Lecture note 2.3 **Universal Grammar and SLA**

Evidently each language is the result of the interplay of two factors: the initial state and the course of experience. We can think of the initial state as a 'language acquisition device' that takes experience as 'input' and gives the language as an 'output'-an 'output' that is internally represented in the mind/brain.

Chomsky, 2000

1. Why Universal Grammar?

Arguments from first language acquisition

First of all, evidence from many studies in first language acquisition point to an innate mechanism.

- Universality of speed, final success
- No instruction is needed. Even though there is, it seems not working.
- Poverty of Stimulus (POS) problems (Plato's problem)

Plato's problem: http://en.wikipedia.org/wiki/Plato%27s_Problem

Plato's Problem is the term given by Noam Chomsky to the gap between knowledge and experience. It presents the question of how we account for our knowledge when environmental conditions seem to be an insufficient source of information. It is used in linguistics to refer to the "argument from poverty of the stimulus" (APS). In a more general sense, Plato's Problem refers to the problem of explaining a "lack of input". Solving Plato's Problem involves explaining the gap between what one knows and the apparent lack of substantive input from experience (the environment). Plato's Problem is most clearly illustrated in the Meno dialogue, in which Socrates demonstrates that an uneducated boy nevertheless understands geometric principles.

One such dialogue of Plato's that utilized the Socratic Method was the Meno. The participants were Socrates, Meno, Anytus, and one of Meno's slave boys. The dialogue begins with Meno asking Socrates whether virtue can be taught. Socrates responds by stating that he does not know the definition of virtue. Meno replies by stating the characteristics of a virtuous man, to

which Socrates responds that the characteristics of a virtuous man may be the by-products of virtuousness but they by no means define virtue. Meno is obliged to agree; to wit, he tries to modify his explanation of virtue. Socrates counters each attempt by pointing to inconsistencies and circular arguments.

Meno seems to commit two fallacies when trying to define virtue. He either defines it using some form of the word itself, or he defines it using other words that call for definitions and explanations themselves. Eventually, Meno is led to confess his shortcomings as he tries to define the enigmatic term (the Socratic method is the mechanism that brings about this confession). Socrates claims that a definition of virtue must consist of common terms and concepts that are clearly understood by those in the discussion.

A crucial point in the dialogue is when Socrates tells Meno that there is no such thing as teaching, only recollection of knowledge from past lives, or anamnesis. Socrates claims that he can demonstrate this by showing that one of Meno's servants, a slave boy, knows geometric principles though he is uneducated. Socrates states that he will teach the boy nothing, only ask him questions to assist the process of recollection. Socrates proceeds to ask the slave boy a series of questions about the size and length of lines and squares, using visual diagrams to aid the boy in understanding the questions. The crucial point to this part of the dialogue is that, though the boy has no training, he knows the correct answers to the questions – he intrinsically knows the Pythagorean proposition.

However, whether such an innate system is language-specific or belongs to general cognitive mechanism is still controversial.

Evidence for language-specific UG

- Some research has supported that child language is not linked in any clear way to intelligence.
- Similarly, children with cognitive deficits can develop language normally
- Children who are cognitively 'normal', but whose language is impaired, sometimes severely. This is called 'specific language impairment' (SLI)
- Recently, the gene FOXP2 has been discovered, whose mutation apparently leads to specific language impairment.

All these evidence lead to:

Specific areas of the brains deal with specific aspects of language, and that suffering from a language deficit does not necessarily mean having lost language completely, but usually means having problems with one or more aspects of language.

Universalists used the evidence to posit:

There must be some kind of innate language faculty that is biologically triggered, in order to explain why language in children just seems to 'grow', in the same way as teeth develop and children start walking.

2. The nature of Universal Grammar

Universal Grammar is a property theory (it attempts to characterize the underlying linguistic knowledge in second language learner's mind)

- It provides a detailed descriptive framework which enables researchers to formulate well-defined hypotheses about the task facing the learner, and to analyze learner language in a more focused manner.
- It is a general theory, which therefore encompasses any theory dealing specifically with learner language, seen as just another version of human language.
- UG is about competence (knowledge of language, the abstract mental representation of language and computational mechanisms associated with it), not about performance.

- UG view of language

UG views language as a mental framework, underlying all human languages.

Syntax was the privileged object of study.

UG is only concerned with the sentence and its internal structure, rather than any larger unit of language.

Work at the level of smaller units has also been primarily concerned with structure and

how different elements relate to one another.

It studied language somewhat clinically, in a vacuum, as a mental object rather than a social or psychological one.

It separates language knowledge and language use rigidly.

Methodology:

Grammaticality judgment test

Not being representative of reality

Preoccupied with the modeling of linguistic competence and the study of naturalistic performance is not seen as a suitable window into mental representations of language.

- UG view of the language learner

UG approach is only interested in the learner as the possessor of a mind that contains language; the assumption is that all human beings are endowed with such a mind, and variations between individuals are of little concern to UG theorists.

