation is used only when a given head actually projects more than once. When this structure is sent to the phonological component, the bound morphemes will attach to the appropriate words, and the lower copy of *Holly* will be deleted for purposes of linearization (see Nunes 1999), producing the final sentence *Holly visited Liz's house in Chicago*.

1.1.1 Interface Levels and the Covert Component

I have been using the terms 'overt' and 'covert' to refer, respectively, to movement that we hear when the sentence is pronounced, and movement that we don't hear but which is assumed to happen at some point anyway. In this section I will elaborate on the Minimalist conception of how a derivation proceeds and discuss the concept of covert syntactic operations in more detail.

Language, being a system that relates sound and meaning, must interact in some way with both Conceptual-Intentional (C-I) and Articulatory-Perceptual (A-P) systems of

the brain. The 'interface' levels with these two systems are referred to as Logical Form (LF) and Phonetic Form (PF) respectively. Since these two interface levels are conceptually necessary, an ideal Minimalist system would make use of these levels in the derivation and no others. A derivation in the system assumed in the following sections proceeds as follows:

Step 1: Start with a Numeration, a set of items drawn from the lexicon.

Step 2: Apply Merge and Copy to build up syntactic structures.

Step 3: The structure that has been built is shipped off to PF. Morphological and phonetic processes apply along the way to get the sentence in the form in which it will be pronounced. This point in the derivation is called Spell-Out.

Step 4: Merge and Copy continue to apply to the pre-Spell-Out structure, checking any features that remain unchecked (see below) and getting the structure in a proper form to be interpreted by the meaning interface at LF. Any operations that happen during this stage of the derivation are not reflected in the pronunciation of the sentence, since a copy has already been sent to PF. This is called the covert component.

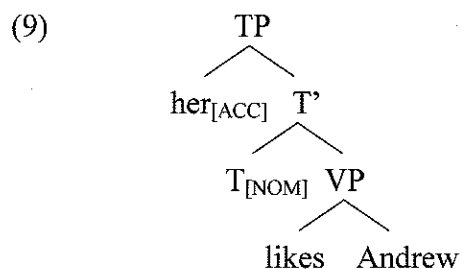
Because the structure that we hear a sentence pronounced with does not always match what we believe the structure must be at LF in order for the meaning of the sentence to be interpreted, we are forced to assume that some syntactic operations apply covertly, after Spell-Out when the structure is sent to PF, but before LF. This is not in fact a conceptually optimal assumption; recent work has looked to eliminate the concept of covert movement, and reanalyze it in terms of, for example, long-distance agreement operations (see section 1.1.3.1 below). However, since the majority of the studies and theories of second language acquisition that I will be discussing assumed some version of

the covert component, I will by and large stick to the terminology of overt and covert movement.

1.1.2 Feature Checking

Given the basic structures described above, with functional heads that carry tense or agreement information, there must be some mechanism for ruling out sentences with incorrect agreement or with incorrect case marking, such as **Her likes Andrew*. Assume that lexical items, including functional heads like Tense, enter the derivation carrying various features with them. For example, *her* carries an accusative case feature. In order for the sentence to be interpretable by the meaning-oriented systems of the brain, these features must at some point be matched to similar features carried on functional heads. To check features, the lexical items must sit in the right position in the tree relative to the functional head, often a specifier position, or a position adjoined to the functional head. If the features don't match correctly, the sentence will be ungrammatical.

Consider for example the (simplified) structure of **Her likes Andrew*, shown below.



Since subjects are assumed to move to [Spec, TP], we can capture the generalization that subjects must have nominative case by assuming that T carries a nominative case feature that it needs to check against some DP in its specifier that also has nominative case. In

(9), however, the DP in [Spec, TP] carries an accusative case feature, and checking cannot successfully occur, hence the sentence is bad.

1.1.3 Feature Strength

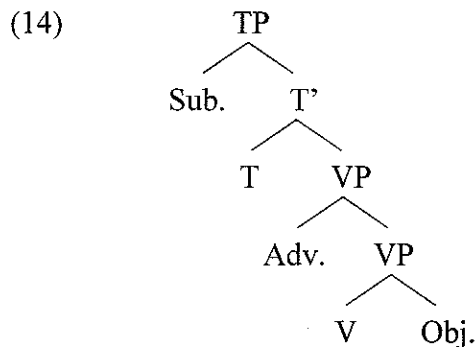
Not all features have to do with various kinds of agreement or case checking. In order to capture certain patterns of movement, we hypothesize that certain functional heads carry uninterpretable features that must be checked at some point in the derivation in order for the sentence to be interpretable by the sound and meaning interfaces, PF and LF. Some features, which we call ‘weak,’ can remain unchecked when the structure is sent to PF (Spell-Out) without causing a problem. Weak features, in other words, are interpretable at PF, and do not cause the derivation to crash if the syntax doesn’t manage to eliminate them via checking. These weak features can then be checked in the covert component of the derivation, after the derivation splits. Other features, however, are uninterpretable at PF, and hence need to be checked before Spell-Out; otherwise the derivation will crash at PF. These features are called ‘strong.’ Since strong features need to be checked before the structure is sent to the phonetic component, any movement necessary to check strong features will happen before the sentence is pronounced, and so can be heard overtly. Weak features that are checked only in the semantic component do not cause overt movement.

I will illustrate these concepts with the classic example of verb movement in French vs. English. Consider the following paradigm of sentences:

- (10) Andrew often eats apples.
- (11) * Andrew eats often apples.

- (12) Andrew mange souvent les pommes.
Andrew eats often the apples
- (13) *Andrew souvent mange les pommes.
Andrew often eats the apples

Assume that these sentences have the underlying (simplified) structure shown in (14).



We can capture the difference between English and French elegantly if we assume that in French, T carries a strong V-feature, which must be checked by adjunction of the verb to T before the derivation splits. Hence at the point when the sentence is pronounced, the verb is sitting higher in the tree than the adverb, and so is pronounced before it. In English, however, the V-feature on T is weak. It still makes sense to assume that at some point in the derivation, the verb adjoins to T to check its various agreement features; however, in English, in the absence of a strong V-feature on T that forces overt movement of the verb, this checking is allowed to happen covertly, at LF. In this way, a simple difference in feature strength on a functional head can explain differing word order patterns. Notice that in order to correctly rule out sentence (11), in which the English verb has raised overtly, we need an extra stipulation that overt movement is not allowed when covert movement would be possible. This extra stipulation is perhaps problematic for the theory, as I discuss briefly in the next section.

1.1.3.1 Agree

Although it is not a crucial distinction for the discussion in this thesis, it is worth mentioning that the concept of ‘covert’ movement is in fact a problematic one for Minimalist theory, and that there are various alternate analyses that attempt to account for the same data using slightly different concepts. The main problem with covert movement is that it forces us to consider Spell-Out, the point when the derivation is sent to PF, as in some sense a real level of the derivation, with the power to rule out certain structures as bad, if, for example, movement has happened before Spell-Out in the absence of a strong feature. The stipulation that somehow covert movement is to be preferred if possible is empirically but not conceptually justified. If the movement operation is the same and all that differs is the timing (before or after Spell-Out), then Spell-Out is playing a larger role than we’d like it to. Consider for example sentence (11) above, in which the English verb has raised overtly to T. What makes that sentence bad? There was no strong feature that needed to be checked before PF, but that alone should not cause the derivation to crash at PF; since there was no strong feature to cause a problem in the first place, it shouldn’t matter whether movement took place. If we assume that covert movement will take place between Spell-Out and LF, then at LF the derivation looks the same no matter exactly when the movement occurred. Hence in some sense we have to consider the derivation to crash at Spell-Out, since that is the only point left. If we want to rule out (11) by basic principles of economy, then we have to stipulate that for some reason overt movement is more costly than covert movement, even though the only difference is the timing. In any case, a theory based on overt vs. covert movement seems to make unjustified distinctions

between operations before and after Spell-Out, so we either need to justify those distinctions or look for a different analysis.

One such different analysis relies on the operation Agree, and covert movement is replaced by long-distance application of Agree (Chomsky 2000). In this system, functional heads enter the derivation with certain uninterpretable features which are unvalued (for example, unvalued person or number features). Since they are unvalued, these features are uninterpretable at the interfaces and will cause the derivation to crash. Hence they need somehow to acquire values and in doing so become invisible to the interfaces. This is achieved through the operation Agree: if a functional head (called the *probe*) c-commands a *goal* that is a) local (i.e. no other potential goal intervenes), b) has valued features that match the probe's unvalued features, and c) is active (i.e. still has some uninterpretable feature it needs valued), then Agree can apply between them, valuing the probe's unvalued features and rendering them invisible at the interfaces. No movement needs to take place for this agreement to happen. In this system, contrary to the checking system sketched above, case on DPs is seen as an unvalued, uninterpretable feature on the DPs when they enter the derivation; the case feature is valued as a result of Agreeing with an appropriate functional head. For example, DPs that Agree with a T head will have their case feature valued as Nominative. (See Hornstein, Nunes, and Grohmann 2005, 317-27 for an overview of this system.)

In addition to the unvalued features like number and person, some functional heads will carry a 'Strong' feature, which needs to be checked by some projection merging into its specifier position or adjoining to it. Hence we can still say that French and English have a different parameter setting that forces V to move overtly to T in

French and not in English; the difference is that, rather than saying that French T has a strong feature and English T has a weak feature, we would say that French T has a strong feature and English T does not. In the absence of a strong feature, agreement can take place without movement, and there is no reason to assume the existence of ‘covert’ movement at all. The preference for not moving when no movement is needed follows naturally from economy principles.

In general, as I have mentioned, the theories and studies I will be discussing in the later sections of this thesis, when they use the Minimalist concept of parameters at all, talk about strong and weak features rather than Agree. Hence for the rest of the paper I will mostly stick to that terminology, except in cases where the two theories would actually make different predictions or offer different analyses, in which case I will point out those differences and how the conclusions might be re-interpreted in an Agree-based approach.

1.1.4 Word Order

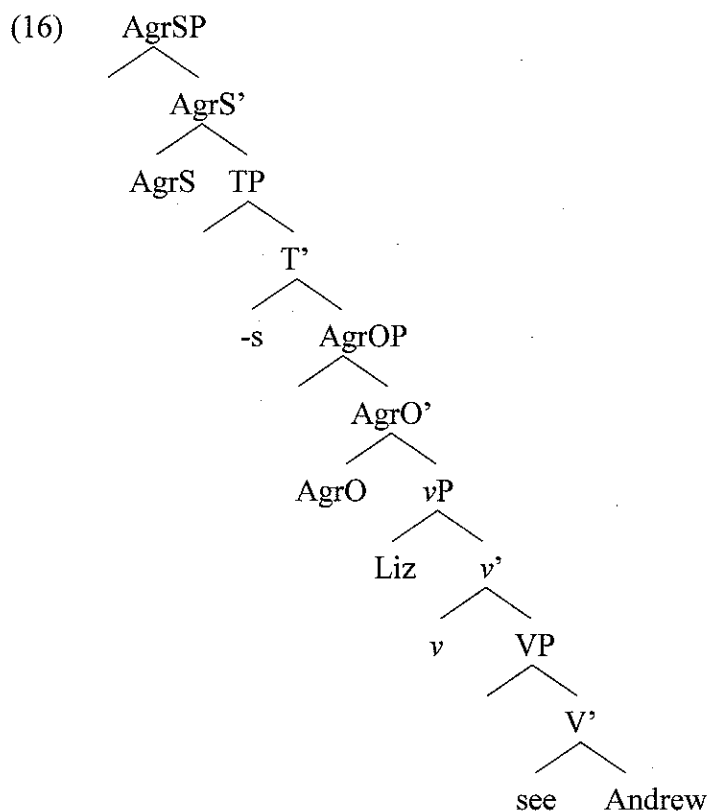
Given these basic tools, we can begin to see how word order is in fact determined under this system. Recall the Linear Correspondence Axiom (LCA), mentioned briefly above and repeated (in slightly simplified form) here:

- (11) LCA: Linear order of a sentence is determined by asymmetric c-command; an element α will precede an element β if and only if some projection that dominates α asymmetrically c-commands β .

The only remaining tools we need in order to illustrate word order are VP shells and agreement phrases. We assume the existence of a ‘light verb,’ v , which merges with the

VP, and is responsible for both checking accusative case and merging with the external argument (the subject). (This construction is motivated by the need to account for double-object sentences, such as *Liz gave Andrew an apple*. See Chomsky (1995) for further discussion and justification.) In English the light verb is usually (though not always) phonetically null. In addition, we assume the existence of AgrO and AgrS, heads that carry features to check agreement with the object and subject, respectively (Chomsky 1991). A general structure for a simple transitive clause then may look something like (16), representing the example simple transitive clause in (15). What is shown is the structure before any movement has taken place.⁴

(15) Liz sees Andrew



⁴ In fact, since movement (which is just Copy + Merge) is assumed to happen as the derivation goes along, and not at some later point after the whole structure has been built, what is illustrated in (16) does not necessarily represent the actual structure at any point in the derivation. I am using it here simply to show all the tiers of structure that will enter into the derivation and drive movement.

Given this basic structure, various movements must occur, either covertly (before Spell-Out) or overtly (after Spell-Out), in order for all features to be properly checked. At some point, the object must be in [Spec, AgrOP], and the subject in [Spec, AgrSP]. It's assumed that the verb *see* adjoins to *v*, and that T adjoins to AgrS (in order to capture the morphological link between tense and subject agreement). Whether all of this movement happens overtly or covertly is determined by feature strength parameters on the functional heads. For example, we can hypothesize that in English, before the derivation splits, V adjoins to *v*, the subject moves up to [Spec, AgrSP], and the object stays put, waiting for its features to be checked covertly. Then at the point when the structure is sent to PF, the subject asymmetrically c-commands the verb, which asymmetrically c-commands the object, and we get SVO order. In Japanese, on the other hand, we can assume the verb adjoins to *v*, the subject moves to [Spec, AgrSP], and the object moves to [Spec, AgrOP], where it asymmetrically c-commands the verb, giving SOV order. Hence the crucial difference between English and Japanese is the feature strength on AgrO. Or, reframing in terms of Agree, the presence or absence of Strong features on the various functional heads will determine whether movement is forced to take place or not. Other word order possibilities can be captured by similar differences in patterns of overt movement caused by different feature strengths, or the presence or absence of Strong features.

