

A Note on Parameters

(Material taken from Chapter 8 ‘Minimum of English Grammar’, ms. 2008, Galasso)

Generativist vs. Constructivist: A Converging Theory

In brief, Constructivists’ accounts assume that grammatical knowledge initially consists of ‘constructions’ derived at by high frequency data-driven forms in the environment. While there may be internal mechanism which undergird such constructions, according to the constructivist view, the processes behind language acquisition are essential environmentally driven. The general idea is that language is built-up ‘piece-meal’ insofar as constructions (i.e., sound-to-meaning links) are based on similar phonological-to-semantic distributions found in the language input. It is their general claim that such a correlation between sound and meaning is strictly associative, and that it holds between the quantity and quality of the exemplars obtained of particular constructions with the constructions of more general schemes that underlie language use. The constructivist model therefore assumes a ‘bottom-up’ cognitive scaffolding of language learning (somewhat akin to what Piaget had earlier claimed regarding a cognitive underpinning to language development. See also Chomsky vs. Piaget: 1975).

Generativists’ accounts, on the other hand, differ with constructivist models in one very simple respect—their models credit the speaker with having tacit syntactic knowledge, unrelated in any way to frequency or data-driven constructivist claims which define language as being tethered to cognition. Generativists in this sense draw upon (innate) parameter-setting mechanisms, as opposed to (environmental) data-driven mechanisms, thus continuing the debate on ‘nature vs. nurture’ with respect to language (in general) and to language acquisition (in particular). Generativists maintain two versions of a general language development model; both versions speak to a more innateness (top-down) account of language acquisition in which the acquisition and formulation of rules is the cornerstone of the theory. (For a fuller discourse regarding Generative vs. Constructivist models of language acquisition, see Chapter 9).

The Dual Mechanism Model: Data-driven vs. Parameter-setting

The Dual Mechanism Model (DMM) of late has become a dynamic touchstone of sorts in determining how language processing naturally assorts itself in the brain. The field of psycholinguistics has long been interested in this question. More recently, approaches in the classification of language disorders have enormously benefited from the DMM (see below, Dyslexia, Aphasia, SLI, and Williams syndrome). The following is a ten-point outline of some of the major tenets behind the DMM:

(339) Ten-point Outline on the Dual Mechanism Model

1. Language is modular in nature and generally occupies two regions of the brain, the frontal lobe and the temporal lobe. The frontal lobe houses the more formal language area known as Broca's area (front lobe, left hemisphere) where it is now widely accepted that the more abstract levels of language and transformational computations get processed. Abstract levels in this sense are reduced to all rule-based procedures which make-up formal syntax.
2. Syntax (par excellence) typically entails all inflectional processes—namely, suffixes which attach to verb stems to make Present Tense {s} (*She walk-s*), Past Tense {ed} (*She walk-ed*), Aspect/progressive (*She is walk-ing*), Aspect/perfect (*She has walk-ed*), Voice/passive (*She has be-en walk-ed*) etc. Also, other abstract levels of syntax are responsible for Case (*I-me-my, He-him-his*) and Agreement of Number (the plural {s} *two car-s*) and Agreement of Person (*I go* but *She go-es*).
3. It is viewed that all such formal processing of syntax is situated in Broca's frontal-lobe region of the brain. This area is the only known area that seems to be able to handle and compute the highly abstract, rule-based nature of syntax. (To recap rule-application in child grammars, see the 'Wugs Test' below. Also see (25) regarding the 'Sally Experiment' where it was shown that only the rule-based/frontal-lobe inflectional-{s} got optionally dropped in ESL contexts, as opposed to the stability of the rote-learned/temporal-lobe-{s} which made-up the word stem. (Recall, one interesting side-note to this distinction of lexical vs. functional {s} is that saliency, or the lack thereof, cannot be given as an explanation behind the distribution, since both /s/'s are phonologically similar). These observations which treat linguistic material in a dual capacity are what is essentially behind the notion of a DMM.
4. The 'Wugs Test' (Berko 1958) basically set out to prove B.F. Skinner wrong. Skinner, in maintaining a strong Behaviorist agenda, relied on Stimulus & Response (S&R) mechanisms base on Association and Frequency Learning in order to explain child language acquisition. In a nutshell, Skinner viewed the child's learning of language as mere repetition and imitation based on reinforcement of the target language. Berko set out to do more than just disprove this theory. She also set out to show that the child's grammar was a grammar onto itself in ways that had never previously been discussed. The 'Wugs Test' examines what happens to children's syntax when they are presented with a nonce-word (a novel, made-up word created for the sake of an experiment). The nonce-word was Wug (depicting as a bird-like creature). The crucial point here was that the children would not have had the opportunity to simply repeat the word along with an appropriate plural inflection {-s} since for Skinner, the child would have to access two lexical storage/retrieval capacities—one for the bare word stem (whether it be Noun or Verb, or any other part-of-speech word), and a different lexical storage capacity for all other remaining grammatical components associated with the given word-stem (e.g., Plurals {s} for Nouns and Tense {s/ed} for Verbs, etc.).