The emphasis is on language as the object of study, rather than on the speaker or learner as social being, and the focus is on what is universal within this mind.

i. Specifics about UG grammar

Government and Binding (GB), Principle and Parameter (PP), Minimalist Program (MP)

1. Principles and parameter

- Principles

  Language varies in limited ways, expressible in terms of parameters that need to be fixed in one of a few possible settings (usually two)

  Examples:

  Structure-dependency: language is organized in such a way that it crucially depends

on the structural relationships between elements in a sentence, such as words, morphemes, etc.

Structure-dependency

The principle of structure-dependency determines *what* by requiring that the element to be moved must have a particular structural role in the sentence, not simply be in a particular place in its linear order. Thus the rule for English question movement must specify which element in the structure is moved, not which word in the sequence or which type of word. It is the fact that *is* is an auxiliary or a copula within the structure of the sentence that means it moves from:

John is going.

to:

Is John going?

not that *is* is the second word. Furthermore only the copula in the *main* sentence can be moved, not the copula in the subordinate clause, so that:

Sam is the cat that is black.

becomes:

Is Sam the cat that is black?

not:

**Is Sam is the cat that black?*

The element that is moved to form a question must then occur in a particular structural role rather than a given linear position. "the rules of language do not consider simple linear order but are structure-dependent ..." (Chomsky 1988: 45).

- Parameters

All languages are structurally dependent which means they are all organized hierarchically in terms of phrases and they are part of the computational module and will not have to be learnt.

However, all languages do not behave in the same way in terms of their structural properties. →here comes the PARAMETERS.

Examples of Parameters

Head parameter: deals with the way in which phrases themselves are structured and applies to phrases headed by both lexical and functional categories.

- One dimension along which languages vary is the position of the HEAD in relation to other elements inside the phrases, called complements.

→ HEAD----COMPLEMENT

English is a head-first/initial language, because the head of the phrase always appears before its complements.

e.g: (1) **English: head-initial**

I know that Kim has put the book on the table.

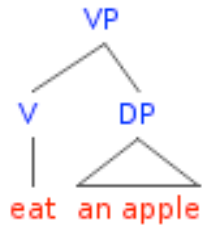
a. CP: [$_{CP}$ [$_{C}$ ***that***] [$_{TP}$ *Kim has put the book on the table*]]

b. TP: [$_{TP}$ [$_{T}$ ***has***] [$_{VP}$ *put the book on the table*]]

c. VP: [$_{VP}$ [$_{V}$ ***put***] [$_{DP}$ *the book*] [$_{PP}$ *on the table*]]

d. DP: [$_{DP}$ [$_{D}$ ***the***] [$_{NP}$ *book*]]

e. PP: [$_{PP}$ [$_{P}$ ***on***] [$_{DP}$ *the table*]]



English VP structure

Japanese is a head-last language, because the complements precede the head within the phrases.

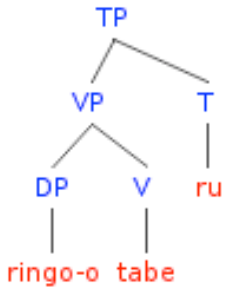
Japanese

a. *ringo-o* *tabe-ru*

apple-acc eat-nonpast

'eat an apple'

b. [$_{TP}$ [$_{VP}$ [$_{DP}$ ringo-o] [$_{v}$ **tabe**]] [$_{T}$ ru]]



Japanese VP structure

→Therefore, the **head parameter** tells us how the head and its complements are ordered in relation to one another in a given language, and it has two **settings**: head-first or head-last.

- Implications for language acquisition

Children, equipped with Universal Grammar, do not need to discover that language is structured into phrases, as this principle forms part of the blueprint for language in their mind. They also 'know' that all phrases in the language they are learning are going to be consistently ordered in relation to the head. The only task remaining is to learn which parameter setting actually applies in the language that the child is learning.

Another example:

How children figure out the precise relationships between reflexives and the noun-phrase antecedents?

e.g. 张三说小李喜欢自己。

张三说小李喜欢他自己。

老王对我说要对自己好一点。

(http://www.xzbu.com/4/view-3720175.htm)

Answer by UG→universal principles, the **Binding principles**, and their associated parameters stating which binding domains are possible (the Governing Category parameter), are pre-existing in the child's language module, and only need to be 'set' in a certain way to generate this particular bit of language-specific knowledge.

张三 $_i$ 说[小李喜欢自己 $_{i/j}$]。

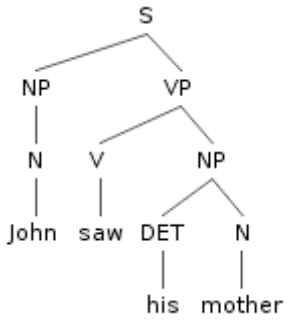
张三 $_i$ 说[小李 j 喜欢他自己 $_{*i/j}$]。

老王$_i$对我$_j$说要对自己$_{i/j}$好一点。

Binding can be defined as follows:

An element α binds an element β if and only if α c-commands β, and α and β corefer.