1.1.4.1 A Different Approach: Symmetry

The LCA is not universally agreed upon. Because I will be discussing the syntax of Japanese in particular, it is worth mentioning a slightly different system advanced by

Naoki Fukui in his work on Japanese (Fukui 2006). He proposes that parameters actually come in two flavors: different feature specifications of functional categories, as we've been discussing; and word order parameters. In this view, the operation Merge creates an ordered pair rather than an unordered set, and the word order parameter specifies whether the first or second element projects. This is in a sense equivalent to the X-bar Theory conception of head-initial vs. head-final languages, only framed in Minimalist terminology. Linearization of syntactic structures then happens after Spell-Out through a process called Demerge, which is constrained by a Symmetry Principle that basically requires that the order of elements after Demerge be related to their order as an ordered pair after Merge.

It is beyond the scope of this thesis to go further into the details of this system, or to attempt to address the questions of whether this system or the LCA system should be preferred (for more details, see Fukui 2006). Since Fukui's system involves two different types of parameters, while a system of linearization based on the LCA allows parameters to be restricted to features on functional categories, from a Minimalist point of view it seems as though the LCA system has a conceptual advantage; the claim that there are in fact special word order parameters would need to be rigorously justified empirically, since it seems a departure from the most unified and simple design. On the other hand, with the word order parameter, less overt movement needs to take place, which could be seen as a simplification of the system.

1.1.4 Summary

I have sketched how different basic word orders could be derived in a Minimalist system given a system in which the only parametric variation involves feature specification on functional categories, and in which linear order is determined only by asymmetric c-command. The basic story is that phrases have many tiers of syntactic structure beyond the basic lexical categories, such as *v*, *T*, and agreement phrases; when these functional heads carry Strong features, they force movement of some constituent in order to check the Strong features and allow the derivation to be interpretable at PF.

However, there are different views and theories of exactly how the system works. Many of the studies I discuss below frame their discussion in terms of overt and covert movement, but the idea of covert movement is conceptually problematic for a Minimalist theory, and the alternative of Agree seems promising. Not all theorists agree that the LCA is the best way to capture word order, and many studies and theories still rely on the existence of some sort of word order parameter, such as Fukui's conception of Merge as producing an ordered pair, with a parameter to determine which element projects. Because the theory is still being developed and debated, it is sometimes hard to compare different studies that assume slightly different frameworks in analyzing their results and ideas. The particular version of the theory that particular researchers are assuming will naturally influence their conclusions. At the same time, the data and results from studies of second language acquisition can perhaps help shed light on which theory seems the most promising.

II. Theories of Second Language Acquisition

Before getting into the specifics of theories of second language acquisition, it's important to keep in mind some general concerns and definitions. The proposals considered here have to do with the acquisition of syntax—the phrase or sentence structures allowed or disallowed in a language, and/or the structure-building procedures that allow phrases to be built up from lexical items. If we assume that the basic system for building phrases is in fact universal, it may seem that the whole question becomes trivial, that there is no such thing as acquisition of the syntax of a new language because the only real differences are morpholexical. In a sense, of course, the question does become trivial; but important new questions arise. How are new feature strength values in a new language arrived at? Does the process parallel that of first language acquisition? Is it in fact possible to 'reset'⁵ a parameter? And of course, the most general question: is the learning of a new language in fact a linguistic process, involving the language faculty of the brain and constrained by Universal Grammar? Or are we only really able to acquire one language, being forced to teach ourselves any new language using general cognitive strategies of pattern recognition, memorization, and so on?

At this point it's important to distinguish a few subtleties of meaning. First of all, what does it mean for UG to be available to second language acquisition, and what sort of evidence would be needed to show its availability? In order to show that UG is available, we do not need to show that L2 acquisition proceeds identically to L1 acquisition.

Herschensohn (2000) discusses the important distinction between acquisition being UG-driven and UG-constrained. It's clear without much investigation that people learning new languages proceed in a different fashion from babies learning their first language;

⁵ As Herschensohn (2000) points out, 'reset' is a slight misnomer, since of course the setting for the native language will generally stay intact. However, I will continue to use the term to refer to the acquisition of

the L2 learners often go to classes, drill themselves with flash cards, act out scripted dialogues, memorize specific grammar rules, and so on. Babies seem developmentally driven to acquire language; their brains are primed in some way to look for clues that help them set parameters, and they soak up new vocabulary like a sponge. Adults learning a new language do not have this developmental advantage; they already are able to communicate in one language, and their brains are not actively seeking to learn a new one. In fact, here 'adults' refers to anyone over around six; there is good neurological evidence that after approximately that age, the acquisition of a new language is qualitatively similar for both children and adults, with some gradual decline in ease of acquisition. (A summary of the differences between infant and adult language acquisition can be found in Herschensohn 2000, 27-53.) To compensate for this, adults will use a range of cognitive strategies to aid in more quickly learning a language. This fact does not show that second language acquisition is unrelated to UG. It may not be UG-driven in the same way that first language acquisition is, but it could still be constrained by UG; that is, if the grammars that adults use at various stages of learning a new language (referred to as the interlanguage grammar (Selinker 1972)) are possible grammars of a human language, that would be evidence that the language faculty and UG are available to second languages. If UG were completely unavailable, we would expect learners to often produce sentences with structures impossible in any language. Of course, it could be argued that interlanguage grammars are UG-constrained only because the learners are transferring their knowledge of the L1 grammar to the L2, and in fact UG as such is not accessed. To test that proposal, we would need to examine the grammars of L2 learners to see if they ever clearly contain structures unavailable in the L1.

The second important distinction to keep in mind is that between production and knowledge. When collecting and interpreting data from L2 learners, we must constantly be careful not to confuse exactly what they produce with their underlying syntactic knowledge. Students may produce grammatical sentences only because they've memorized the form; on the other hand, a learner might make errors in verbal inflection not because she hasn't got the right syntactic structure, but just because she has trouble remembering the right inflectional morpheme quickly. Production ability on the surface is not necessarily a perfect indicator of knowledge of syntactic structures.

Thirdly, it is important to remember that failure of learners to end up with a grammar identical to native speakers of the L2 does not indicate that acquisition is not constrained by UG, or even that anything has gone drastically wrong in the acquisition process. When confronted with data in the L2 that cannot fit into structures they know from their L1, learners may occasionally use structures or parameter settings different from those of both the L1 and L2. If these structures are allowed in any human language, then their use indicates the influence of UG on the acquisition process. Hence we cannot just look for 'errors' (from the point of view of the native L2 grammar) in the production or judgments of L2 learners and take the presence of such errors to indicate that parameters are not being reset or that the interlanguage grammar is not UG-constrained.

Finally, we must tease apart personal, cultural, or sociological concerns from linguistic ones when looking at the results of attempts to learn new languages. Adults trying to learn a new language are often busy, or unmotivated; their success in acquiring competence in the new language will depend on many complicated non-linguistic factors. Hence the large percentage of L2 learners who in some sense 'fail' to acquire the

language cannot be taken to indicate that it is fundamentally impossible for adults to learn a new language. While many studies have indeed found a gradual decline in the ease and success of second language acquisition as age increases (see Snow (1987) and Harley and Wang (1997) for overviews), we also must keep in mind that little children learning language spend several years constantly engaged in listening to the language and trying to produce it in meaningful, communicative situations. Very few adult learners have that luxury.

With these basic considerations in mind, I turn now to some specific theories concerning the initial state of L2 acquisition, the process by which syntax of the L2 is acquired, and the possible final state of the L2 learner's grammar. I argue that the majority of relevant data, including my own (see section 3), clearly shows at least some influence of the L1 grammar on production of the L2, although the details of that influence can be debated. I will then present several studies investigating the question of parameter resetting, many of which seem to show the possibility of acquiring syntactic structures unavailable in the L1. My discussion of the final state will be brief, since the focus of this paper is more on the acquisition process and less on its outcome; however, I will present a couple of studies that indicate the possibility of 'near-native' competence, which again argues in favor of the possibility of UG availability in L2 acquisition.

2.1 The Initial State

There are three obvious possibilities for the initial state of the grammar when learning a second language: the grammar of the L1; Universal Grammar (paralleling L1 acquisition); or somewhere in between, with some elements of the L1 transferring and

others not. The first possibility is represented by the Full Transfer Full Access theory of Schwartz and Sprouse (1996), which hypothesizes that the initial state is the L1 grammar but that learners have full access to UG and so can gradually restructure the grammar to fit input inconsistent with the L1. Alternatively, the Failed Functional Features Hypothesis (Hawkins and Chan 1997) proposes that learners start with the L1 grammar and are in fact restricted to it, in the sense that functional features not found in the L1 can never be incorporated into the grammar. The difference between these two theories will be discussed below in the section on parameter resetting; for now the important thing is that they both posit full transfer of the L1 grammar. Two theories that propose partial transfer are the Minimal Trees Hypothesis (Vainikka and Young-Scholten 1994) and the Valueless Features Hypothesis (Eubank 1994). In the Minimal Trees Hypothesis, lexical categories transfer from the L1, but functional categories do not, so that the initial state is an incomplete grammar lacking functional categories altogether, but otherwise based on the L1. Under the Valueless Features Hypothesis, functional categories as well as lexical items transfer from the L1, but their feature strength values do not. Hence the initial state is a grammar based on L1 but with unspecified feature strength, allowing for variation in production (sometimes acting like there's a strong feature, sometimes a weak feature). Finally, the Initial Hypothesis of Syntax (Platzack 1996) predicts that learners of both L1 and L2 start off the same way: with default feature strength of weak on all formal features. Weak, in this theory, is assumed to be the default feature strength, an assumption which is not necessarily conceptually justified or supported. In this model there is no L1 transfer; even features that are strong in the L1 will start out as weak in the L2, pending positive evidence suggesting overt movement. I will first summarize several

studies that demonstrate the presence of some L1 transfer, casting severe doubt on the Initial Hypothesis of Syntax. I will then investigate the more nuanced distinctions between the other three models for the initial state.

The Initial Hypothesis of Syntax predicts that, no matter what the L1, L2 learners will start out assuming no overt movement driven by strong features. Many studies have found this prediction not to hold. For example, Schwartz and Sprouse (1994) found that Turkish and Korean speakers initially assume an SOV order in German. As discussed above, the Minimalist story of SOV order is that the object is forced to move overtly to a position structurally higher than the verb by some strong feature that needs to be checked with the object. If SOV order is derived through movement triggered by a strong feature, then under the Initial Hypothesis of Syntax, L2 learners should all start out assuming an SVO order for the L2, since that is the order assumed to occur when all feature values are weak. In another study, White (1992) found that many French-speaking learners of English will initially produce sentences with the adverb after the verb, as in (17):

(17) * Andrew eats often apples.

This order would be correct in French, but is incorrect in English. The difference, again, can be accounted for by a difference in feature strength. In French, a strong V feature on the Tense node triggers raising of the verb overtly to adjoin to T, checking the strong feature. In moving up the structure, the verb will hop over adverbs or negation, causing them to appear after the verb in the sentence. In English, however, the V feature on Tense is weak, allowing for covert movement. Hence when the English sentence is pronounced, the verb is still sitting lower in the tree, meaning it will be pronounced after adverbs and negation. Given this account of the word order difference between French

and English, the natural explanation of the production of sentences like (17) by French learners of English is that they are transferring the strong V feature of French into English. This evidence is inconsistent with the Initial Hypothesis of Syntax.

Turning now to the Minimal Trees Hypothesis, we see that in fact the evidence presented above poses a problem for it as well. If functional categories, such as Tense, do not transfer from the L1, then what is behind the production of sentences with apparent verb raising by French learners of English? In fact, under the Linear Correspondence Axiom and the Minimalist view of word order parameters, the Minimal Trees Hypothesis becomes inconsistent: it is stipulated in the hypothesis that, along with lexical categories, headedness properties transfer from the L1. In other words, in our original X-bar Theory account of word order, some languages were generally 'head-final' and others generally 'head-initial,' and under Minimal Trees, these settings would transfer along with the lexical categories to the L2. This makes sense as a theory if in fact word order is an intrinsic property of the structure of, say, VPs in a given language; when the VP structure transfers from L1 to L2, its properties, such as whether the head precedes or follows the complement, will transfer with it. However, once we change our conception of word order, the hypothesis no longer seems consistent. If apparent differences in headedness are actually differences in feature strength on functional categories triggering different overt movement patterns, then we cannot hypothesize that headedness properties (basic word order) transfer while maintaining that functional categories are initially lacking in the L2 grammar. Without functional categories, what is to account for initial SOV order imposed on German by Korean and Turkish speakers, or for apparent overt verb raising over adverbs in English by French speakers? Under the

Minimalist account, the hypothesis as stated is illogical. Of course, if we adopt Naoki Fukui's view of parameters as being divided into word order parameters and parameters involving features on functional categories (Fukui 2006), then the Minimal Trees Hypothesis seems conceptually reasonable. Hence we have an example of how the basic framework we're working in can have a strong effect on what theories can even be logically formulated.

This leaves, of the initial state hypotheses mentioned, only the Valueless Features Hypothesis, and Full Transfer (with or without possible parameter resetting). Both theoretical and practical issues make the task of distinguishing between these theories challenging, particularly under the assumption that parameters can be reset. Under the Valueless Features Hypothesis, it's assumed that unspecified feature strength will allow for practically random variation in whether movement is overt or covert. If that is the case, then the production of SVAO sentences such as (17) can be accounted for just as well by assuming unspecified strength of the V feature on T as by assuming a transfer of the strong value from French. The fact that over time French learners of English come to more and more consistently produce the correct English SAVO order (White 1992) can be accounted for either as a resetting of the parameter from the initial French value to the English value, or as a gradual acquisition of the English value starting from an unspecified strength. Hence the data considered so far, where there is a feature strength difference between the L1 and L2, cannot very well shed light on whether feature strength is initially specified for the L2.