Skinner's main point here was that both storage capacities would nonetheless be driven by a unifying S&R mechanisms based on association and reinforcement. In other words, lone stems as well as all stem/inflections were simply memorized. Well, in order for a plural inflected nonce word 'Wug-s' to have been somehow memorized by the child, it must have been part of the child's input in the first place. (That is, it must have been somewhere produced by adults. Of course, the nonce-word is not part of the adult lexicon). The major contribution of the experiment seems ridiculously subtle at first flush, however, it doesn't take long to see where the major finding resides—[Q]: How could a child produce the plural {s} on the nonce-word 'Wug-s' if the child has previously had no exposure to that exact formulaic [stem + affix] chunk in the input? The subtlety here lies in the response—[R]: The plural {s} must attach to the nonce-word not via S&R, but rather via a much more abstract process that manipulates variables, as with rule-based analogies: the (regular) rule for plural equates to [Noun+{s}]. This simple observation helped to establish a counter argument to Skinner and prompted others to take the emerging Chomskyan linguistic revolution very seriously. (See Chomsky vs. Skinner debate, Chomsky 1959). (*Note*: In addition to the manifestation of an inflectional syntactic rule, young children also carry out an implicit phonological rule known as assimilation: this rule-based process is attested by the fact that when the nonce-word 'wugs' is produced by the child, it gets pronounced /w^hgz/, with the phoneme /s/ assimilating to /z/ due to voicing. (See §11.2 Assimilation)).

5. However, there has been a 'rekindling' of spirit toward Skinner in recent years as it has to do with the DMM. The fact that a rule-mechanism (correlated to frontal-lobe activity) is required in order to deliver functional inflection, may not shed light on the whole story. There was always an aspect to Skinner that was widely accepted, even to Chomsky. But because of the nature of the debate—with everything hinging on the seemingly 'winner take all' mentality—Chomsky was all too happy to reveal Skinner's flaw (his myopic, unrelenting notion that S&R could explain all learned behavior) and unleashed the kind of child-data Berko would provide that eventually triggered Skinner's descent. To be fair to Skinner, his sole problem was that he overestimated S&R in language. He would posit a theory that was much too strong and all encompassing—basically, by saying that all of language was equally reducible to S&R.

Chomsky, on the other hand, always understood the power of S&R (the vast wealth of empirically testable observation that Skinner would co-opt in the laboratory were not imaginary, but indeed very well, cf. Pavlov). But the problem with Skinner was that he would in no way water-down his S&R for any amount of innate learning; he was an empiricist through-and-through. (Even staunch proponents of current behaviorism accept, to a limited degree, the idea that some amount of innate material must be present (*a priori*) in order to fashion an S&R learning mechanism). This 'rekindling' of Skinner, as mentioned above, has come about recently due to (i) a better understanding of the modular make-up of the brain/mind and (ii) how qualitatively different

aspects of language get processed in different areas of the brain.

6. *Pro Skinner.* The DMM takes its duality from the fact that some aspects of language are indeed simply memorized, using Skinner's S&R tactics. Vocabulary is without doubt based on a pure association-driven learning mechanism which associates phonology to semantics (word to meaning). Using fMRI (functional Magnetic Resonance Imaging), a clear picture emerges showing that meaning-based vocabulary is stored and retrieved in the temporal-lobe regions of the brain. It is this region that seems to partake in associations once claimed by Skinner.
7. A second and much more intriguing aspect of language that shows-up in the same temporal-lobe is the Irregular Noun and Verb construct. The fact that such constructs are not rule-governed suggests that they are memorized in some capacity as chunks, similar to vocabulary. S&R effects do seem to cross-over into irregulars, as attested by errors such as *ring>rang>rung => *bring>brang>brung*.

