

397LH L1 and L2 topics

Week 5. UG and L2A:
Background, principles, parameters,
access, transfer

Universal Grammar

- Human capacity for language
- Nearly all of the background motivation for the existence of UG comes from consideration of L1A.

Universal Grammar and L2A

- How much like L1A is it?
- Is UG involved in L2A like it is in L1A?

Universal Grammar and L2A

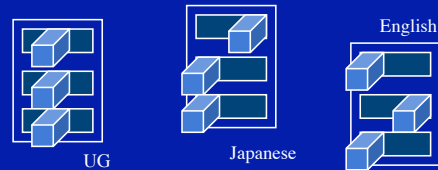
- **Immediate concerns:** L1A is fast, effortless, and uniformly successful, whereas (adult) L2A seems to be slow, effortful, and typified by incomplete success. If UG is involved, why are they different?

Universal Grammar and L2A

- This all seems to lead to an initial guess that “UG,” the mechanism that prompts the rapid acquisition of L1, is not operative in L2A.
- Let’s look closer at what UG is, and what evidence we can find.

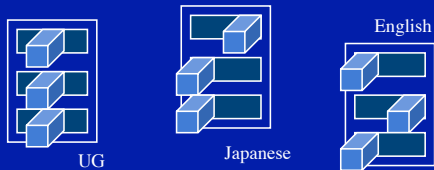
Principles and Parameters

- The model of language we’re working with is one in which languages are for the most part *the same*, but differ in the settings of certain parameters, such as word order.



Principles and Parameters

- This model is called “Principles and Parameters” and these are the “Parameters” part.



Principles and Parameters

- The **parameters** are only a part of the story, however; these allow us an explanation of
 - a) why languages seem to differ in such limited ways
 - b) how children are able to acquire their first language so quickly.

Principles and Parameters

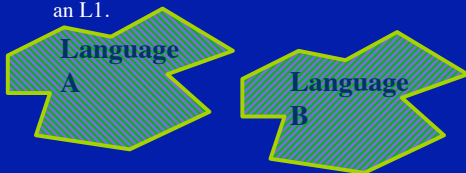
- The other part of the story are the **principles**. The idea is that all languages are systems which have certain properties and obey certain principles, the identification of which has been one of the main concerns of formal linguistics.

Principles

- The principles of language are *invariant*—they are the same for all grammars. Children do not need to learn these, these are part of the genetic endowment.

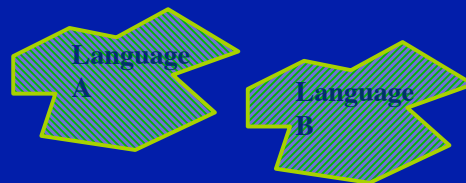
Principles and Parameters

- Recall the illustration from before—the principles are represented by the “shape” of the language knowledge; only languages with this “shape” (with these principles) can be learned as an L1.



Principles and Parameters

- The parameters are represented by variation within the confines of the shape (in the picture, the direction of the pinstripes).

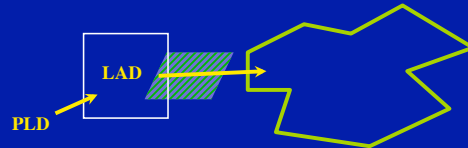


UG and L2A

- So, UG *provides the parameters* (and *provides the options* for each parameter) within the framework of the universal principles.
- We can distinguish this conceptually from the mechanism which converts the speech a child hears into the settings of parameters (the Language Acquisition Device, LAD).

Another picture from before

- The **L**anguage **A**cquisition **D**evice (LAD) takes the Primary Linguistic Data (PLD) to determine the settings of the parameters (in L1 acquisition).



In case this seems too easy

- It is also conceptually possible that the *only* thing genetically specified is the LAD, which sets parameters, but is designed to only learn a grammar which has that specific shape.

What are the principles like?

Structure dependence

- An example of a principle is the principle of **Structure Dependence**.
- Sentences have (hierarchical) *structure*.
- A sentence like *Mary ate the sandwich* has a subject (*Mary*) and a verb phrase (*ate the sandwich*); the verb phrase has a verb (*ate*) and an object (*the sandwich*). **VP**.

Structure dependence

- The subject noun *Mary* can be replaced by much more complicated noun phrases, yet in each case they play the same role in the sentence (picking out the eater of the sandwich).
 - *Mary* ate the sandwich.
 - *The student* ate the sandwich.
 - *The boy on the hill* ate the sandwich.
 - *The woman I met in Newton* ate the sandwich.