More enlightening would be studies in which both the L1 and the L2 share a feature strength. Under Full Transfer, since the L1 feature strength transfers and no

evidence from the L2 should contradict it, we would expect that from the beginning no variation regarding that feature should appear. Under Valueless Features, however, the feature strength does not transfer, but rather is initially unspecified in the L2. This would predict variable word order before the feature strength is set, with learners producing sentences in the L2 that are ungrammatical in both the L1 and L2. For example, Chinese and English both have a weak V feature on Tense, leading to SAVO order with adverbs. If Chinese learners of English initially accept or produce SVAO order, unacceptable in either language, that would provide evidence for Valueless Features. Eubank and Grace (1998) investigate exactly this question. They used a sentence-matching task (Freedman and Forster 1985) to test whether learners of English with native language Chinese seemed to accept SVAO sentences at a similar rate to SAVO sentences. Native English speakers generally respond more quickly when asked to determine whether two grammatical sentences on a computer screen are the same than they do when asked about ungrammatical sentences. As predicted, the native English control in the experiment had a significantly faster average response time for pairs of grammatical SAVO sentences than pairs of ungrammatical SVAO sentences. However, the Chinese L2 learners identified as closest to an initial state (judged by absence of consistent agreement morphology) actually performed similarly to native English speakers, in that they responded faster to the grammatical SAVO sentences. The more advanced learners, while they responded marginally faster to grammatical sentences, did not have a statistically significant difference in response time. These results seem confusing given any of the theories: why should more advanced learners show less of a preference for non-raising over raising structures? In any case, it's clear that these results do not show

clear evidence for Valueless Features over Full Transfer. In fact the hypothesis that the weak feature value carries over from Chinese into L2 English seems to give a better explanation for the behavior of the beginning learners.

White (2003) also points out some conceptual holes in the Valueless Features Hypothesis. She argues that the assertion that unspecified feature strength would lead to optional overt movement in the interlanguage grammar is not conceptually justified. If overt movement is specifically triggered by strong features that need to be checked so that they're not left uninterpretable, then in the absence of a strong feature, what forces the occasional overt movement exhibited by L2 learners, who sometimes produce sentences with overt movement and sometimes without it? The assumption that in the absence of specified strong features, no movement would be triggered, seems more intuitive and consistent with the theory. However, under that assumption, the Valueless Features Hypothesis would face the same problems as Minimal Trees in explaining cases of initial overt movement in L2 grammars. Taking the Agree approach rather than the covert movement approach makes this objection even stronger: if movement is triggered by the presence of Strong features, and the absence of a Strong feature means that no movement, overt or covert, need take place, then the concept of 'unspecified feature strength' becomes meaningless, or at least harder to formulate. A translation of the Valueless Features Hypothesis into the Agree system would have to involve some sort of assumption that learners were sometimes assuming the presence of a Strong feature and sometimes not.

White (2003) also points out that the Full Transfer Full Access theory has the flaw (or advantage) of being very hard to disprove as a theory of the initial state. Given the

clear evidence of at least *some* initial transfer from the L1, and if we assume that the interlanguage grammar can change and reset parameter values given new input in the L2, it's difficult to ever show conclusively that any particular aspect of the L1 grammar did not transfer. Any evidence of difference between the L1 and L2 grammars can be attributed to parameter resetting subsequent to the initial state, since change away from the initial state can happen almost immediately. It is also important to keep in mind that other cognitive strategies are at work in the initial stages of learning a language. Word order in the L2 different from L1 word order in beginning learners may not have anything to do with the feature strength of formal features in the interlanguage grammars of the learners; it may have more to do with memorized sound patterns and sentence blueprints. Given all of this, it's hard to see exactly what would constitute hard evidence against full L1 transfer. Of course, just because the theory is hard to disprove does not mean it's correct. However, the bulk of the evidence clearly points to the presence of transfer, and no specific theory of partial transfer seems supported conceptually or empirically, so I argue for Full Transfer as the hypothesis most consistent with the data.

2.2 Parameter Resetting

Can parameters be reset during L2 acquisition? In other words, can formal feature values different from those of the L1 make their way into the interlanguage grammar? Before considering specific theories and evidence on this point, it is again important to keep in mind some theoretical issues regarding what it would mean for parameters to be reset, and what kinds of evidence are relevant to show the presence or absence of parameter resetting.

First of all, the absence of parameter resetting would not imply the unavailability of UG in L2 acquisition. As long as interlanguage grammars seem to be UG-constrained, i.e. representing possible grammatical structures from some human language or other, there is evidence for the influence of UG on second languages. In other words, the availability of parameter resetting is not synonymous with the influence of UG. While the possibility of parameter resetting implies the availability of UG, the converse is not true. Of course, as mentioned briefly above, interlanguage grammars may be constrained by UG only because the L1 grammar is constrained by UG and has been transferred over to L2 (as in the Failed Functional Features Hypothesis), without implying any direct access to UG.

It's relatively clear what constitutes evidence for or against the proposal that interlanguage grammars are UG-constrained: If learners consistently produce structures that are allowable by UG under any parameter settings at all, then it seems likely that UG (in the form of UG or the L1 grammar) is involved in the process of L2 acquisition; it's not just a completely non-linguistic process governed by more general cognitive strategies. An interesting study by Smith and Tsimpli (1995) tested this issue in a creative way. They made up a language, Epun, which consisted mostly of structures that occur naturally in language, with the exception of an emphatic particle, *nog(in)*, which attached to the third orthographic element in any sentence. No rule in human languages works like that; the concept of 'third orthographic element' is alien to natural syntactic structures. They taught this language over a period of a year to Christopher, a subject who showed normal linguistic abilities but impaired cognitive skills in non-linguistic areas, such as arithmetic. Not only Christopher, but also the control group had significant

trouble mastering the placement of the emphatic element, even when exposed to written data (Smith and Tsimpli 1995, 140-142). This is strongly suggestive of the conclusion that learning new languages is a process that primarily involves the linguistic part of our brain, rather than other pattern-recognition abilities.

Evidence for or against parameter resetting can be fuzzier. It's clear from many studies, some of which I will discuss below, that it is possible for learners of an L2 to produce structures different from those of their L1 with relative accuracy and consistency. However, that evidence is often open to various interpretations. Correct production does not necessarily indicate the adoption of the L2 parameter values; it is theoretically possible that tools of memorization, pattern recognition, or imitation lead to correct production. It is also occasionally possible to present an analysis of the L2 data that is consistent with the parameter settings of the L1, allowing learners to produce grammatical sentences in the L2 while their L1 settings remain intact.

What, then, would constitute strong evidence in favor of parameter resetting? In L1 acquisition, a phenomenon that supports the P&P model is that of 'clustering,' the simultaneous acquisition of structures that seem distinct on the surface but can be seen to relate to the same parameter setting (see for example Jaeggli and Safir 1989). If strong evidence of similar clustering could be shown in L2 acquisition, that would be a good argument in favor of the possibility of parameter resetting. However, there is very little, if any, positive evidence for clustering in L2 acquisition, as I will discuss in more detail below. The absence of clustering, though, does not prove that parameter values cannot ever be changed. We're back, then, to the question of what relevant evidence is needed.

Another important phenomenon that the P&P model accounts for in first language acquisition is what's known as Poverty of the Stimulus. As discussed previously, children learning their first language seem able to produce and have judgments on structures that they were not explicitly taught or have not necessarily heard before. If L2 learners exhibited similar behavior, apparently able to make subtle judgments or distinctions in the L2 that cannot be based solely on the grammar of the L1 and which they could not have, in some sense, just memorized, that would be good evidence in favor of parameter resetting. However, the question of how exactly to decide what judgments or distinctions fall into this category is not trivial. In any specific case there may be an alternative analysis that does not rely on parameter resetting.

With these possible problems in mind, I will summarize three theories representing, again, a Goldilocks-like range: The Full Transfer Full Access theory of Schwartz and Sprouse (1996); the Constructionist model proposed in Herschensohn (2000); and the Failed Functional Features Hypothesis (Hawkins and Chan 1997). In Full Transfer Full Access, the Full Access part implies that UG is completely available and that parameters can be reset, triggered by input from the L2 that cannot be explained by the existing L1 grammar. The Failed Functional Features Hypothesis, on the other hand, maintains that learners cannot change the feature strength values on functional categories, and are restricted to the L1 values; any inconsistent data must somehow be interpreted within the L1 structures, or simply never mastered. The Constructionist model proposes that parameters can eventually be, for all intents and purposes, reset, but it specifically takes into account that the procedure for doing so is not the same as in L1 acquisition: while in L1 acquisition the brain is primed to set its parameter values, L2 learners don't

have that developmental advantage; instead they fill in the new feature strengths gradually, construction by construction, until eventually they've learned enough specific constructions involving a certain setting that the value of that parameter in their grammar can change. This theory attempts to account for the lack of clustering found in L2 acquisition, but also for the possibility of learners attaining near-native grammars eventually.

2.2.1 Failed Functional Features Hypothesis

The first of these theories that I will discuss is the Failed Functional Features Hypothesis, which maintains that parameters cannot be reset and learners are restricted to representations consistent with the L1 grammar. To test this hypothesis, Hawkins and Chan (1997) looked at the acquisition of various properties associated with *wh*-clauses in English by Chinese- and French-speaking learners. As background, I will briefly summarize the salient differences between English and Chinese relative clauses; I will then describe and discuss Hawkins and Chan's experiment.

In English, *wh*-expressions are assumed to be derived by movement of the *wh*-element from its original position, where it gets its semantic interpretation, into the specifier of the Complementizer Phrase (CP). We can think of this movement as leaving a trace, which is bound by the *wh*-element.⁶ Consider the following examples:

(18) The girl [_{CP} *who* Andrew saw *t*] is pretty.

(19) *What* are you eating *t*?

⁶ Under the Copy theory of movement, the trace would actually just be a lower copy of the word or phrase, but it suffices here to think of it as a trace left by movement; the analysis would be the same under the Copy theory, with slightly different notation and terminology.

In both of these cases, we can see that semantically, the *wh*-word is representing the direct object of a verb, hence we would expect that at some point in the derivation it was in the structural position where direct objects are generated: as sister to the verb.

However, they surface at the front of the clause. One explanation for this movement, consistent with the Minimalist views of how movement is triggered, is that the *wh*-word needs to move in order to check the strong feature of some other head. Specifically, we will assume that in English, the C head has a strong $[\pm wh]$ feature that needs to be checked. When C has a $[+wh]$ feature, then C itself is unpronounced, but forces movement of some *wh*-phrase into its specifier position in order to check the feature.

When C has a $[-wh]$ feature, it is pronounced overtly as *that*. With this analysis, we can understand several phenomena that we observe about English *wh*-expressions. Firstly, as already observed, we can explain what drives movement of the *wh*-word to the beginning of the clause. Second, because *wh*-clauses are derived by movement, we can understand the unacceptability of sentence (20):

(20) * The girl who Andrew saw her is pretty.

Since *who* was base-generated as the complement of the verb, we cannot simultaneously have another object filling that position, for the same reason that we can't say **Andrew saw him her*.⁷ Thirdly, this analysis accounts for the fact that *wh*-elements can't co-occur with the complementizer *that*:

(21) The girl that Andrew saw is pretty.

(22) * The girl who that Andrew saw is pretty.

⁷ In languages without the same kind of *wh*-movement, structures such as that of (20) are common; resumptive pronouns are also sometimes analyzed as spell-out traces. See for example Perlmutter (1972) and Engdahl (1985) for more discussion of resumptive pronouns.

In (22), there is a mismatch between the *wh*-element and the [-wh] feature on *that*, and feature checking is impossible, so the derivation crashes and the sentences are ungrammatical. Finally, since movement is involved in these constructions, general constraints on movement limit the range of grammatical constructions. In particular, movement across certain boundaries, called a Subjacency violation, is blocked, as in sentence (23):

- (23) * *Who* did Liz describe [_{DP} the way [_{IP} Andrew kissed *t*]]?

The details of Subjacency are not important here (but see Chomsky 1981); the point is that since *wh*-constructions involve movement, they are constrained by general constraints on movement.

In Chinese, the story is quite different. The equivalents of (20) and (23) are grammatical, as shown below, and there is no movement involved.

- (24) Wo xihuan ta de neige nuhai.
I like her COMP that girl
 'the girl that I like'

- (25) Zheben shu [_{DP} [_{IP} du guo *pro* de] ren] bu duo.
this book read ASP pro COMP man not many
 'This book, the people who read (it) aren't many.'

In (24) we see an overt pronoun as the object of the verb, which was disallowed in English, and in (25) we see a semantic relationship between the topicalized *this book* and the unpronounced complement of the verb, which I have written as *pro*, since semantically there should be an element acting as the complement of the verb, even though nothing is pronounced. I have not written it as a trace, because there is no evidence of movement in these sentences. In fact, since *this book* and *pro* are separated by both a DP and an IP boundary, we would expect a Subjacency violation if this

sentence were the result of movement; in other words, if *this book* had been generated as the complement of the verb, it could not legally have moved into the position it surfaces in. The grammaticality of (24) also argues clearly against a movement analysis, since a movement analysis would seem to involve two different elements being generated as complements of the verb. Hence in Chinese, unlike English, there does not seem to be *wh*-movement; we will assume that Chinese C lacks the strong [$\pm wh$] feature that English C carries.

Under the Failed Functional Features hypothesis, Chinese speakers learning English should be unable to acquire the strong [$\pm wh$] feature on C. Hence they will either persist in finding sentences like (20) and (23) grammatical, or must come up with alternative strategies, either linguistic or non-linguistic, for excluding them. Hawkins and Chan tested Chinese and French learners of English using a grammaticality judgment task that involved various *wh*-constructions. French, like English, has overt *wh*-movement, so the prediction, if learners are restricted to L1 parameters settings, is that French speakers will perform significantly better than Chinese speakers in judging grammaticality of English *wh*-constructions. The results of the experiment were generally consistent with that prediction; French speakers at every level (elementary, intermediate, advanced) performed better than Chinese speakers at the corresponding level. Interestingly, while Chinese speakers improved their accuracy in correctly identifying grammatical sentences and in identifying sentences with both a *wh*-word and *that* or with resumptive pronouns (as in (20)) as ungrammatical as they became more advanced, they actually became steadily worse at ruling out subjacency violations. The elementary group correctly identified 71% of the subjacency violations as ungrammatical, while the advanced group,

which averaged about 84% accuracy on other constructions, only averaged 38% in judging subjacency violations to be ungrammatical.