This sometimes embarrassingly common error shows up even in the best of us and is a sure sign that S&R is a powerful mechanism: (the S&R stems from the sound pattern association of #ing>#ang>#ung). (While recently reading a government file by a past prominent U.S. senator, I came across a passage where 'eye' was used instead of the pronouns 'I'. Here, there error could be attributed to a higher frequency of the substantive sound-form association of a 'lexical word' (eye) as opposed to a 'functional word' (I). (A similar error based on high frequency/association is found in the common erroneous use of *of* in the sentence "**I of been thinking of you...*" (=*I've (have) been thinking of you*). Again, such errors are motivated by a high-frequency displacement of the two competing words (lexical *of* vs. functional '*ve/have*'). The power of S&R is what allows us to quickly insert *Mary* after the names '*Peter, Paul and __*'. (Notice how seemingly mindless the insertion of the word 'Mary' is produced: it is essentially 'knee-jerk-like' in nature. Irregular Nouns such as *sheep, fish, children*, are similarly memorized as chunks in the form of stems. The plural markers of these words are thus encoded in the meaning of the stems (*per se*) and are not open to the same rule mechanism found with regular plural markers.

8. Along with vocabulary and irregular words, tests have revealed that Derivational Morphology, as it differs with Inflectional Morphology, also shows signs of a strict one-to-one association that is not rule-governed. For instance, the word '*brother*', a simple single-morphemic noun stem and the word *teach-er*, a double-morphemic noun seem to be located in the same regions of the brain—the temporal-lobe. What is of interest here is that it had been assumed that since *teach-er* is a stem [teach] plus affix [er] that some form of rule process would have to be at work here for the storage and retrieval of the word plus stem (a potentially dual processing).

The assumption is wrong: it turns out that since derivational morphology is more based on substantive/associative meaning (i.e., Skinner), it mimics plain word stems in its function and processing. In other words, it seems to be the

- case that derivational words are simply memorized as chunks based on a one-to-one association—viz., the words *teacher* and *brother* identically map.
9. *Pro Chomsky.* On the other hand, Inflectional Morphology is much more abstract in nature and relies on rule-governed processes. For instance, whereas the word *teach-er* may be located in the temporal-lobe region of the brain (along with all other vocabulary stems), the plural form of the word *teach-er-s* would have a dual-track process: (i) the derivational stem *teacher* would activate the temporal-lobe memorization processes (Skinner) while the plural {s} inflectional affix would activate the frontal-lobe rule-based process (Chomsky). It is the nature of this dual-processing that has spawned much of the debate surrounding notions of the DMM. (It goes without saying that Chomsky considers language to be strictly defined by notions of syntactic rule-governance. Anything short of syntax, for Chomsky, cannot, by definition, be language. Much confusion has arisen over terminology here, particularly when topics of language vs. communication are being debated. So, even if Chomsky were to afford Skinner his S&R, in Chomskyan terms of what constitutes a ‘Language’ (with a capital “L”), nothing would hinge on it: viz., while mere S&R may be active for associative vocabulary learning, there exists no component of S&R which comes reasonably close to how language is defined.)

The distinctions are worth noting. For Chomsky, one of the quintessential defining features of human language is its syntactic *dislocation property*—namely, the fact that phrases can be articulated in one position but interpreted as if they were somewhere else (e.g., the dislocated subject of a passive construction *Mary was kissed by John* where it is *John* (and not *Mary*, which otherwise occupies the surface subject position) that gets interpreted as being the subject of the sentence: *John kisses/*Mary kisses*.

This also brings to mind how aspects of animal communication are treated: although it may be based on S&R, it can’t be a true language system due to the absence of syntax.

10. Finally, much of the research coming out of the DMM has been useful for the diagnoses and classification of Language Impairments (synopsis below):

(340) Data-driven vs. Parameter-Setting

What we mean here by ‘data-driven’ in the context of language has to do with how we believe the brain/mind might go about the mental processing of language. For instance, if we believe that the metaphor “what goes in come out” for language works in a strict one-to-one iconic fashion, then one might suspect that data-driven styles of learning would lean on the actual frequency of the language input in order to derive the language output (again, “*what goes in comes out*”). However, when examined more closely, much of language seems to be generated by other internal factors that may or may not have a direct correspondence to the environment—leading to the aforementioned debate headed under Skinner vs. Chomsky: (the

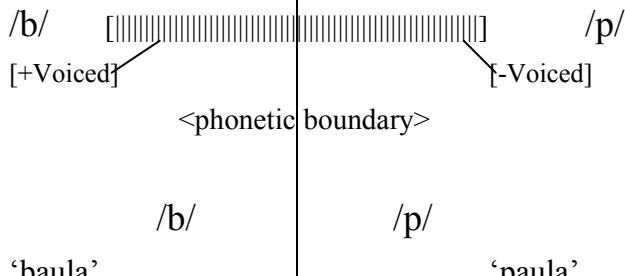
single minded debates fall under a variety of labels, such as nature vs. nurture, top-down vs. bottom-up processes, environmental vs. rule-based, etc., in Chomskyan terminology, Principles & Parameters. In keeping to the limited amount of space in this section, let's just consider some fundamental aspects of parameter settings that involve language in general.