Structure dependence

- Rules that affect the word order of the sentence always take into account the *structure* of the sentence.
- The standard example is yes-no question formation:
 - The auxiliary (*is, are*) or modal (*might, will, should, ...*) after the subject is placed before the subject.

Structure dependence

- Mary will eat the sandwich.
- Will Mary eat the sandwich?
- The student will eat the sandwich.
- Will the student eat the sandwich?
- The woman I met in Newton will eat the sandwich.
- Will the woman I met in Newton eat the sandwich?

Structure dependence

- The point is that all rules respect the *structure* of the sentence—there are no rules which will take the first occurrence of *is* and put it in the front of the sentence, even though such rules might be consistent with a lot of examples of yes-no questions.
 - Is the cat hungry?
 - Is the cat who is scratching at the door hungry?



Structure dependence

- So, **structure dependence** is a principle of grammar, it is a principle of UG. All natural languages obey this principle; that is, all natural languages have the property of being structure dependent.
- This principle does not seem to have any parameters. It is an **invariant principle**.

Binding Theory

- John saw himself.
 - *Himself saw John.
 - *John said Mary saw himself.
 - *John said himself saw Mary.
 - *John saw him.
 - John said Mary saw him.
 - John said he saw Mary.
- Binding Theory, Principle A:** Anaphors (like himself) need an “earlier” antecedent within its binding domain.
 - Principle B:** Pronouns (like him) *cannot* have an “earlier” antecedent within its binding domain.
 - Parameter:** Binding domain = sentence containing

Binding Theory parameter: the domain for anaphors

- Sam believes [that Harry overestimates himself]
- 
- Sam-wa [Harry-ga zibun-o tunet-ta to] it-ta]
 Sam-top Harry-nom self-acc pinch-past-that say-past
 ‘Sam said that Harry pinched (him)self.’
- 

Binding theory parameter: the domain for anaphors

- So, Principle A (anaphors need an antecedent in their binding domain) and Principle B (pronouns must not have an antecedent in their binding domain) are Principles, provided by UG. They are operative in all languages.
- What defines the binding domain varies by language:
 - English = smallest clause (sentence)
 - Japanese = entire sentence

Word order

- Languages can also differ in word order.
- English: Subject Verb Object
 - Word order parameter: VO
- Japanese: Subject Object Verb
 - Word order parameter: OV

“Access” hypotheses

- **No access hypothesis.** UG is not involved in L2A.
 - The end of the critical period marks the end of the availability of UG for language learning purposes.
- **Full access hypothesis.** UG does not change; it is “accessed directly” during L2A.
 - L1A and L2A are fundamentally similar processes.
- **Indirect access hypothesis.** UG *per se* is not involved in L2A, but UG shaped L1 and so properties of UG reflected in L1 are available during L2A.
- **Partial access hypothesis.** Only part of UG is available for L2A; some parts are unavailable (for example, some parameter setting options).

“Transfer” hypotheses

- Where does L2A *start*? What is the *initial state of second language acquisition*?
- A L2’er has a first language already...what effect does this have? The first language is grammatically described as a set of parameter settings—what role do the L1 settings play?

“Transfer” hypotheses

- **Full Transfer:** The initial parameter settings (and principle inventory) are transferred from L1. L1 is the starting point for the L2 IL.
- **No Transfer:** The initial parameter settings (and principle inventory) are independent from the L1. Parameters are either unset or set to some kind of universal default.
- **Partial Transfer:** Some of the parameter settings (and principle inventory) are transferred from L1, some are not.

Transfer

- Commonsense intuitive notions of L2A suggest that transfer plays a significant role; that you approach second language learning “starting from” your native language.

‘Transfer’ in L2 Phonology

Examples of ‘transfer’

- Phonemic inventory
- Phonotactics constraints
- L1 as a starting point for L2

How do we test for ‘Transfer’?

- Look at differences across languages
- Adverb placement in L1 French / L2 English in White (1991)

A wee bit of syntax

- ***Completely** Malcolm will not clean his room.
- *Malcolm **completely** will not clean his room.
- *Malcolm will **completely** not clean his room.
- **Malcolm will not completely clean his room.**
- *Malcolm will not clean **completely** his room.
- **Malcolm will not clean his room completely.**
- Adverbs in English can appear in before the verb or after the object.

A wee bit of syntax

- The reason for this is that the verb and object form a unit (VP) which the adverbs must be “attached to”:
- **Malcolm will not** [_{VP} **clean his room**].
- So, these kind of adverbs can, in a sense, serve as “landmarks”. Similarly, *not* and tense and the subject are assumed to be in the same structural position all the time.