Hawkins and Chan suggest that this slightly surprising data can be explained by a theory in which no parameter resetting is taking place. The elementary learners, they propose, might be judging the subjacency violations as ungrammatical not because of the illicit movement, but rather because of the lack of resumptive pronouns, which would be expected in Chinese. As they become more advanced, learners become aware from ample positive evidence that resumptive pronouns are not generally used in English, as well as of the fact that *wh*-words and *that* do not appear together. Hence the more advanced learners do not reject the subjacency violations on the basis of lack of resumptive pronouns; rather, they accept them because they would be grammatical in Chinese. This result suggests that these learners are not treating *wh*-expressions in English as involving movement—if they were, we'd expect them to reject the subjacency violations more consistently. Rather, Hawkins and Chan suggest that they are analyzing the English sentences in some way that is consistent with their L1 parameter settings and the lack of *wh*-movement. Hence these results, in particular the high acceptance of subjacency violations and the disparity between the performance of Chinese and French speakers, seem generally consistent with the proposal that parameters are not reset.

However, other evidence casts serious doubt on this hypothesis. In a different study, White and Juffs (1998) found that their Chinese-speaking subjects who had been immersed in English as adults performed similarly to native speakers on a grammaticality judgment task that involved subjacency violations. Other studies have found that learners of English whose native languages don't have *wh*-movement are nevertheless often able

to make distinctions between sentences with subjacency violations that are in some sense more or less serious violations. In other words, native speakers will often find certain instances of illicit movement harder to accept than others, depending on exactly how many and what type of barriers are crossed (Chomsky 1986). If L2 learners were restricted to analyses of these structures that involve no movement, we should not expect any differences in their judgments depending on exactly how the movement would have happened. Yet such differences seem to exist (see, for example, Epstein et. al. 1996). Finally, as White (2003) points out, if parameters cannot be reset at all, then we should expect the opposite result for learners of L2s without *wh*-movement whose L1s have *wh*-movement; they should never be able to lose the strong [\pm wh] feature on C, and hence should persist in disallowing structures with resumptive pronouns or with *wh*-words remaining in place. My own data seems, tentatively, to contradict that prediction; I observed only one instance of apparent *wh*-fronting, by a first-year student, which she corrected when given the chance. While, as I will discuss later, I believe the production of my subjects was heavily influenced by memorized sentence patterns, the fact that none of my subjects seemed to have any problem accepting the lack of *wh*-movement in Japanese seems to go against the Failed Functional Features hypothesis. While it's clear that L1 influence is a factor, and that perhaps some parameters take a long time to be reset or may in fact never be reset by any given learner, it seems that a theory that restricts learners to only the features and feature strengths present in the L1 fails to account well for the whole range of data.

2.2.2 Full Transfer Full Access

Given the evidence that it is not completely impossible to acquire new features or feature strength, we need a theory that allows for parameter resetting somehow. In the Full Transfer Full Access model, L2 learners begin with their L1 grammar, as discussed above, but have full access to UG, and hence are able to acquire new parameter values, triggered by positive input from the L2 that cannot be analyzed with the L1 settings. White (2003) surveys a range of studies of parameter resetting, concluding that there is strong evidence for the possibility of learners acquiring new feature strengths and features that weren't present in the L1. Some of the data, however, is troubling for a theory that assumes 'full access,' without offering any further explanation of the differences between parameter setting in L1 acquisition and the resetting of parameters when learning a new language. Specifically, a full access theory has a hard time accounting for the variability of production by L2 learners, who often have periods of alternating between sentences consistent with the L1 settings and sentences consistent with the L2 settings; in addition, a full access theory would predict clustering similar to that found in L1 acquisition—once a parameter is reset, then any construction that is influenced by that parameter should show evidence of the new value. Such patterns, as I will discuss below, are generally not found in L2 learners.

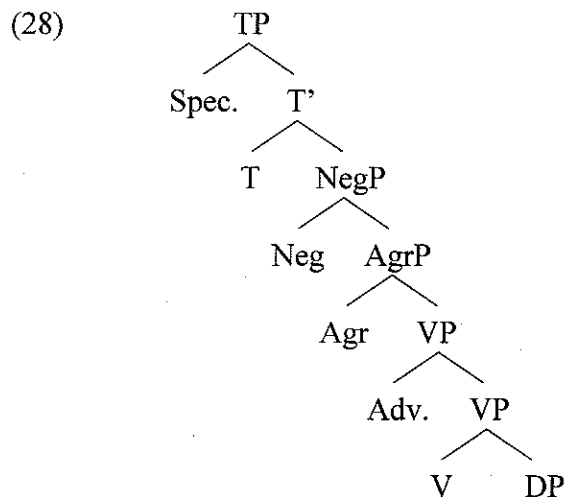
I will not attempt to summarize all the various studies showing evidence of new parameter values here (but see Herschensohn 2000 and White 2003 for good recent overviews). Instead, I will describe a couple of specific studies whose results simultaneously seem to show the possibility of parameter resetting, and the lack of

consistent production or clustering effects. This discussion will lead nicely into my presentation of the Constructionist model (Herschensohn 2000), which attempts to account for the rather messy and inconsistent data while allowing for eventual resetting of parameters.

White (1992) investigated the acquisition of the weak V-feature on T by French-speaking beginner learners of English. As I have discussed, French has a strong V-feature that forces overt movement of V to T, leading to the pronunciation of the verb before certain adverbs modifying the VP. Two further effects of this movement are that the verb appears before the negative element *pas*, and is fronted in yes/no questions, as shown below:

- (26) Les chats (n')attrapent pas les chiens.
the cats (NEG) catch NEG the dogs.
 'Cats don't catch dogs.'
- (27) Attrapent-ils les souris?
catch they the mice
 'Do they catch mice?'

White found that the learners rejected verb raising in English questions and negatives at a rate of approximately 86%, compared to 97% rejection by native speakers. However, the learners only rejected 23% of sentences with the verb raised over an adverb, compared to 95% rejection by native speakers. White attempts to explain the discrepancy by appealing to the theory that there is actually an agreement projection above the VP but below the TP, and that adverbs are adjoined below the agreement head while negation sits between the agreement phrase and the TP, as illustrated below:



With this structural analysis, a way to make sense of the data is to assume that the learners have successfully acquired the weak feature on T, but persist in keeping a strong feature on Agr, raising the verb over adverbs but not negation. White admits, however, that while this analysis accounts for the data, there is no clear conceptual justification for assuming the learners would reset the feature strength of T but not of Agr, given a full access theory.

White (1990/1991) also conducted an experiment to test the effect of triggering on the resetting of the same verb-movement parameter by French-speaking learners of English. In this study, the learners, again at a beginner level, were split into two groups, one of which was instructed explicitly on question formation in English, and one of which was instructed on the use of adverbs in English. The instruction included error correction and explicit discussion of the grammatical and ungrammatical structures. After two weeks of instruction, the students were tested on adverb placement. Compared to their pre-instruction tests, the group instructed in adverbs showed significant improvement in identifying grammatical English sentences and rejecting ungrammatical ones. The question group, however, did not show any particular improvement in

rejecting English sentences with the verb raised above the adverb. In a follow-up study, White and Trahey (1993) attempted to test the effectiveness of simply manipulating the input rather than giving explicit instruction; they “flooded” a group of learners with English data containing adverbs. Results of the post-flooding test showed an increase in acceptance of the correct English order, but again no significant improvement in rejecting the incorrect sentences with verb raising.

Additional information on the results of these studies strongly suggests that parameter resetting was not achieved even by the group explicitly instructed in adverb placement—the only group that showed improvement in rejecting ungrammatical sentences. For one thing, as pointed out by Schwartz (1993), the learners in this group after instruction also tended to reject any other sentence with an adverb between the verb and another constituent, such as *Mary walks quickly to school*. This observation suggests that the learners were generalizing the rule they had been taught in a way that was regulated not by syntactic processes, but rather by other pattern-recognizing abilities. In addition, when tested one year later, the students in this group no longer consistently rejected verb-raised English sentences, suggesting that no real parameter resetting had ever taken place.

The results of this study are not conclusive evidence against triggering and clustering in L2 acquisition; it's possible to argue that two weeks is just not long enough for any resetting to take place, or that the input used to flood the students just wasn't quite targeted correctly to trigger resetting. However, these results cannot be said to argue in favor of a full access theory of L2 acquisition. Again, we run into the problem of how such a theory could be shown to be false: in any given case, it may be possible to

argue that there wasn't enough time for resetting, or the input wasn't right, or explicit instruction got in the way somehow. If any evidence of new parameter values in an interlanguage grammar is evidence of full access, and any evidence of failure to exhibit resetting or clustering can be explained away by other factors, then it is in fact impossible to disprove Full Transfer Full Access. However, since in fact the data is somewhat fuzzy and inconsistent, and does not clearly show clustering or evidence of clear all-or-nothing resetting, we would ideally like a theory that takes all of that into account and urges us to think more carefully about exactly how triggering might work in L2 acquisition as compared with L1 acquisition, and exactly how explicit instruction interacts with more naturalistic, positive evidence-based teaching methods. The Constructionist model described in the next section could be said to be similarly vulnerable to the criticism of being hard or impossible to conclusively disprove. However, I believe that it is more consistent with the data, and that it provides more scope for further investigation of the details of parameter resetting in L2 acquisition.

2.2.3 The Constructionist Model

The Constructionist model, as described in Herschensohn (2000), is similar to Full Transfer Full Access in that it assumes an initial state based on the L1 grammar, and it allows for the possibility of eventual resetting of parameters, so that some learners can eventually attain near-native proficiency. It differs from Full Transfer Full Access, however, in the details of how parameter resetting might take place. While 'full access' implies the complete availability of UG—an assertion based heavily on evidence that interlanguage grammars are constrained by UG—Herschensohn makes an explicit

distinction between UG-constrained and UG-driven. L1 acquisition, she argues, is developmentally driven; children learning their first language are actively seeking to set the features and feature strengths on various functional categories. While, as discussed above, there is good evidence that interlanguage grammars are generally constrained by principles of UG, and that the language faculty is indeed involved in the process of learning new languages, there is much less evidence that the process is UG-driven in the same way that L1 acquisition is. Adults' brains are not primed to notice specific data; our brains are not rapidly developing the way those of little children are. To compensate for this lack of spontaneity and inevitability of acquisition, adults make use of a wide range of other cognitive strategies, as I've already mentioned, such as memorization, imitation, and pattern recognition.⁸ In the Constructionist model, learners acquire new features and feature strengths construction by construction, gradually adding to their morpholexicon, until finally, in some cases, enough specific constructions have been learned that use a particular parameter setting that the learner will effectively have reset the parameter.

This model is based on the Minimalist conception of parametric variation as being morpholexical rather than syntactic. As learners become more advanced in the L2, their grasp of morphology and vocabulary builds gradually. Similarly, their ability to access the right feature specifications and feature strengths on functional heads increases slowly; they master certain specific constructions, and then others, until eventually they are able to use the new feature specifications with native-like accuracy. This theory is more

⁸ I am not, of course, claiming that these strategies don't play a role in L1 acquisition as well. My point is only that they are clearly salient in most cases of L2 learning.

consistent with the data presented above, in which learners seemed to go through stages of accepting and producing sentences based on more than one different parameter setting.

In several ways, however, the Constructionist model begs the question of exactly how and even whether parameters are reset. Is there any difference between simply mastering enough specific constructions to have native-like judgments, and actually resetting a parameter? If so, at what point and why does the resetting occur? Can the input be manipulated to trigger more efficient acquisition of new parameter values? Or, alternatively, are L2 learners in fact restricted forever to acquiring new features construction by construction, and never able to generalize effectively to constructions they've never seen before? The studies I have seen have often tested learners on constructions they have not received explicit instruction on, but rarely if ever on constructions they have never seen at all. More and subtler data would be needed in order to gain more understanding of how learners acquire new features or feature strengths and whether they can in fact use the new settings to make accurate judgments on novel constructions in the L2.

2.2.4 Summary

Many studies show evidence of mastery of structures in the L2 that would not be allowed by L1 feature specifications. The problem comes in trying to get at exactly what is behind that apparent mastery. So many factors work together to influence production and judgments of L2 learners; it is often possible to formulate several different explanations for any given data. If learners fail to align with native speakers in their judgments, it could be because they're unable to acquire new feature strengths, or it could

be because they've been confused by explicit instruction and other cognitive processes are getting in the way, or because they're not managing to remember or access the right feature quickly. On the other hand, when learners do appear to acquire a new construction unavailable in the L1, it could be that they've simply memorized the construction, or that they've managed to analyze it in a way consistent with their L1, or that they've learned a new feature strength but only know how to apply it to specific constructions, or that they've actually reset the parameter. It's easy to see the difficulties in collecting and analyzing data with the goal of understanding the underlying linguistic competence of L2 learners.

With that said, theories that assume either no acquisition of new feature specifications or full access to UG parallel with L1 acquisition seem to need to stretch more to account for the available data. The extent to which learners do seem able to acquire new patterns of movement is not easily explained if features are stuck permanently in the L1 settings. At the same time, a full access theory fails to adequately address the observed lack of clustering effects and variability in production and judgments of L2 learners. The Constructionist model seems to fit most neatly with the data, but it still leaves a lot of room for further investigation of exactly what's going on when new constructions are learned and what mental processes, linguistic and non-linguistic, are implicated.

2.3 The Final State

I will not go very deep into any theories of the final states attained by L2 learners here, since my focus is on the process of acquisition. However, I will mention a couple

of general considerations and a few specific case studies that are relevant to the general question of what parts of the brain are involved in second language acquisition and whether parameters can ever be reset.

It is important to realize that even if the vast majority of attempts by older children or adults to learn new languages end, in some sense, in failure, that does not indicate the impossibility of successful language acquisition after the critical period of childhood. Adults learning new languages are hindered by all kinds of personal, social, cultural, or sociological factors: motivation, level of time commitment, perceived benefits of learning the language (or lack thereof), quality and quantity of instruction, and so on. There are myriad non-linguistic reasons that any given person may fail to acquire anything close to fluency in a language she sets out to learn. However, if even a small percentage of learners end up speaking the new language with accuracy and fluency comparable to that of native speakers, we have good evidence that it is indeed possible to learn new languages, and likely possible to acquire new parameter values eventually.