Phonological Parameters

Speech Perception and the differences between categorization and speech recognition can best be understood in the context of parameters. For example, let's consider what we know about how Spanish and English processes differently two seemingly similar sounds. In Spanish, one could say that the [voice] feature of the bilabial /p/ is much more voiced (referred to as voice onset time or VOT) when compared to its English [-voiced] counterpart. For instance, in comparing the words *paula* vs. *baula* (a nonce word (=made-up)), though the Spanish speaker would say that the two initial bilabial plosives are different, to the (American) English ear, the two sounds would be very similar, if not identical (both sounding as *baula*). How can we explain the fact that speakers of different languages actually hear sounds differently—again, recalling the idea that if sounds are just environmental, there should be no potential discrepancy. The fact of the matter is that speech sounds are ‘rule-based’ (in Chomskyan terms) and therefore are parameterized and come to take-on much more abstract entities of representation in the minds of the speakers. The steps leading to abstraction of sound away from the actual objective source (as found in the environment) and toward some form of inner-mental representation involves the parameter settings of speech. In a nutshell, what can be said here is that the Spanish parameter having to do with VOT allows the [[-voice] projection] to cross-over onto an otherwise [[+voice] projection]—thus, making the /p/ sound in Spanish sound /b/ to the (American) English ear.

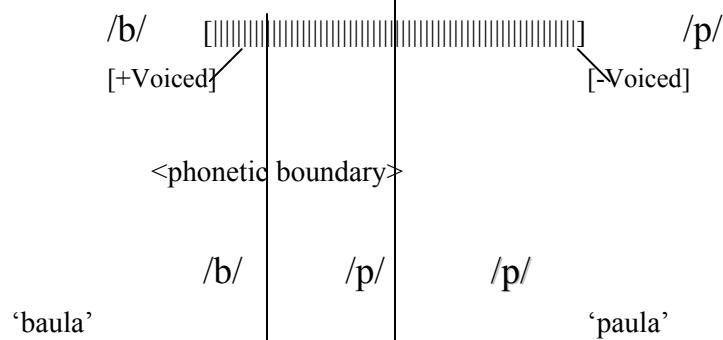
(341) Parameter & Target Phoneme: (American) English to Spanish Overlap

English



(342) Parameter & Target Phoneme: Spanish

Spanish



In sum, the above illustration attempts to show just how the two sounds can be perceived differently, as based upon the organization of the sound template. For the American-English speaker, the /p/ vs. /b/ phonemic pair (a distinction based on +/- voicing) is clearly separated (positioned respectively on opposing sides of the boundary). That is, there is no [+voicing] features allowed to cross-over onto the other [-voice] side of phonemic processing. This notion of measurable voicing is referred to as the Voice Onset Time (VOT) of a particular phoneme. For instance, the phoneme /b/ has an earlier VOT as compared to /p/. On the other hand, Spanish speakers, by virtue of having a more robust [+voicing] VOT acceptability for otherwise voiceless phonemes, allow a certain amount of overlap between the two voicing features. (It is always interesting to play this scenario out in the classroom and have Spanish speaking students pronounce the name ‘Paula’ for the class, and then have them pronounce the name with a [+voice] bilabial plosive /b/ (Baula): it never fails, the two words appear to the ‘American-English ear’ to be identical sounding (much to the chagrin of the Spanish speaking student)).

Morphological Parameters

Morphological inflection carries with it a portmanteau of parameters, each individually shaping the very defining aspects of language typology. For instance, English is roughly considered a minus inflectional language given its quite sparse inflectional paradigms (such as verb conjugation, agreement, etc.) Tracing languages throughout history, it is also worth noting that morphological systems tend to become less complex over time. For instance, if one were to examine (mother) Latin, tracing its morphological system over time leading to the Latin-based (daughter) Romance language split (Italian, French, Spanish, etc), one would find that the more recent romance languages involve much less complex morphological systems. The same could be said about Sanskrit (vs. Indian languages), etc. It is fair to say that, at a general rule, languages become less complex in their morphological system as they become more stable (say, in their syntax). Let's consider two of the more basic morphological parameters below: The Bare Stem and Pro-drop parameters.