Verb movement

- In English, you can never have an adverb between the verb and its object.
 - *John [eats often chocolate].
 - **John often [eats chocolate].**
- In French, you *generally* put adverbs between the verb and the object.
 - **Jean mange souvent [— du chocolat].**
 - *Jean souvent [mange du chocolat].

White (1991)

- Lydia White at McGill has done a number of studies related to this question, and has found a couple of disconcerting things. Let’s see what she did and what she found.

White (1991)

- White observes that even sticking to adverbs, there is a small “cluster” of properties tied to the verb raising parameter:
- In French (where V moves to T):
 - S Adv V order is **disallowed**
 - S V Adv Obj order is **allowed**.
- In English (where V does not move to T):
 - S Adv V order is **allowed**
 - S V Adv Obj order is **disallowed**.

White (1991)

- Given this, it *should* be sufficient for a learner to learn the one which is allowed (e.g., in English that S Adv V order is allowed)—the V-to-T parameter can then be set (to *off* for English), and then the impossibility of the one which is disallowed (e.g., *S V Adv Obj order in English) should follow automatically if they’ve set the parameter in their IL.

White (1991)

- White’s study involved native speakers of French learning English.
- Her subjects were children in grades 5 (average age 11) and 6 (average age 12) with very little prior English exposure and have very little English exposure outside the classroom.
- The children entered a 5-month intensive ESL program where their schooling was devoted entirely to ESL.

White (1991)

- The subjects were divided into **two groups**, based on whether the ESL instruction included specific teaching on English adverb placement (the other group was taught question-formation instead).
- Three months in, students took a “**pretest**” on adverb placement, after which the adverb group was trained on adverbs.
- After the teaching period, students took a **test**, then **another** at the end of the ESL program (about 5 weeks later). Finally, the (originally) 5th graders were retested **a year later**.

White (1991)

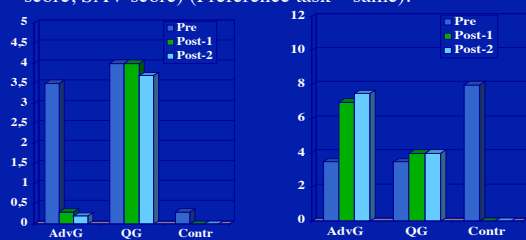
- The tests consisted of three tasks.
- **Grammaticality judgment**: Cartoon story with captions; if student thought caption was incorrect, they were to draw arrows to repair the word order.
- **Preference task**: Students were given a sentence in two possible orders and asked to respond if both were good, neither was good, or only one (and which one) was good.
- **Manipulation task**: Students were given cards with words on them and told to line them up to form a sentence; then asked if they could form another with the same cards, until they couldn’t continue.

White (1991) results

- Grammaticality judgment task:
- **Adverb group** went from very high acceptance to **SVAO** to very low (native-speaker-like) levels at the first post-test, and remained there for the second one. The **question group** remained high throughout.
- **Adverb group** when from moderate use of **SAV** to high (nearly native-speaker-like) levels at the first post-test, and remained there for the second one. The **question group** remained at moderate use throughout.

Results—judgments

- The effect of instruction was pretty dramatic in the first and second post-tests. Explicit instruction helped. (SVAO score, SAV score) (Preference task—same).



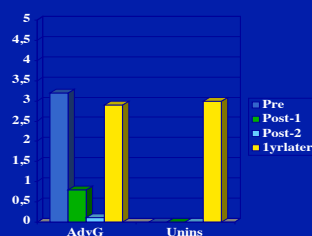
White (1991) results

- A couple of things to notice:
- The **question group** was getting basically **positive evidence only** (adverb position was not explicitly taught). And they didn't fare well on the tests.
- The **adverb group** was getting explicit **negative evidence** and it seemed to help a lot.
- Even the adverb group, while rejecting *SVAO, would not accept SAV as often/reliably as the native speakers—an apparent failure of predicted clustering.
- White suggested essentially that for L2'ers verb raising is optional, but this doesn't really get at the *SVAO result.

The one-year-later test

- ...A startling result when testing those kids who were helped so dramatically by instruction: **the knowledge they gained didn't last**. Again, it doesn't feel like a new parameter setting.