While it is indeed true that many learners never reach near-native competence in a language, there are documented cases of learners who do. Several studies have attempted to test L2 speakers with apparent native-like or near-native ability to get at whether their competence is actually similar to that of native speakers. Birdsong (1992) tested adults who had lived in France for at least three years (having arrived as adults) in a variety of tasks, including a grammaticality judgment test. The study found few indications of difference in the competence of native speakers and near-native speakers. Montrol and Slabakova (2001) tested speakers of L2 Spanish with L1 English, who were judged to be near-native by a proficiency test, interviews, and assessment by independent judges, on a

subtle distinction in the uses of the preterite and imperfect verb forms in Spanish: when used in impersonal forms, the imperfect allows either for a generic interpretation (*one*) or a specific interpretation (*we*), while the preterite allows only for the specific interpretation. The authors believe that this distinction is unlikely to have been taught explicitly in a Spanish class. However, the near-native speakers performed very similarly to native speakers on an interpretation task designed to test for understanding of this distinction, suggesting that they have incorporated the functional category Aspect into their interlanguage grammar, with a [\pm perfective] feature, even though these are not active in the L1 grammar (see Montrul and Slabakova 2001, or White 2003, 255-58 for discussion). These studies add additional evidence to the idea that parameter setting is theoretically possible, or at least that any theory must accommodate the possibility of near-native ability, even if the majority of learners never reach it.

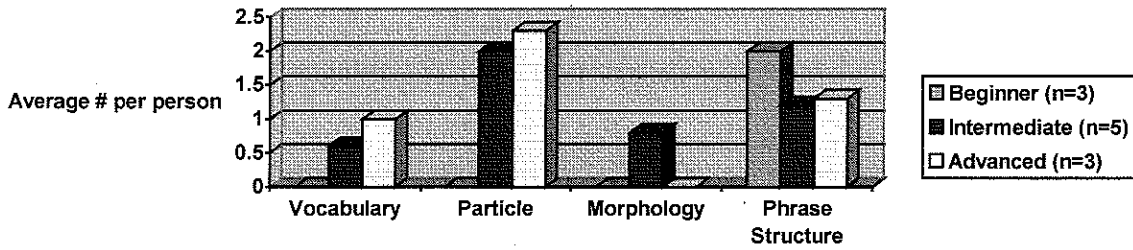
2. Data from Students of Japanese

I collected data from eleven students of Japanese at Swarthmore college, of a range of proficiency levels. There were three parts to the data collection. First, I asked the students to describe a simple picture, provided by me, in Japanese, focusing on detail and richness of content. They were told that they could describe the picture, make up stories about the picture, or talk about anything the picture made them think of. They were stopped after three minutes. In the second part, I showed the students a series of small, simple pictures, and for each picture they were told to create a question about the picture, which they were to ask and then answer. Finally, students had a chance to listen to the tape of their questions and answers, and told to correct anything they felt sounded

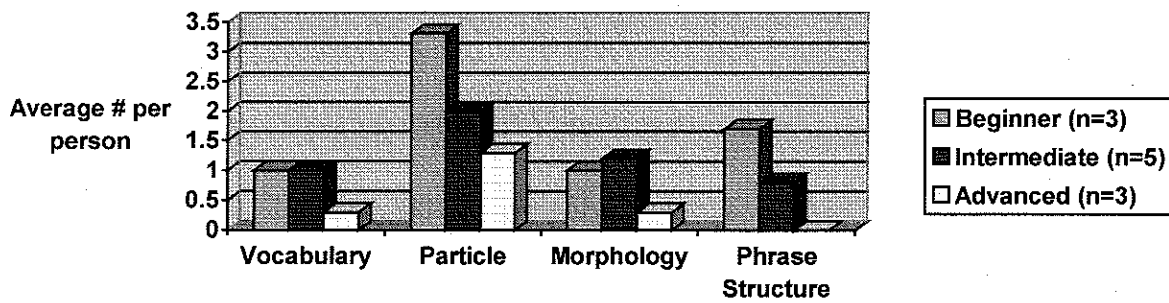
wrong or ungrammatical. I collected data from each student individually, one on one.

Below is a summary of my data. (For complete transcripts, see the appendix.)

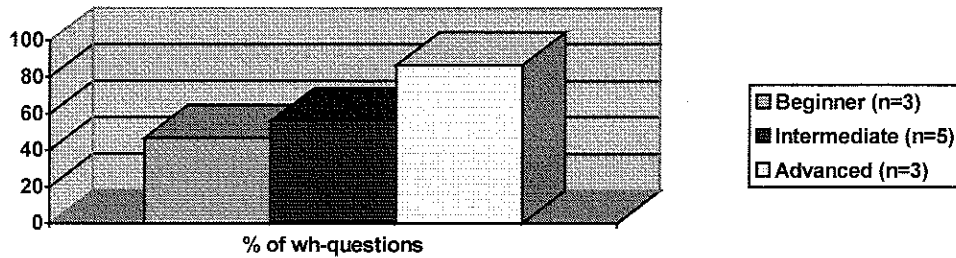
Errors in Production Task



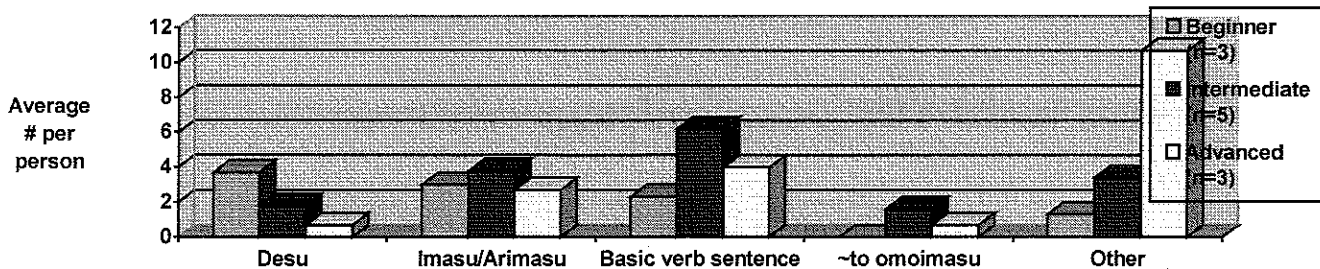
Types of Corrections



Types of Questions



Sentence Types Produced



The first chart shows the types of errors made by subjects in the first task. The most common type of error involved using the wrong particle, or omitting a particle where there should have been one. (By 'particle', I mean the functional elements used in Japanese to mark various roles in the sentence, such as topic, subject, object, destination, location, and so on. Since they were rarely used in my data, I am not including sentence particles.) The beginner students, however, made no particle errors, most likely because they stuck to simple, formulaic sentences. Among beginners, the only production errors in the first task were errors in overall phrase structure, a few of which I will discuss in more detail below. By morphology errors, I mean errors in verb or adjective endings.

The second chart gives a breakdown by type of what the subjects corrected when given a chance. In almost, though not quite, all cases, the corrections were appropriate, and improved the sentences. Again, particle errors were most common, even among beginners; however, many of the particle errors by beginners came from one particular subject, who had taken first-year Japanese three years ago and not taken any more. He contributed half of the particle corrections by beginners.

I will explain each of these categories in more detail and provide examples of the errors students made.

1. Particle errors. In the Japanese classes at Swarthmore (and, in my experience, many or most Japanese language curricula) certain syntactic elements are taught as 'particles.' This category in fact encompasses elements with various different syntactic functions. Many of the most basic particles can be thought of as overt case-markers: *ga* marks nominative case; *o* marks accusative case; *no* marks genitive case (as one of its

uses). Particles are also used to mark what seem like theta-roles, such as location (*ni/de*), goal (*ni/e/made*), instrument (*de*), recipient/beneficiary (*ni*), and source (*kara*). Topics of sentences are marked with the particle *wa*. These markers attach to the end of the constituent they mark. In addition, the question marker *ka* and other elements that can be added to the end of clauses to indicate certain tones in the discourse (such as *yo* to emphasize new information, or *ne* to ask for confirmation) are called particles. Finally, certain elements used to conjoin constituents (such as *to* or *ya* to conjoin DPs, and *shi* to conjoin clauses) are referred to as particles. This is not an exhaustive list; the textbooks used by the Swarthmore program are the *Nakama* books by Makino et. al. (1998), so anyone interested in exactly how these different particles are presented and discussed in the curriculum can start by looking in the textbook. For some linguistic discussion of certain particles in Japanese, see Kuroda (1992).

The majority of particle errors in my production data either involved the use of the nominative marker *ga* on the object of a verb that should have been marked for accusative with *o*, or the absence of the possessive marker *no* when it should have been used:

- (29) *Hitotsu onna-wa tabemono-ga tsukute-imasu.
one-person woman-TOP food-NOM is-making
 ‘One woman is making food.’
- (30) *Tegami-ga yonde-iru.
letter-NOM is-reading
 ‘(She) is reading a letter.’

In (29), the direct object *tabemono* should be marked with *o*, as should the direct object *tegami* in (30). In addition, the DP topic of (29) needs the particle *no* in order to be correct: *hitotsu no onna*. Several subjects made similar errors when attempting to

quantify DPs. The analysis of such errors is tricky, since there is controversy about exactly how DPs and quantifiers work in Japanese; in fact, many theorists have hypothesized that Japanese lacks determiners altogether (Fukui 1988). I will discuss this issue further when I talk about word order errors below. As for the over-use of *ga*, my first hypothesis would be that for some reason some students are producing *ga* as a sort of default marker, which surfaces when they fail to access the specific marker needed in a given sentence. Interestingly, Fukui does classify *ga* as a default marker, with other case-marking particles “really ‘assigned’ by some head” (Fukui 2006, 128; see also Fukui and Nishigauchi 1992). The observation that students over-generate *ga* and under-generate other case particles fits almost surprisingly well with this theory, leading to the question of how students would come to use *ga* as a default marker given that it is not taught as such.

2. Morphology errors. I included in this category any errors in verb or adjective agreement or form. In Japanese, verbs are inflected for tense, but there is no overt agreement with subject or object. In addition, Japanese expresses things like negation and passivization through verbal morphology. Because of the nature of the tasks I gave them, my subjects produced almost exclusively affirmative, present tense sentences, and hence the fact that I found relatively few errors in morphology is not surprising. The main thing that some students had trouble with (mainly in the question/answer task) was the distinction between present progressive forms and basic present tense forms. The basic present tense is not generally used in Japanese to express current actions; it is used rather for statements about habit or about the future. (English similarly favors progressive constructions for describing present actions; Japanese differs in that the

Japanese 'present' tense can be used to refer to actions that will be done in the future.⁹⁾ While sentences using simple present tense were not grammatically unacceptable, in the contexts of the tasks I set, progressive constructions were clearly more natural for most sentences. The first-year students had not yet learned how to form progressive constructions; I did not count their failure to produce these constructions as an error, since the sentences they produced were technically grammatical and represented the only structures they had been exposed to. More advanced students consistently used the progressive form when appropriate, and corrected themselves in the question/answer task if they had failed to use the progressive. Since these students clearly had no trouble forming the progressive construction, and since the natural English equivalents of the questions they were asking use the progressive, it is an interesting question why students would produce some sentences in the simple present at all. One possible hypothesis would be that since simple present sentences are learned first, they become again a sort of default. In this case I would guess that non-linguistic cognitive processes are involved in determining this default; since, for example, the first form of the verb *to write* that students learn is *kakimasu*, the polite present tense form, that is the form that comes most quickly to mind when they think of the verb *to write*. Of course, more detailed investigation would be needed to begin to get at these processes more rigorously. The majority of the morphology errors that students corrected when given the chance in the question/answer task (shown in the second chart) involved present vs. progressive constructions.

In Japanese, some adjectives (called 'i-adjectives' because the present affirmative form ends in *-i*) function as predicates, and are inflected for past tense and negation when

⁹ According to several native speakers I've talked to.

they form the main predicate of the sentence. Because the students used almost exclusively present tense, and rarely used negative forms, there were hardly any errors in i-adjective inflection. The only errors came when students used i-adjectives to modify nouns directly (in which case they function sort of like relative clauses, which in Japanese, unlike English, are not marked by any sort of complementizer). A couple of students used the possessive¹⁰ marker *no* when using an i-adjective to modify a noun, as though the i-adjective were a DP:

- (31) *Kawaii-no neko-ga imasu.
cute-POS cat-NOM exists
 'There's a cute cat.'

A correct version would omit the *no*. Compare to (32) below, in which a noun modifies another noun:

- (32) Konpyuutaa-no hon-ga arimasu.
computer-POS book-NOM exists
 'There's a computer book.'

It seems to me as though in these cases the students were failing to classify the i-adjective as a full predicate, and were treating it as they would treat nominal modifiers. I was not certain how to classify these errors; I counted them as particle errors, since they involve incorrect use of the particle *no*, but they most likely arise because of failure to categorize the adjective properly, and so should perhaps be considered morphology or sentence structure errors.

Finally, in a few cases students over-used either the copula verb *desu/da* or the verb *suru*, which means *to do* and can be attached to some nouns to form verbs. For example:

¹⁰ I recognize that 'possessive' is not a very accurate description of what this element is doing in these sentences; however, this usage seems possibly related to the use of *no* in constructions like *Kaiba no hon*

- (33) * Yamada-san-wa koohii-o nonde suru-ga suki desu ka?
Mr. Yamada-TOP coffee-ACC drinking to-do-NOM liked is Q
- (34) Yamada-san-wa koohii-o nomu-no-ga suki desu ka?
Mr. Yamada-TOP coffee-ACC drinking-NOM liked is Q
 'Does Mr. Yamada like drinking coffee?'

The student who produced sentence (33) corrected it to (34) when given the chance.