Bare Stem Parameter. The Bare Stem Parameter is one such parameter that shows up cross-linguistically. It has to do with whether or not a verb stem (in its bare form) can be uttered. For example, English allows bare verb stems to be productive in the language—for instance, they may be used both in finite conjugations—with the exception of third person singular, where a morphological affix {s} is required—(e.g., *I/you/we/you/they speak-Ø*), as well as in an infinitival capacity (e.g., *John can speak-Ø French*) etc. In these examples, no morphological inflection is needed to attach onto the verb. It is in this sense that we say the verb is bare. In English, this bare verb stem is lost in other conjugations such as third person singular (*She speak-s*), “to” infinitives (*John likes to speak*), past tense (*John spoke*) where a vowel change infix is inserted), etc. The fact that English permits bare verb stems tells us something about the larger morphological system in English in a number of ways.

Firstly, the fact that verbs often go uninflected tells us that English is considered to have a parameter setting of [-INFL] (minus inflection, or weakly inflected). (Note: This [+/-INFL] parameter should be considered as a third morphological parameter and has to do with whether or not verbs take a sufficient amount of inflection on their stems). This setting differs with Spanish or Italian in the sense that those languages do not permit bare verb stems (e.g., *Habl- (from Hablar (=to speak)) *Parl- (from Parlare (=to speak))). Spanish and Italian (respectively) require some form of morphological material to attach to the verb stem, otherwise, the form becomes ungrammatical (as marked by an asterisk *). In this sense, Spanish and Italian belong to a classification of languages which set their parameter to [+INFL] (plus inflection, or strongly inflected, and thus a [-bare stem]).

Secondly, this single parameter setting is implicated in the triggering of a second related parameter—the pro-drop parameter.

The Pro-drop Parameter. It is of no coincidence that [+INFL] languages also have their Pro-drop Parameters set to [+Pro-drop]. This positive setting of this parameter means that the language allows Subject Pronouns to be deleted in declarative sentences: e.g., Spanish: (*Yo*) *Habl-o English* (I speak English) where the subject/pronoun *Yo* (=I) can be (optionally) dropped; Italian: (*Io*) *Parl-o English* (where the subject/pronoun *Io* (=I) can be (optionally) dropped). The correlation between the [+INFL] parameter and the [+ Pro-drop] parameter holds in the following way: if a language has a morphological paradigm rich enough in inflection so that there is a co-indexing of subject to verb agreement—as we find in the Spanish paradigm where first person/singular *Yo* co-indexes with the first person/singular inflected verbal affix {-o} in *Habl-o*—then dropped subjects are recoverable in the verbal morphology and thus need not be made phonologically explicit in the syntax (e.g., \emptyset *Hablo English*). Italian likewise co-indexes subject to verb (e.g., *Io Parl-o English* > \emptyset *Parlo English*). Since English has a [-INFL] parameter, there is no way for the morphological system to recover a lost subject. In other words, owing to weak morphological inflection, (a [-INFL] parameter setting), English is forced in maintaining a phonologically expressed explicit subject (e.g., *I speak English* vs. ** \emptyset Speak English*). The only exception we find to this rule in English entails the imperative, where subjects may be dropped (e.g., *Close the door please*). In these structures, the subject is understood to be second person (singular/plural) due to the very nature of the ‘asking of something’ (the first person *I*) ‘from somebody’ (the second person *You*). Generally speaking, as a morphological rule, the parameter settings between the co-indexing of [+INFL] and [+Pro-drop] holds for most languages.

There is an interesting footnote here to the extent that German, an otherwise richly inflected language [+INFL] (as shown below) does not hold to the aforementioned correlation between [+INFL] and [+Pro-drop]. The fact that German doesn’t allow for subjects to be dropped, notwithstanding the fact that it too is considered a richly [+INFL] language, must then speak to other morpho-syntactic issues that separate German from other Latin-based richly inflected languages. We shall not get into what these possible morpho-syntactic distinctions are, but only note here how German is indeed a richly inflected language (in line with Spanish or Italian), while, at the same time, showing the behavioral status of a [-INFL] related ‘non-pro-drop’ language. Consider the +/-INFL paradigm below first showing **Pronoun**, **Pro-drop**, and **Subject-Verb Agreement** relations. We follow-up with a brief word on the **German ‘Noun’ Case** system.