Consider the sentence "John$_i$ saw his$_i$ mother." which is diagrammed below using simple phrase structure rules.



The NP "John" c-commands "his" because the first parent of the NP, S, contains "his". "John" and "his" are also coreferential (they refer to the same person), therefore "John" binds "his".

1. *John$_i$ saw him$_i$.
2. John$_i$ saw himself$_i$.
3. *Himself$_i$ saw John$_i$.
4. *John$_i$ saw John$_i$.

Principle A: an anaphor (reflexive or reciprocal, such as "each other") must be bound in its governing category (roughly, the clause).

Since "himself" is not c-commanded by "John" in sentence [3], Principle A is violated.

Principle B: a pronoun must be free (i.e., not bound) within its governing category (roughly, the clause).

In sentence [1], "him" is bound by "John", violating Principle B.

Principle C: an R-expression must be free (i.e., not bound). R-expressions (e.g. "the dog" or "John") are referential expressions: unlike pronouns and anaphora, they independently refer, i.e., pick out entities in the world.

For further reading: Government and binding theory

http://en.wikipedia.org/wiki/Government_and_binding_theory#Binding

- Functional Categories

Recent theory claims that these functional items, whether words or morphemes, also have phrases attached to them in the same way as any other phrases, with the function word or morpheme as head of that phrase.

→Therefore, we have DP (Determiner phrases) and CP (Complementizer Phrases), and also IP (Inflection Phrases) (made up of Tense phrase and Agreement phrases, which carry tense and agreement markers.)

3. Minimalist Program

Chomsky:

- Language faculty consists of a **computational procedur**e, which is virtually invariant across languages and a lexicon.
- Parameters would now be contained within the lexicon.

→Languages are different from one another only because their lexicons are different, and all that language acquisition involves is the learning of the lexicon.

Major shifts:

Acquisition doesn't involves induction of a language-specific system of rules, based on input and guided by UG. Rather, he argues that here are just extremely general principles of UG and options to be selected. The acquisition of vocabulary has become much more important in MP, because lexical items are thought to include rich specification of properties that are needed for parameter setting and other features of grammar, as well as for interpretation of semantic meaning.

Knowledge of a lexical item

e.g.: "Knowing" the noun *foot* in English, for instance, means knowing how it is pronounced and what it refers to, that it is a noun and can function as the head of an NP, and that it takes an irregular plural form; "knowing" the verb *chi* 'eat' in Chinese means knowing its pronunciation and meaning, that it is a verb and the head of a VP, and that it normally requires a direct object, often the "dummy object" *fan* (literally

'rice').

4. UG and SLA

- Three questions important for SLA from the UG perspective

What is the initial state in SLA?

What is the nature of interlanguage, and how does it change over time?

What is the final state in SLA?

- Initial state

Much agreed:

L1 knowledge→transfer: parameter resetting (positive transfer when L1 and L2 parameter settings are the same; negative transfer when L1 and L2 parameter settings are different)

Not much agreed: Access to UG

Four possibilities:

(1) Learners retain **full access** to UG as an innate guide to language acquisition, even when they are learning languages subsequent to their L1.
(2) Learners retain **partial access** to UG, keeping some of its components but not others.
(3) Learners retain **indirect access** to UG through knowledge that is already realized in their L1 but have no remaining direct access.
(4) Learners retain **no access** to UG and must learn L2 via entirely different means than they did L1.

- Final state

Possibilities within the UG framework

(1) All learners may not have the same degree of access to UG.
(2) Different relationships between various L1s and L2s may result in differential transfer or interference.
(3) Some learners may receive qualitatively different L2 input from others.
(4) Some learners may be more perceptive than others of mismatches between L2 input and existing L1 parameter settings.

(5) Different degrees of specification for lexical features may be achieved by different learners.

i. Principles and parameters in second language acquisition

- the Head-parameter

two possibilities

1. second language learners reset the parameter to its correct value
2. simply transfer their first language parameter value

Evidence to support that head-parameter can be reset

Flynn (1983, 1984, 1987)

Japanese learners of English

She concluded: from the earliest stages of acquisition, Japanese speakers learning English as a second language are able to acquire English value of the head-direction parameter

→in the case of head-parameter, second language learners have access to UG in the same way as children do.

5. Evaluation of UG-based approaches to second language acquisition

- the scope and achievement of UG approach

UG is a linguistic theory, with its own aims and objectives, and not a learning theory.

UG research has been primarily concerned with the description and explanation of the formal system underlying language.

Its focus has been primarily morphosyntax, and other aspects of the linguistic system have received much less attention.

It is a property theory and not a transition theory.