Sentence (34) correctly uses *no* (in yet another usage) to nominalize the verb phrase *koohii-o nomu* so that it can function as the subject of the predicate *suki desu*. In (33), the student put the verb into the 'te-form,' a connective form used, for example, in progressive constructions, and attached the verb *suru* to it. As far as I can tell, there is no logical linguistic explanation for the production of sentence (33). The construction *nonde suru* is meaningless and would not appear in any correct Japanese the student had heard. The simplest explanation, I believe, is that the student, not being able to come up with the correct structure (which she obviously knew at some level, given her ability to correct the sentence), simply used the first verb form and vocabulary that came into her head: the te-form *nonde* can sometimes be translated as *drinking* (although as a progressive form rather than a nominalized form), and *suru* is a simple common verb and one of the first learned, and a verb that can often attach to other elements (although not in fact to the te-form of verbs). Given all this, coming up with *nonde suru* rather than *nomu-no* seems logical based on what might have been most accessible to the student's memory that seemed to have close to the right meaning. This mistake, then, can be understood as a failure of memory, and an attempt to fill the gap with the most readily accessible constructions, even though the result has no obvious coherent linguistic analysis.

('Kaiba's book'), and so I'm calling it a possessive marker for lack of a better term.

3. Vocabulary errors. I will not focus much here on the vocabulary errors, most of which are very straightforward cases of students just using the wrong word. I will mention that I counted among vocabulary errors any misuse of the two existence verbs, *iru (imasu)* and *aru (arimasu)*. The former is used for existence of animate things, and the latter for existence of inanimate things. We do not have this distinction in English, and many of the vocabulary errors involved students using the wrong one of these two verbs, in both directions.

4. Phrase structure errors. For this analysis I am most interested in the phrase structure errors, since they may give evidence of what feature specifications the subjects are using in their grammars. Several of these mistakes show clear L1 (English) influence, such as the following, produced by a first-year student, a second-year student, and another first-year student, respectively:

- (35) * Shi onna-no-hito-ga imasu.
four women-NOM exist
 'There are four women.'
- (36) * Wakarimasen donna tabemono desu.
understand-NEG what-kind food is
 'I don't know what kind of food it is.'
- (37) Doko-ni Arisu-san-wa imasu ka?
Where-LOC Miss Alice-TOP exist Q
 'Where is Miss Alice?'

Comparing these with the correct Japanese equivalents in (38)-(40), and with the English glosses, we see that in each case some English word order has been imposed on the Japanese:

- (38) Onna-no-hito-ga yonin imasu.
women-NOM four-people exist
- (39) Donna tabemono ka wakarimasen.

what-kind food Q understand-NEG

- (40) Arisu-san-wa doko-ni imasu ka?
 Miss Alice-TOP where-LOC exist Q

In (36), for example, the student produced a sentence with the matrix verb coming first, before its complement (in this case, a clausal complement), which is the structure of English and not Japanese. In (37), the student fronted the *wh*-word in forming the question, something that we do in English but does not happen in Japanese, where *wh*-words remain *in situ*. The movement in English, as I've discussed, is thought to be triggered by a strong [+wh] feature on the Complementizer (C) node, forcing the *wh*-element to move overtly to [Spec, CP] to check this feature. The strong feature is lacking, however, in Japanese. According to native speakers I've asked, (37) could in fact be an acceptable sentence, hence I haven't marked it as ungrammatical. However, the first-year student who produced it had not been exposed to Japanese sentences with the structure in (37); in the Swarthmore curriculum, when *wh*-questions are taught, they are taught with the topic before the *wh*-word (see *Nakama 1*, Makino et. al. 1998). This fact, coupled with the fact that the student corrected the sentence to the order given in (40) when given a chance, suggests that it is likely she was in fact fronting the *wh*-word as in English, rather than correctly using a slightly unusual Japanese construction that perhaps changes the emphasis from Alice to the location.

What does the fact that the student who produced (37) was able to correct it suggest about her underlying syntactic knowledge? Does that intuition suggest that in fact she's beginning to lose the strong [+wh] setting? It is certainly consistent with that hypothesis. However, it's also consistent with the hypothesis that she retains the parameter setting (explaining why she produced the sentence in the first place), but that

she also has a memory of her teachers or classmates using the structure in (40), and that memory gives her the feeling that her sentence, while consistent with her current interlanguage grammar based on English, doesn't sound quite right in Japanese.

Sentence (35) is somewhat harder to analyze; as mentioned above, the structure of DPs in Japanese is controversial and rather complicated. Sentence (38) gives one possible correct version; another possible correct structure, as I mentioned in the discussion of sentence (29), would be *Yonin-no onna-no-hito-ga imasu*. In the case of sentence (29), I analyzed the error as involving simply the absence of the particle *no* after the quantifier, and classified it as a particle error. However, sentence (29) was produced by a second-year student who had been exposed to quantification in Japanese already. Sentence (35), on the other hand, was produced by a first-year student who had not been taught anything about quantification or seen examples of it in her classes. She used the basic counting number *shi* to mean *four*, rather than *yonin*, which uses the counter for people (*-nin*), and she put the number before the noun *onna-no-hito*, as we would in English. Because it was clear to me that she produced sentence (35) (and several other similar sentences) because she had not been taught how to quantify DPs in Japanese and was plugging in Japanese vocabulary to the equivalent English structure, I classified (35) as a phrase structure error. The question of what is behind errors like that of (29), where more advanced students leave out the particle *no* in quantified expressions, is likely to be more complicated and more interesting. However, I had few examples of such errors, and not enough additional data on my subjects' manipulation of Japanese DPs (relative clauses, for example) to feel able to analyze the subtleties of such errors. For more on DPs in Japanese, see Fukui (2006). For now, the important point about sentence (35) is

that, given that it was produced by a first-year student, I believe it shows additional evidence for L1 transfer in the absence of knowledge of the proper L2 structure. The student had no memorized sentence formula to fall back on for quantified DPs, and so she produced sentences that paralleled the English structure.

In addition to showing L1 influence, I believe that my data illustrates the fact that non-linguistic cognitive strategies are involved in L2 production, specifically at beginning and even intermediate levels. The third chart above shows the percentage of *wh*-questions (as opposed to yes/no questions) produced in the second task. The trend is clear: more advanced learners produce fewer yes/no questions. In my native speaker controls as well, of both English and Japanese speakers, the majority of questions produced were *wh*-questions. All subjects had been exposed to *wh*-questions in Japanese; the only subject who produced exclusively yes/no questions was a second-year student, and by that point in the curriculum *wh*-questions have been covered. Hence the tendency of less advanced students to produce more yes/no questions, which do not seem to be the most natural construction for advanced and native speakers, might be a product of some sort of avoidance of more complex or confusing structures. Yes/no questions can be formed in Japanese simply by adding the question particle *ka* to declarative sentences, and students are introduced to yes/no question formation before *wh*-question formation. It seems likely that the less advanced students are, consciously or unconsciously, opting for structures that they've heard and used most, rather than structures that are more natural responses to the prompt but slightly more complicated to produce. This result is not shocking, but it is interesting to observe that the trend is so clear.

The fourth chart gives a rough break-down of sentence types used in the production task by students of different levels. The categories are as follows:

(i) Desu sentences: *Desu/da* is the copula verb in Japanese. It is also used as a polite suffix to predicate adjectives. I included in this category all sentences simply equating two things or ascribing a simple property to something, such as the following:

(41) Kore-wa kazoku desu.
this-TOP family is
'This is a family.'

(42) Heya-wa hiroi-desu.
room-TOP is-wide
'The room is wide.'

I included the plain form, *da*, in this category as well; only more advanced students spoke in plain form.

(ii) *Imasu/Arimasu* sentences: The verbs *imasu* and *arimasu* (plain forms *iru* and *aru*) mean *to exist*, referring to animate and inanimate things respectively. In this category I included any sentence simply stating the existence of some entity, possibly specifying the location, for example:

(43) Teburu-no ue-ni koohii-ga arimasu.
table-POS top-LOC coffee-NOM exists
'There is coffee on the table.'

(44) Onna-no-hito-ga imasu.
woman-NOM exists
'There is a woman.'

(iii) Basic verb sentences: By this I mean simple sentences using a verb either in the present or progressive tense, such as the following:

(45) Otoko-no-hito-wa shinbun-o yonde-imasu.
man-TOP newspaper-ACC is-reading
'The man is reading the newspaper.'

- (46) Okaasan-wa keeki-o tsukurimasu.
mother-TOP cake-ACC makes
 'The mother makes a cake.'

Again, when plain-form sentences were produced, I included them in the same category. As discussed above, in most cases the non-progressive form, as in (46), sounds awkward in Japanese (as it does in English), and for the most part students beyond first-year produced sentences in the progressive.

(iv) *~to omoimasu* sentences: A common construction not covered by the previous categories is the construction meaning *I think that...*, namely *...to omoimasu*. Since it was common among the more advanced subjects, I gave it its own category, rather than just including it with 'other.' For example:

- (47) Uchi-wa kirei da to omoimasu.
house-TOP pretty is TO think
 'I think the house is pretty.'

(v) Other: Any sentence not fitting the above types, including sentences with embedded clauses, different verb endings, or adjoined modifiers, I group into the category 'other'.

Importantly, the number of sentences in the 'other' category drastically increases as the learners become more advanced. I should note that two out of four of the 'other' sentences produced by beginner students were produced by the subject who hasn't taken Japanese in three years, and they were in fact stock phrases learned on the first day of class meaning *hello*, *nice to meet you*, and hence shouldn't really count as evidence of ability to manipulate different sentence structures. Again, this result is not surprising: more advanced students have learned more verb forms, more vocabulary, more idioms, and should be expected to rely less on basic sentences. However, just because it is not a

surprising result does not mean that it isn't an important phenomenon to be mindful of when analyzing data: since it's clear that the less advanced learners are by and large sticking to simple sentence forms that they have heard many times in class, the absence of errors is not necessarily an indicator of reset parameters or underlying syntactic competence in the L2.

More qualitatively, I felt a clear difference between the production by beginner and (most) intermediate students, and the production by more advanced students. In listening to my subjects produce sentences in Japanese, particularly those in first- and second-year classes, I had the distinct feeling that much of what I was hearing were formulaic structures used over and over again in class, with different vocabulary plugged into them. Some evidence for this was patterns of hesitation, which was usually between sentences or when searching for a particular lexical item, and repetition—once the right vocabulary was found, clauses or constituents were often repeated without the initial hesitation, as though to make sure they fit the pattern correctly. This contrasted with the production by the native control groups, both of native English speakers (doing the task in English) and native Japanese speakers, and even with the production by some of the most advanced students. Both the advanced students and the controls had a noticeably higher incidence of seeming to build up their sentences as they went, sometimes starting a sentence one way then backtracking and changing the structure. I would theorize that a certain comfort with the syntactic structures of a language is necessary in order to, in some sense, muse out loud; the less advanced students seemed less able to quickly manipulate and modify structures, so they needed to be sure of what they were saying before actually saying it. Of course, this impression is hard to quantify or prove

definitively, particularly without further detailed investigation. A further observation is that in the more advanced students, this qualitative ability to muse aloud and not sound like every sentence is based on a memorized pattern is not correlated with mastery of the grammar: the most advanced students made more particle and vocabulary errors than either of the other groups. My subjective impression was that since these students were attempting to piece together complicated sentences as they went along, they were more likely to come up with the wrong particle, or to lose track of how their clauses fit together. Of course, at some point it becomes hard to tell what to count as an error; the speech of native speakers is full of clauses that are started and never finished, and I would need to work more closely with native speakers of Japanese in order to tease apart what sounds like an actual error, and what just sounds like musing out loud.

Overall, I believe that my data supports an initial state of L1 transfer, and very tentatively supports the possibility of parameter resetting. While the vast majority of students, especially past the first year, had no apparent trouble producing correct Japanese SOV order or leaving *wh*-words in place, the evidence for the influence of drilled sentence patterns makes it hard to reach any firm conclusion about the actual interlanguage grammars of these students. In the next section I briefly discuss possible future follow-ups to my study that might help clear up some of the questions about the influence of non-linguistic cognitive factors and get at the actual state of the interlanguage grammars.

3.1 Future Research

Given time to follow up this pilot study with a more extensive one, I would want to examine more carefully the evidence that many of the sentences produced are produced correctly because the patterns have been memorized, and not because the learners have internalized the syntactic structures of Japanese. One next step would be to examine more closely the textbooks and other materials that the students have used in their classes, to verify whether indeed the types of sentences they most often produce have been drilled in the classroom exercises. Additionally, more targeted judgment or preference tasks might be able to test specifically for ability to manipulate phrases. To have such a test be effective, I would need to find some construction that theoretically a student with only intermediate or beginner knowledge of the language might be able to parse, if she'd internalized the Japanese feature values, but which students would be unlikely to have come across in their textbooks. Such constructions may be quite difficult to come up with. Still, it would be interesting to see whether, when faced with some sentence type they've never been explicitly taught, students tended more to fall back on L1 analyses, or were able to intuit the correct Japanese analyses, or perhaps seem to guess randomly. Finally, I would like to be able to make my impressions about a change in the nature of hesitation and repetition as students get more advanced more rigorous and precise. Given more time I could go through my data and actually tabulate any instances of hesitation or repetition and where they occur in the structure. I am not certain that I would find anything very enlightening, but I believe it is possible that there really is a point at which students start being able to build up complex structures as they speak, and perhaps such an analysis would help illuminate that transition somehow.

4. Conclusion

I have surveyed various theories concerning the initial state and the process of parameter resetting in L2 acquisition. Overall, my own data fits nicely with the most promising of those theories: it shows evidence of L1 influence; it is consistent with the possibility of the acquisition of feature strengths different from those in the L1; and it seems to show strong influence of memorized sentence patterns and avoidance of more complicated structures. My data also highlights some of the frustrations and difficulties of looking for evidence about the syntactic elements of L2 acquisition: it is hard, if not impossible, to tease apart the linguistic and non-linguistic processes involved in L2 production. It is additionally hard to isolate syntactic knowledge, since production is also limited by knowledge of vocabulary and morphology. We have seen that several of the theories about parameter resetting in L2 acquisition suffer from the problem of being almost impossible to prove or disprove.

Since it is such a challenge to get at the syntactic aspects of learning a new language, we might ask what is to be gained by trying. There is, I believe, a theoretical answer and a practical answer. On the theoretical side, as I mentioned in the introduction, a deeper understanding of our ability to learn new languages would enhance our picture of how language fits into our brains. For example, if new parameter values can be acquired, that suggests that the potential we have at birth to learn any natural language is not lost after we learn our first language, which in turn might suggest something about what does or doesn't happen neurologically during first language acquisition. In addition, less biologically and more linguistically, studies of second language acquisition could help support certain theoretical frameworks of syntactic

theory over others. For example, White's (1992) results, showing that French-speaking learners of English by and large disallowed verb raising over negatives or to the front of yes/no questions but allowed verb raising over adverbs, could be seen as providing support to the split-Infl hypothesis that proposes an agreement phrase below the tense phrase. In this way, studies of how syntactic structures are learned can help shed light on which analyses of syntactic structures seem most empirically accurate.