Richly Inflected Languages: [-INFL] vs. [+INFL] showing Pro-drop Status
(taken from **Agreement** Part 2, §4.2.3)

(343)

Verb: (English): *Speak*

| | | [-INFL] ⇔ [-Pro-drop] |
|--------------|------------------------------|-----------------------|
| | <u>Subject</u> ⇔ <u>Verb</u> | |
| • 1st Person | [-Pl]: I | speak \emptyset |
| | [+Pl]: We | speak \emptyset |
| • 2nd Person | [-Pl]: You | speak \emptyset |
| | [+Pl]: You | speak \emptyset |
| • 3rd Person | [-Pl]: He | speak s |
| | [+Pl]: They | speak \emptyset |

Verb (Spanish): *Habl-ar (Speak)*

| | [+INFL] ⇔ [+Pro-drop] | |
|------------|------------------------------|------|
| | <u>Subject</u> ⇔ <u>Verb</u> | |
| (Yo) | habl | o |
| (Nosotros) | habl | amos |
| (Tu) | habl | as |
| (Vosotros) | habl | ais |
| (El) | habl | a |
| (Ellos) | habl | an |

Verb (German): *Arbeit (work)*

| | [+INFL] ⇔ [-Pro-drop] | |
|--------------|------------------------------|------------|
| | <u>Subject</u> ⇔ <u>Verb</u> | |
| • 1st Person | [-Pl]: ich | arbeit e |
| | [+Pl]: wir | arbeit en |
| • 2nd Person | [-Pl]: du | arbeit est |
| | [+Pl]: ihr | arbeit et |
| • 3rd Person | [-Pl]: er | arbeit et |
| | [+Pl]: sie | arbeit en |

Verb (Italian): *Parl-are (speak)*

| | [+INFL] ⇔ [+Pro-drop] | |
|--------|------------------------------|------|
| | <u>Subject</u> ⇔ <u>Verb</u> | |
| (Io) | parl | o |
| (Noi) | parl | iamo |
| (Tu) | parl | i |
| (Voi) | parl | ate |
| (Lui) | parl | a |
| (Loro) | parl | ono |

German ‘Noun’ Case System

German has maintained a strong ‘Noun’ Case system throughout its history, very much unlike many of its European counterparts which have since reduced their Case systems to marking Pronouns only. For instance, English, now only marks case on Pronouns (e.g., subject/Nominative ‘I’ vs. object/Accusative ‘me’ and possessive/Genitive ‘my’). The latter example here in which the English paradigm for Pronoun Case has extended to the Determiner class (i.e, where ‘my’ marks for Genitive Case) has its historical roots dating back to German where Determiners

still today mark Nouns for Case. In other words, while English has reduced its case system to covering only Pronouns and Possessive nouns (via the genitive determiner class), German has maintained a strong case paradigm across the board whereby nouns and not just pronouns receive case. It is also important to note that, unlike English, German nouns have three possible gender features (masculine, feminine, neuter). This also differs with gender in English where only the third person singular pronouns ‘she’, ‘him’ mark for Gender.

In German, one can tell the case distinction of a given noun (i.e., whether or not it is a subject or an object) by looking at the related ‘Masc(ule)’ determiner (noting that only ‘masculine’ determiners, a class which by far outnumbers ‘Femine’ determiners, provide this case distinction).

German ‘Noun’ Case via Definite Determiners

(344)

| | Masc | Fem | Neu | Plural |
|-------------|-------------|------------|------------|---------------|
| Nom. | der | die | das | die |
| Acc. | den | die | das | die |

An example of how one could read the case paradigm is provided below. Notice that word order is not an issue given that case is now marked via the determiner.

(345) (a) Der Hund beißt den Mann → The dog bites the man.

(The dog bites the man)

(b) Den Mann beißt der Hund. → The dog bites the man.

(The man bites the dog)

If word order were an essential means of deriving the meaning of these two sentences, assuming an SVO order, one should generate sentence (b) as ‘*The man bites the dog*’, just as we derived sentence (a) to mean ‘*The dog bites the man*’. In fact, in German, word order can be replaced by Case marking whereby subjects receive the (masculine) nominative determiner ‘der’ and objects receive the accusative determiner ‘den’. Since the accusative case is based only on masculine singular determiners, case can’t be determined by feminine, neuter or plural determiners alone. In such contexts, word order seems to be applicable.