(SVAO score)



White (1991)

- In any event, White's (1991) study didn't show the strong support for parameter setting that it might have.
- White's study also seems to show that negative evidence seems to only have a very short-term effect on learning.
- This leads us (and later White [1992] too) to guess that what the kids were learning was LLK-type knowledge, and not some kind of reorganization of their grammatical system (by setting a parameter).

Types of input

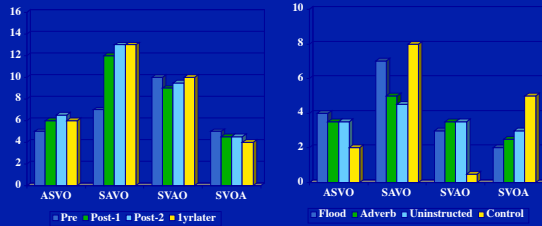
- What White (1991) was trying to test was the effects of different kinds of input; negative input via explicit instruction on adverbs vs. positive input via exposure (without concentrating on adverbs specifically). In her "positive evidence" (question) group, very little advance was made—is positive evidence ineffectual?
- White speculated that the kids in the question condition might not have actually *heard* many adverbs, after listening to some tapes of the classes. Perhaps they just didn't have *enough* positive evidence?

Flooding

- White and Trahey set out to test this by getting together another group of students and subjecting them to a "input flood" of adverb material—no explicit teaching of adverbs, but lots of examples of proper adverb placement in English. Then they ran basically the same tests on the kids as in the other experiment, including the "one year later" experiment. (Trahey 1996)

Flooding results—preference task

- The effect of the input flood appears to have been an increase in the flood group's use of SAVO, but no real change in anything else (in particular *SVAO).



Flooding

- The flooding experiment seems to have shown:
- That the knowledge gained by flooding seems to be more persistent than the knowledge gained by explicit instruction (i.e. adverb group).
- That acceptance of SAVO and rejection of SVAO appear to be independent—the flooding group learned that SAVO was allowed and retained this knowledge, but still didn't reject SVAO. This isn't expected if the “knowledge” is a parameter setting that is supposed to have both effects.

Asymmetry?

- In earlier research, White actually did some tests going both directions, and found that native English speakers learning French (that is, going the other way) appear to “catch on” to the allowability of SVAO, while—as we've seen—native French speakers learning English seem to hang on to SVAO indefinitely. Again, if this is a binary parameter, this appears to be a bit unexpected—is it easier to set one way than another?

Hawkins et al. (1993)

- Hawkins et al. (1993) looked at this a little bit more closely (with the assistance of advances in theoretical syntax since White's original study), looking in particular at English speakers learning French.
- In particular, the question Hawkins et al. were asking was: Do English speakers learning French *really* manage to set the V-to-T parameter, given that it seems to be so difficult the other way?

Hawkins et al. (1993)

- They found some evidence for a staged progression, where
 - The least advanced of their subjects could correctly place the verb with respect to negation (but not with respect to adverbs)
 - The more advanced subjects could correctly place the verb with respect to both negation and adverbs.
 - The rate correct for *tous* 'all' placement (cf. *The students all went home*) was lower than for the other two.

Hawkins et al. (1993)

- Hawkins et al. suggest that this is compatible with a view in which the English speakers never really *do* set the V-to-T parameter to *on*, but instead rely on other mechanisms by which the English speakers can “fake” French.

Hawkins et al. (1993)

- **First stage:** L2'ers seem to have the relative position of negation (*pas*) and the verb correct.
- **Hypothesis:** They treat *pas* as if it were attached to the verb to begin with, rather than in the canonical "negation" slot; hence the verb will always appear to its left), regardless of whether the verb raises.
- **Some evidence:** **Ne mange pas-t-il de...* accepted (vs. grammatical *Ne mange-t-il pas de...*); **Ne voir pas son amie est un supplice pour lui...* accepted (vs. grammatical *Ne pas voir...*).
- **And:** This means the relative position of verbs and *adverbs* is not necessarily predicted to be correct. This basically has nothing to do with verb movement in the IL.

Hawkins et al. (1993)

- **Second stage:** English speakers start to allow **SVAO** order in French (without the difficulty encountered by French speakers in disallowing it).
- **Hypothesis:** It is a generalization of *Heavy NP Shift*, already possible in English, which allows postposing of "heavy" NPs, such as:
 - The boy ate — quickly
[the hot soup his mother had made especially for him].
 - *The boy ate quickly it.
- That's a way to get a grammatical **SVAO** sentence in English under special circumstances. So, perhaps these L2'ers are "shifting the object rightward" (rather than moving the verb to T). (Evidence(?): About 40% of I group accept both SVAO and SAVO)