More practically, the closer we get to an understanding of exactly how the language faculty is involved in learning new languages, the more effectively we can target instruction to facilitate learning. If there is good evidence for a full access model, for example, then perhaps the most effective language teaching methods would involve mainly immersion and exposure to enough primary linguistic data to trigger resetting. If, however, the constructionist model is on the right track, then perhaps explicit instruction and practice with a wide range of constructions will most quickly lead learners to be able to manipulate structures in the L2. If there is, in fact, no possibility of actually learning new feature specifications, then language programs would need to work extra hard to help learners compensate with other cognitive strategies. Also, given the evidence for L1 transfer, it seems likely that the most effective programs would take into account specifically the most salient differences between the L1 and the L2, and target the instruction and the data students are exposed to in order to address those differences. All of these questions are of significant practical import for people working on teaching and learning new languages.

Appendix: Data Transcripts

Subject 1 (2nd)

Notes: Japanese grandparents

Kore wa...mmm...e ga desu. e desu kazoku ga imasu. shoshite takusan koto ga shite imasu. okaasan to otousan wa kodomo ga, uh, kodomo to hanashiteimasen kara...asa deshous...eto...uh...teburu no tsukue ni coohii ga aru, futatsu no onna no hito ga hanashite iru. hitotsu onna wa mm...tabemono ga tsukute imasu ga...wakarimasen donna tabemono desu. eto...kawaii no neko ga totemo takai no....ga imasu...asonde imasu. soshite, chotto, uh, toshi o totte iru umm, otoko no hito ga shinbun o yonde imasu kara, tabun, umm, tabun, umm, wakarimasen. eto, ah, kodo—ah, onna no ko ga, hirugohan...bag no naka ni hirugohan ga...uh, mm, tot—ah, toritai desu ga, onna, uh, okaasan wa motte imasu kara, totte—toremassen? hai. uh, kore wa chotto henna kazoku to omoimasu. uh...hai. demo uchi...uchi wa kirei da to omoimasu. takusan haru—no, hana, hana ga aru, soshite, uh, uh, eto, umm, asa, asa da to omoimasu. kodomo wa, gakkou ni, gakkou ni...

- 1) tanaka-san to yamada-san wa doko ni imasu ka?
gakkou ni imasu
- 2) uh, tanaka-san wa nani o yonde imasu ka?
manga o yonde imasu.
CORRECTION: ?
- 3) eto, tanaka-san wa nani o tabemasu ka?
ringo o tabemasu.
- 4) tanaka-san wa, nani o shina...uh...nani o shite imasu ka?
nete imasu.
- 5) uh, yamada-san wa donna shigoto o suru desu ka?
CORRECTION: shimasu ka?
sensei da to omoimasu
- 6) yamada-san wa nanji ni jugyou ga hajimarimasu ka? or, yamada-san no jugyou wa nanji ni hajimarimasu ka?
juu ji han ni hajimarimasu.
- 7) yamada-san no jugyou wa omoshiroi desu ka?
iie, omoshirokunai desu.
CORRECTION: omoshiroku arimasen
- 8) yamada-san wa coohii no hou ga mizu o nomu no ga suki desu ka?
CORRECTION: koohii to misu to dochira no hou ga suki desu ka?
coohii no hou ga suki desu.
- 9) tanaka-san wa donna ongaku ga suki desu ka?
beatles to poppsu no ongaku ga suki desu.
- 10) eto...tanaka-san to yamada-san wa...ummm...tomodachi desu ka?
hai, tomodachi desu.

Subject 2 (2nd)

Notes: watches some anime

kono e no naka de kazoku ga imasu. kazoku wa...rokunin kazoku desu. shoshite, neko ga imasu. anou...onna no ko ga imasu. onna no ko wa...no...yeah...onna no ko wa...haha—or, okaasan ni hanashite imasu. demo, okaasan wa otousan to kiss o shite mo imasu...no, oshite mo imasu, hai. anou...teburu no chikaku ni, onna no hito ga hutari imasu. issouni hanashite imasu. mm, ryouri o tsukute ite, kami o yonde imasu. teburu no ue ni, coohii to huutou ga arimasu. mado no mai ni, puranto ga arimasu. anou...toshi o toru otoko no hito ga ite, shinbun o yonde imasu. anou...mm...hmm. kodomo wa t-shatsu o kite ite, pants, uh, zubon o haite imasu. anou, toshi o toru otoko no hito wa megane o kakemasu. anou...kono kazoku wa ureshii sou desu. mmm, doa ga shimat—shimatte imasu. er, yeah, shimatte imasu. anou...hmm. mmm....

- 1 uh, yamada-san to tanaka-san to hanashite imasu. tanaka-san wa, hon...er, yeah, hon o nisatsu arimasu. tanaka-wan wa nansatsu hon ga arimasu ka?
tanaka-san wa hon ga nisatsu arimasu.
- 2 onna no hito wa nani shite imasu ka?
CORRECTION: nani o shite imasu
onna no hito wa hon o yonde imasu.
- 3 onna no hito wa nanika tabemasu ka?
hai, nanika tabemasu.
CORRECTION: tabete imasu
- 4 anou...onna no hito wa nani shite imasu ka?
CORRECTION: nani o shite imasu
onna no hito wa nete imasu.
- 5 sensei wa chalkboard no ue ni nani o kaiteimashita ka?
konnichiwa o kaite imashita. or, kaimashita?
CORRECTION: kakimashita
- 6 Anou...nan nichu desu ka? or no, not nichu, not nichu. nanji ni...wait...nanji ni desu...wait, nan...no, sumimasen. nanji ni desu ka?
CORRECTION: nanji desu ka
juuji san juu...juu...yeah, san juuppun desu.
- 7 anou...konno onna no hito no gakusei wa, donna gakou ni ikimasu ka?
konno onna no hito no gakusei wa, koukou gakkou ni ikimasu.
- 8 konno onna no hito wa nani o nomimasu ka?
coohii o nomimasu.
CORRECTION: (tentative) nonde imasu
- 9 otoko no hito wa, donna ongaku o kikimasu ka?
beatles no ongaku o kikimasu.
- 10 uh, nannin imasu ka?
hutari imasu.

Subject 3 (2nd)

Notes: native language spanish; moved here when four; took night class (8 hours); some anime and music.

anou...kore wa, uh, uh, kazoku umm...to...umm...uh, uchi de kazoku wa, umm...ryouri o tsuku—ahh, tsukute, ahh...shinbun o yonde, uh...anou...hmm...atte shimasu. suru da to omoimasu. suru to omoimasu. anou...umm...o, o, o...mm...haha, okaasan wa, anou, ryouri o tsukurimasu, uh, keeki o tsukutta to omoimasu. anou...okaasan no chikaku ni tomodachi ga imasu. anou...umm, kami o mite imasu. anou...tomodachi no...no mae ni, coohii ga, coohii to tegami ga arimasu. anou...umm, o...o...sohu wa shinbun o yomimasu. anou...megane o haite...haite imasu. anou...umm...umm...uh, hurui hito sou desu. anou...anou, doa no chikaku ni, ah, otousan ga, umm, hai..hai...hairimasu. anou, ah, okaasan, umm, okaasan ni aimasu. anou...umm...

- 1 anou, ah, umm, tanaka-san wa doko...uh, tanaka-san no ue ni doko ga imasu ka?
CORRECTION: dare
anou, yamada-san ga imasu.
- 2 anou, anou, ah, kimura-san wa donna hon ga yonde imasu ka?
CORRECTION: o
ah, manga no hon ga...o yonde imasu.
- 3 anou, honda-san wa, anou, donna tabemono o, uh, tabete imasu ka?
CORRECTION: nani o
ringo o tabete imasu.
- 4 anou, doushite anou...sakura-san wa umm, tsukarete imasu ka?
kinou no ban takusan benkyoushita kara...desu kara.
CORRECTION: benkyoushimashita kara desu (?)
- 5 anou...umm...umm, tanaka-sensei wa, uh, umm, ah, nani o, uh, kai—kaimashita, uh, kakimashita ka.
konnichiwa to iu...kakimashita.
CORRECTION: to kakimashita
- 6 anou...nanji desu ka?
juuji han desu.
- 7 anou, ah, uh, kimura-san wa nani o mite imasu ka?
koukou o...no sign o mite imasu.
- 8 anou...umm...kimura-san wa umm, nani o uh nonde imasu ka?
coohii o nonde imasu.
- 9 uh, sumisu-san wa, anou, ah, donna ah ongaku o kiite imasu ka?
beatles no ongaku o kiite imasu.
- 10 anou...ah, ummm, sumisu-wa...sumisu-san wa, umm, nani o suru nagara umm, kaneko-san umm, o, ni, umm, hanashite imasu ka?
CORRECTION: nani o suru ka nagara
anou...cora o nomunagara, nominagara kaneko san to hanashite imasu.

Subject 4 (1st)

Notes: 2 years in middle school

uh.....umm.....doa wa, doa no hidarigawa ni neko ga arimasu...ga imasu.....uh.....uh, ch...shi onna no hito ga imasu. ni otoko, uh....otoko no hita ga imasu. ichi mado desu. ichi doa desu. ichi teburu desu.

hmm.....hajimemashite. douzo yoroshiku. umm.....watashi no neko wa....kuroi desu. watashi no inu wa oranji desu.

- 1 tanaka-san no noto wa, wa doko desu ka?
tanaka-san no noto...ie, uh...kyoukasho no shita ni noto desu.
- 2 kimu-san no manga wa uh...doko desu ka?
um, uh, kimu-san no mae ga imasu.
CORRECTION: ni
- 3 uh...tanaka-san no apple wa umm...iro....tanaka-san no apple, uh, dochira kara irasshaimashita ka?
fuji kara kimashita.
- 4 kyoukashou wa doko desu ka?
onna no hito no shita ni arimasu.
- 5 otoko no hito wa da—dare? dare desu ka?
uh...uh, sensei desu.
- 6 umm...tokei wa...uh, dare no desu ka?
uh, sensei no tokei desu.
- 7 kaban wa dare no desu ka?
um, tanaka-san no...desu.
- 8 uh, coohii wa dare no desu ka?
kimu-san no desu.
- 9 umm...isu ga.....umm...isu ga doko desu ka?
CORRECTION: wa
uh, uh sumisu-san no shita ni desu.
- 10 uh...koko, uh, kouka wa dare no desu ka?
tanaka-san no desu.

Subject 5 (2nd)

Notes: went to japan for a month last summer; watches anime

hmm...kono kazoku wa, ichi ni san shi go...uh, rokunin kazoku desu.
anou...ahh...um...eh...umm...dadada...obaasan wa kukki o tsukuru sou desu. soshite, ah, chiisai onna no ko wa uh, okaasan ni hanasu sou desu. eto, chichi wa shinbun o uh, yonde...imasu. eto...neko wa uh, sara no ue ni imasu. e...hmm...ureshii kazoku desu. eto, chichi wa shigoto ni iku sou desu. eeto...uh...hmm. nani ga...? eto mado wa, uh, shimeteimasu. eh...kuramo ga arimasu. mm, soshite, oyuu ga, uh, waka...wakanai. okaasan wa atarashii kodomo ga, uh, iku tsumori desu. e..to...uh...uh...dede...teburu no ue ni, uh, koohii ga arimasu. eto, mm, obaasan to ojiisan wa kazoku, or, mm....kazoku to uh, uh, sunde iru to omoimasu. ah, soshite, hmm...

- 1 ah, mm, tanaka-san wa nani o yomimasu ka?
eh, tanaka-san wa shukudai no hon o yomimasu.
- 2 hmm...kono hito wa manga ga suki desu ka?
hai, manga ga suki desu.
- 3 eh, kono hito wa ringo o, uh, owaru ikimasu ka?
uh, iie, owaru ikenai.

- CORRECTION: oete
- 4 kono hito wa, byouki desu ka?
iie, byouki ja nai, demo, totemo nemui desu.
- 5 uh...kono sensei wa yasashii sensei desu ka?
ee, yasashii sou desu.
- 6 eto, nanji desu ka?
eh, juuji han desu.
- 7 uh...kono, uh, kono hito wa, koukousei desu ka?
ee, koukousei desu.
- 8 eto, asagohan o tabemashita ka?
iie, tabemasendeshita, demo, ima koohii o nomimasu.
- 9 uh, eto, kono hito wa kurashiku ongaku ga suki desu ka?
iie, rokku ongaku ga suki.
CORRECTION: rokku no ongaku
- 10 ee...kono otoko no hito wa, tomodachi desu ka?
ee, tomodachi desu.

Subject 6 (3rd)

Notes: watches anime; visited japan for two weeks in high school

Uh, kono shashin wa, uh, takusan hito ga iru ne. ah, mado no ue ni hachiue ga aru da to omoimasu ga, hachiue no kotoba wa itsumo wasuremasu kara...hachiue da to omoimasu. ah, neko-chan mo sara no ue ni imasu. sore wa, chotto, umm...komatte...sugu komatte ni naru sou, ne. ah, otousan to ojiisan wa, uh, shinbun o...yomimasu, demo doushite...tatte, tatte imasu ka...okaasan wa kodomo ga ite, mou sugu, ah, motto kodomo ga iru deshou. soushite otousan wa shigoto ni ikimasu. hen na kutsu o kite..kite iru. ah, ah, futari onna no hito wa, nanika tsukute iru sou desu. soshite, tegami, tegami ga yonde iru. watashi no okaasan wa daigaku ni itta, itta te, maishuu ni tegami o kaite...uh, totemo ii desu ga, watashi wa mezurashii koto henji o okurimasu ga, chotto warui desu. watashi wa warui ko desu. ah...doushite, takusan hito ga imasu ka? ah, onna no hito wa recipe toka tegami o yomimasu. ah, san nensei to ninensei no toki, nihongo no sensei wa journal o kakisase...sasemasu kara...journal ga amari suki ja nai n desu. ga...jou-sensei wa recipe no koto o kakisasete, um, watashi no tomodachi no pasta ??? no recipe o kakimashita.