It is also interesting to note that while the German noun is sensitive to case as indicated by its matrix masculine determiner class, it is not sensitive to case as marked on the Feminine 3rd person singular Pronoun: ‘sie’ (she) and ‘sie’(her) (note the overlap in the chart below). In fact, ‘sie’ also marks for the English counterpart

3rd person plural nominative/accusative ‘they/them’ (sie). So while German may be more sensitive to case on the noun (instead of relying of word order), it seems English is much more sensitive to case as it relates to Pronoun usage. For an example, consider the third person Pronouns in German below marking *Nominative*, *Accusative*, *Dative* and *Genitive* Case (as compared to English):

(346) German Case (3rd person Pronouns)

| Case | Masc. | Fem | Neut. | Plural |
|-------------|--------------|--------------|-------------|-----------------|
| Nom | er (he) | sie (she) | es (it) | sie (they) |
| Acc | ihn (him) | sie (her) | es (it) | sie (them) |
| *Dat | ihm (to him) | ihr (to her) | ihm (to it) | ihnen (to them) |
| Gen | sein (his) | ihr (her) | sein (its) | ihre (their) |
| | | | | |

* **Dative case** has to do with how certain verbs mark for the receiving or giving (of an object). Hence, ‘ihn’ and ‘ihm’ translate respectively into ‘him’ as in (‘I like him’) and ‘ihm’ as in (‘I gave the book to him’). Both are considered accusative but with the latter showing dative case. Dative is sometimes referred to as **oblique case** in which a DP/Pronoun is preceded by a Preposition.

Syntactic Parameters

Syntactic parameters mostly have to do with how words are to be strung together. Hence, the mentioned syntactic parameters are inherently going to involve the phrase structure level and word order. As earlier presented in §2.5.2, the main word order parameter has come to be described as the Head Initial Parameter.

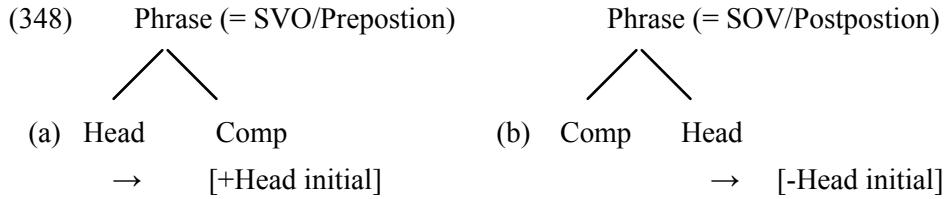
Word Order. Languages across the world can take on a number of word order variations. For instance, English is an SVO (Subject-Verb-Object) word order (e.g., *S-John V-kissed O-Mary (PP on Saturday)*), whereas Japanese is an SOV (e.g., *S-John O-Mary V-kissed (PP Saturday on)*). Irish, for example, maintains a VSO order and German maintain both SVO and SOV orders depending on the type of clause. All other possible word orders do show-up across languages, with some types being more common than others. In formalizing word order as a proper parameter setting, the mechanism that’s come to be associated with the order relies on describing how phrases are organized. Before we can move on, we need to spell-out exactly what we mean by phrase structure organization. The phrase is traditionally broken up into two parts (the H(ead) and the Comp(lement)). The head word is said to label the P(hrase)—so that, for example, if you have a head as a preposition, then, by definition, you would have a P(repositional) Phrase (PP) (with

the complement being whatever grammatically follows the head). (In the case of the PP, a DP-object would serve as the complement). Recapping from earlier discussions, consider some general phrase structures:

(347) Phrase structures

- | | | | |
|----------|---------------|---|---------------------------|
| (a) VP | \rightarrow | $[(\text{head}) \text{ V} + (\text{comp}) \text{ N}]$ | [VP [V] [N]] |
| (b) AdvP | \rightarrow | $[(\text{head}) \text{ Adv} + \text{V} + (\text{Adv})]$ | [AdvP [Adv] [V] [(Adv)]] |
| (c) DP | \rightarrow | $[(\text{head}) \text{ D} + (\text{comp}) \text{ N}]$ | [DP [D] [N]] |
| (d) AdjP | \rightarrow | $[(\text{head}) \text{ Adj} + (\text{comp}) \text{ N}]$ | [AdjP [Adj] [N]] |
| (e) AuxP | \rightarrow | $[(\text{head}) \text{ Aux} + (\text{comp}) \text{ V}]$ | [AuxP [Aux] [V]] |
| (f) PP | \rightarrow | $[(\text{head}) \text{ P} + (\text{comp}) \text{ DP}]$ | [PP [P] [DP]] |

Consider the structure of a phrase below showing both Head and Complement positions:

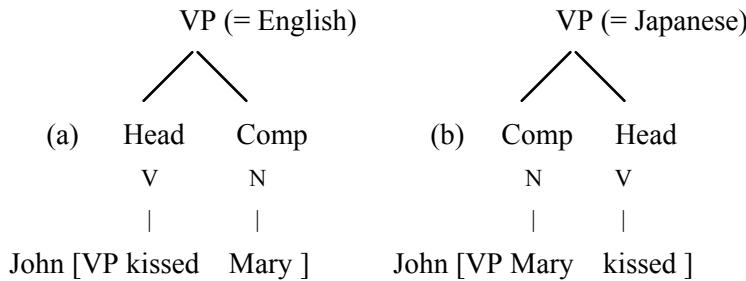


In considering the phrase structure in (a), we find the head comes first (moving left to right). This Head first order is referred to as the parameter setting [+Head initial] (as opposed to [-Head initial] found in structure (b)). Since English abides by an SVO word order, the phrase structure parameter must be [+Head initial], given that a potential Verb and its subsequent Object— (both elements making up a Verb Phrase (VP)—would be ordered Verb-Object, (with the (head) verb being positioned before the (complement) Object).

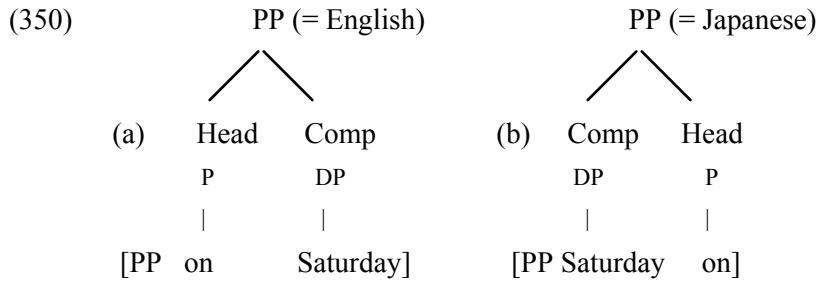
Consider below a reduced English VP showing [+Head initial] as compared to Japanese [-Head initial]:

(349) English ‘Head initial’ vs Japanese ‘Head Final’

Token sentence: ‘John...VP—kissed Mary PP—on Saturday’



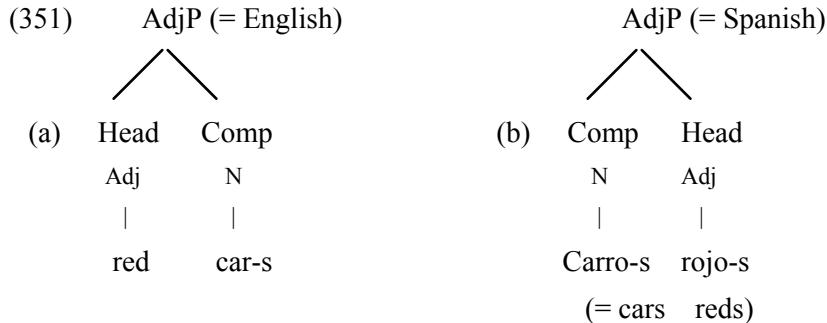
Equally, consider the two types of prepositions, ‘pre’ and ‘post’ positional (respectively), where in English the head of a PP would come in initial position (hence, the term ‘Pre’-position), whereas the head of a PP in the Japanese paraphrase would come in final position (hence, the term ‘Post’-position):



- (a) John kissed Mary on Saturday. (b) John Mary kissed Saturday on.

In summary, it is an appropriate setting of the [+/-Head initial] parameter that renders a language either SVO or SOV etc. In addition to these phrase examples above, there are some languages which may allow multiple settings. One case in point is Spanish. Spanish is typically considered as an SVO word order, like English, but there are some exceptions to be made to this. For instance, Spanish does seem to allow VP [-Head initial] SOV structures when the Object is in its weak form (e.g., pronoun form): *(Yo) te amo* (=I you love) and not **(Yo) amo te* (=I love you). This could be described as an example of Object movement where the Object raises from its base-generated lower position in the tree (SVO) and situates above the Verb (SOV). Spanish Adjectival Phrases likewise set their head initial parameters to [-Head Initial], like Japanese.

Consider the Spanish Adj(ective) Phrase below: ‘John has two [AdjP red cars]’ .



(Note that the Spanish Adjective inflects for plural number {s}. This double inflection on both noun and adjective is a result of the [+INFL] setting on Spanish as discussed above. The Spanish plural {s} also would inflect on a Possessive DP, e.g., on the first person singular possessor ‘mi’ (*mi-s/my carro-s/cars rojo-s/red*) maintaining +INFL and +AGR throughout the entire DP).