- 1 yamada-san to tanaka-san wa nan no kankei ga aru deshou ka?
tabun, doukyuusei desu.
- 2 kono onna no hito wa nani o shite imasu ka?
CORRECTION: nani shite
ah, yomimasu.
- 3 ah, nani o, ah, doushite waratte imasu ka?
ringo wa henna aji ga arimasu.
- 4 ah, itsu, kyou itsu nemashita ka?
CORRECTION: kinou
tabun, goji ni nemashita.
- 5 ah, nan no jugyou o totte imasu ka? or, oshiete imasu ka?

- ichinensei no nihongo no jugyou o oshieru, oshiemasu.
- 6 ima nanji desu ka?
ima juuji han desu.
- 7 ah, ima nani shite imasu ka?
koukou o owaru toki ni matte imasu.
CORRECTION: (tentative) ga
- 8 kono nomimono wa nan deshousu ka?
koohii deshousu.
- 9 kono hito wa nan to kikimasu ka?
beatles ni kiku...kikimasu.
CORRECTION: o
- 10 ah, nan no koto o hanashite iru deshousu?
ah, nomimono no koto.

Subject 7 (through 3rd)

Notes: native language Korean; watches japanese TV; went to japan this summer.

kono on o mite imasu. uh, hon no naka ni wa onna, jousei no hutari ga imasu. hitori wa, eh, aru kami o yonde imasu shi, hoka no onna no hita wa sonna onna no hito o minagara, nanika o tsukute imasu. teburu no ue ni koohii to huutou ga aru no...mite, eh, ah, soko kara, sono onna no hito wa tegami o yonde iru, to iru no o, iu no o wakarimasu. eh, doa no mae ni wa...eh, kazoku ga miemasu. otoko no hito wa, sono onna no hito ni kiss shite, eh, sono onna no hito o, hito no yoko ni wa kodomo ga sono onna no hito ni hanashi o kakete imasu. mm...kono bashou wa kitchen to iu no o wakarimasu. iroiro na kazai to eh, tubu?? ga miemasu. eh, hon...e no hidarigawa ni wa otoko no hito ga shinbun o yonde imasu. hitori de yonde imasu. amari tanoshiku miemasen. mm...eto...kono, e wa tabun kazoku no e deshousu. demo...toshi o mite, amari...ton...tonna kankei ka wa amari wakare...raremasen....nani, nan no hanashi mono kangaeraremasen kedo...kangaeraremasen kedo...na, na...dareka no tanjoubi mitai desu. kodomo no tanjoubi kamoshiremasen. onna no hito ga, hu, eh, hukuro? o motte imasu. puresento kamoshiremasen kedo, te...tada hutsuu no peepaa hukuro da kara, amari daiji na mono wa haite inai you desu. mae no onna no hito ga tsukute iru no wa keeki kamoshiremasen ga, nan no kudamono mo miemasen shi, tada nanika o mazete imasu. mm...tegami wa, eh, tanjoubi no tame ni dare ka ga nani ka o kaite ita no kamoshiremasen. nani..eh...mmm...otoko no hito wa, eh, ojiisan kamoshiremasen, demo nan no puresento mo nai desu.

- 1 yamada-san wa tanaka-san ni nani o kiite imasu ka.
nan no benkyou o shite iru ka o kiite imasu.
- 2 onna no hito wa nani o yonde imasu ka?
manga o yonde imasu.
- 3 yoshie-san wa nani o tabete imasu ka?
ringo o tabete imasu.
- 4 onna no hito wa doko de nete imasu ka?
eh, tsukue, isu, tsukue no mae no isu de nete imasu.
- 5 sensei wa kokoban ni nani o kakimashita ka?

- “konnichiwa” to kakimashita.
 6 ima wa nanji desu ka?
 juu san ji desu...sanjuppun desu, juuji sanjuppun desu, hai.
 7 ah, onna no hito wa...nansai desu ka?
 koukousei to mieru kara, juuyonsai desu, ah, juunanasai desu.
 8 onna no hito wa nani o nonde imasu ka?
 ocha o nonde imasu.
 9 otoko no hito wa dare no uta o kiite imasu ka?
 beatles no uta o kiite imasu.
 10 otoko no hito wa nani o shite imasu ka?
 otoko no hito wa nominanagara tomodachi to oshaberi o shite imasu.

Subject 8 (through some of 3rd)

Notes: spent a summer in Japan after first year

ah....e ga aru. eto, ah, nihongo zenbu wasurechatta kedo...ah...ah, hitobito ga iru...toka, neko mo iru. toka...ah, ah...onna no hit—to tachi,
 ah...hanashiteiru...ah...furui otoko no hito ah, yonde iru...ah, no, ah, soshite...ah, chotto omoshirokunai e desu...ah, da kara...anou...ah...sonna tepu ah, inai...ii kara, chotto...ah, mou ikkai, hanasu. anou, ah, nihongo zenbu wasurechatta, kedo...ah, kotoba, dake. demo, burakku-san wa, ah, atama ga itai koto ah...yokunai. anou, nani o, ah, ah, nan ni tsuite ah, hanasu ka wakaranai...kedo, ah...jaa, kono e wa....ah, ah...hai, iroirona hito ga iru...ah, ah, ah, ah.....itaria-go dake ah...hanashitai kedo....ah, wakarimasen, wakaranai.

- 1 ah...yamada-san shi tanaka-san no...kotoba wasurechatta...eto...ah, yamada-san toka, ah, yamada-san shi tanaka-san ah, nani o, nani ni tsuite hanashite iru?
 ah, yamada-san shi tanaka-san ahh...sukina koto ni tsuite hanashite.
 CORRECTION: wa
 2 anou...onna no hito, ah, wa, nani o yonde iru?
 manga o yonde iru.
 3 ah...anou, onna no hito ah...nani ni tsuite kangae...teru
 ringo ga suki ni tsuite kangaeru.
 CORRECTION: kangaeteiru
 4 ah...onna no hito ah...wa, ah...ah...nemui desu ka?
 hai, onna no hito nemui desu.
 5 anou, ah, nihongo no sensei desu ka?
 hai, nihongo no sensei desu.
 6 ah, nanji desu ka?
 anou, ah, juuji han desu.
 7 anou, onna no hito wa, ah, ah, doko desu ka?
 ah, koukou desu. koukou...hai, koukou ni...desu.
 8 anou, onna no hito koohii ga suki desu ka?
 hai, koohii ga suki...desu.
 9 ah, otoko no hito beatles ga suki desu ka?

hai, beatles no ongaku ni, ah, beatles no ongaku ga suki desu. kotoba wasuremashita.

10 anou, ah...kono hito nani o shite iru?
ah, hanashite iru.

Subject 9 (through 1st year, several years ago)

Notes: a bit of anime in high school

ummm....eto....ah....watashi wa borkowski-san desu. eto, atto wa, ato, minna-san wa, mm, umm....ah.....?? hito wa, umm, umm, tadaima, ah, hana...hana...hanashimasu. mmm.....ah.....watashi wa borkowski-san desu. watashi wa yonensei desu. umm...mm, watashi, ah, watashi wa, umm, porando-go hanashimasu...porando-go to umm, doitsu-go hanashimasu. iie nihongo hanashimasu. mmm.....on, onna no hito wa, umm, eh, cooking umm...aruimasu? to, ato, ato de, umm....letter, it's not coming back, umm...letter brief umm...kakimasu? I dunno, I'm not sure, I don't remember the verbs. ummm...umm.....

1 umm...yamada-san wa, umm, daigaku no umm...umm...hito wa desu, hito desu ka?

CORRECTION: daigaku gaku desu ka?
tanaka-san wa, umm...professor desu ka.

CORRECTION: ne

2 umm, manga wa suki desu ka?

CORRECTION: ga

hai, manga ga suki desu.

3 uhh...yamada-san wa, umm, uhh...ii pantsu no, umm...gakki desu ka?

hai...ii pantsu wa...ii pantsu desu.

4 yamada-san ga, umm, ii neru ka?

CORRECTION: wa nemasu ka?

hai, neru da yo.

CORRECTION: nemasu yo

5 yamada-san wa, umm, 'konnichiwa' ga umm...uh....hanasu desu ka? hanasu ka?

hai, konnichi wa hanashimasu.

CORRECTION: hanasu yo

6 uhh...yamada san wa umm.....uh, yamada-san wa, umm.....umm...sumimasen.

7 yamada-san wa umm, koukou eh...kanji ni mie....uh, yamada-san, yamada-san ga eh...ato, kanji hanasu desu ka?

hai, yamada-san wa hanashimasu.

CORRECTION: hanasu

8 umm, yamada-san wa umm...umm...ii umm, coffee

umm...umm...umm.....umm...nemasu ka?

umm...hai ii coffee nemasu.

CORRECTION: ga

9 umm...yamada-san wa umm, beatles to, umm, kakimasu ka?

uh, hai beatles ga, beatles wa, ga, kakimasu.

CORRECTION: o

- 10 hmm...umm...yamada-san to uhh...koichi-san wa
 umm...hmm...ii...umm...daigaku no gakkou desu ka?
 uhh, iie, umm...iie, umm, ????? daigaku no gakkou desu ne.

Subject 10 (2nd)

Notes: once-a-week class in high school, went to japan summer 2006

kono e ni kazoku desu. ah, chichi wa shinbun o yonde iru. soshite okaasan wa musume ni hanashiteiru. musume wa kanojo no repooto o yonde imasu. ah, doa de, ah, kanojo no kare wa kanojo ni kiss shite imasu. neko ga imasu. neko wa sara no ue ni suwatte imasu. mado ga haiteimasu. eto...eh, koohii wa teburu no mae ni, umm, imasu—arimasu. ah...hmm...okay, uh, musume wa, umm...mm...haha ni musume no hanashi, musume no hanshi wa totemo omoshiroi to omoimasu. haha wa ah, totemo tanoshisou to omoimasu. mm...haha wa, uh, kazoku no gohan o tsukute imasu. umm...chichi wa megane ga arimasu. umm...mm...tabun, umm...tabun nichiyoubi desu. soshite, shigoto o shin...shigoto o shite wa ikemasen. umm...ahh.....mm.....okay, umm...kodomo no toki watashi no kazoku mo nichiyoubi ni onaji e ga...imasu, mm....tanoshikatta desu.

- 1 yamada-san wa tanaka-san no musume desu ka?
 iie, musume ja arimasen.
- 2 ah, yamada-san wa ah, kono manga ga suki desu ka?
 hai, suki desu.
- 3 yamada-san wa ringo ga suki ja arimasen ka?
 hai, suki ja arimasen.
- 4 yamada-san wa jugyou chuu ni nete imasu ka?
 hai, nete imasu.
- 5 yamada-san wa 'konnichiwa' o kaite imashita ka?
 iie, tanaka-san wa...kaite imashita.
 CORRECTION: kakimashita
- 6 hmm...ah, ima juuji han desu ka?
 hai, juuji han desu.
- 7 umm, ah, yamada-san wa koukousei desu ka?
 hai, koukousei desu.
- 8 yamada-san wa koohii o nonde suru ga suki desu ka?
 CORRECTION: nomu no
 hai, suki desu.
- 9 yamada-san wa beatles no ongaku o kiite imasu ka?
 CORRECTION: ni
 hai, kiite imasu.
- 10 ah, yamada-san to yamada-san no tomodachi wa ah, juugyou ni imasu ka?
 iie, toshokan ni imasu.

Subject 11 (1st)

Notes: some vietnamese native-ly-ish; watched anime, listened to music

.....onna no hito ga imasu. umm.....o, mado no, mado no...ue ni, ue ni, migigawa ni neko ga imasu. mado wa akarui desu ne.otoko no hito, uh, otoko no hito wa newspaper o yomimasu.kono heya wa hiroi desu ne. umm, kono e wa, mm, omoshiroi desu. omoshiroi ja nai desu. uh.....onna no hito wa uh, koohii o nomimasu. mmm,aishiteru? family? teburu ga arimasu. doa ga arimasu. teburu wa, doa, doa no chikaku ni teburu wa, teburu ga arimasu. mmm.....?? no ue ni, basuketto ga arimasu.

- 1 yamada-san to tanaka-san hana, hanashite....mmm.....yamada-san wa kirei, oh, yamada-san wa kirei desu ka?
hai, kirei desu.
- 2 michiko-san wa manga o yomimasu ka?
hai, michiko-san, uh, hai, yomimasu.
isu to, isu no chikau ni kaban ga arimasu. uh, michiko-san no kaban wa....akai desu ka?
iie, akai, akaiku arimasen.
CORRECTION: akaku
- 3 arisu-san wa ringo o tabemasu. mmm...ah...isu ga arimasu ka?
hai, sou desu.
- 4 uh...umm....uh, arisu-san, arisu-san o...arisu-san o nemasu. doko ni arisu-san ga imasu ka? or, doko, doko ni arisu-san ga imasu ka?
CORRECTION: arisu-san wa doko ni imasu ka?
kyousetsu ga arimasu, or kyousetsu ga imasu...
- 5 mmm...umm...tanaka-sensei wa, konni—tanaka-sensei wa konnichiwa kai, kai, kaiteiru, kaimasu. tanaka-sensei wa takai desu ne? kouban wa...kouban wa ookii desu ka?
CORRECTION: kakimasu
hai, ookii desu.
- 6 nanji desu ka? tana, tanaka-san, sumimasen tanaka-san, nanji desu ka?
juuni, juuni happ, juuni han desu. arigatou gozaimasu. or, juuji han desu.
- 7 maitsu, uh, michiko-san wa benkyoushimasu. umm...nani ga, nani ga benkyoushimasu ka?
nihongo, nihongo o benkyoushimasu.
- 8 umm, maioko-san wa nani o nomimasu ka?
koohii o nomimasu.
- 9 umm...yamada-san wa beatles, beatles ga suki. yamada-san wa suteki desu ka?
hai, suteki desu. totemo suteki desu.
- 10 yamada-san to tanaka-san wa tomodachi desu, ka?
iie, tomodachi arimasen.
CORRECTION: tomodachi wa ja nai desu.

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