Parameters set limits on the ways languages may differ. A parameter is the set of possible values for one constraint (or phenomenon) crosslinguistically. Parameter-setting models propose that language acquisition is the process of identifying the values of the target language. Under one of its versions, the child is born with a default initial setting for each parameter. The child changes the value of the parameter one his/her grammar cannot account for the input. Triggers are the specific linguistic information which is necessary for advancing the process of language acquisition.

Possible types of parameters

2. Parameterization of principles (Rizzi 1982) - Binding parameter

Null-subject parameter (pro-drop)

Some languages require overt subject, while some allow covert (silent, null) subjects.

<table>
<thead>
<tr>
<th>Overt subjects</th>
<th>Null subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Je parle francese</td>
<td>Hablo español</td>
</tr>
<tr>
<td>I speak English</td>
<td>Parlo italiano</td>
</tr>
</tbody>
</table>

a. Was she sure that they had finished?
   b. Era sicura che avevano finito?
   ( = ‘Was she sure that they had finished?’)  
   [Radford, 2005, p. 24, 12-13]

Why do some languages allow null subjects?

Where is Hebrew?

Compare:

<table>
<thead>
<tr>
<th>ani medaber ivrit</th>
<th>dibarti ivrit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I speak Hebrew</td>
<td>I-spoke Hebrew</td>
</tr>
</tbody>
</table>

It has been traditionally assumed that rich agreement helps identify null subjects for person and number.

- What do children do?
- How do they set the parameter?
What does early grammar look like?

- make house
- sit on piano
- like cereal
- No sit here
- not making muffins
- holexet ba-na'alayim shel doda ogi
- mexabim

How are a-e different from f-g? How are they similar? (Avoid the obvious: different languages, all have null-subject)

Hyams 1986

- Children acquiring a non-null subject language initially go through a null subject period during which they produce sentences with null subjects.
- Innate default setting which calls for resetting.

How is the parameter reset?
Positive evidence is needed.

Expletives – Dummy subjects

(a) It is evident that there have remained several problems
(b) È evidente che sono rimasti parecchi problemi
   Is evident that are remained several problems
   [Radford, 2005, p. 30, 24]
(c) nir'e she nish'aru harbe ba'ayot
   Expletives are triggers for resetting the null subject parameter.
   Is this enough for a Hebrew speaking child?

Morphological uniformity
(Table from Radford 2005)

<table>
<thead>
<tr>
<th></th>
<th>Italian</th>
<th>Chinese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sg</td>
<td>parler</td>
<td>shuo</td>
<td>speak</td>
</tr>
<tr>
<td>2nd sg</td>
<td>parl't</td>
<td>shuo</td>
<td>speak</td>
</tr>
<tr>
<td>3rd sg</td>
<td>parla</td>
<td>shuo</td>
<td>speak</td>
</tr>
<tr>
<td>1st pl</td>
<td>parl'amo</td>
<td>shuo</td>
<td>speak</td>
</tr>
<tr>
<td>2nd pl</td>
<td>parl'ate</td>
<td>shuo</td>
<td>speak</td>
</tr>
<tr>
<td>3 pl</td>
<td>parl'ano</td>
<td>shuo</td>
<td>speak</td>
</tr>
</tbody>
</table>

An inflectional paradigm is morphologically uniform if it has only derived inflectional forms or only undervived inflectional forms.

Hebrew – Past vs. Present

<table>
<thead>
<tr>
<th></th>
<th>Past</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sg</td>
<td>dibart</td>
<td>medaber/medaberet</td>
</tr>
<tr>
<td>2nd sg</td>
<td>dibarta/t</td>
<td>medaber/medaberet</td>
</tr>
<tr>
<td>3rd sg</td>
<td>diber/dibra</td>
<td>medaber/medaberet</td>
</tr>
<tr>
<td>1st pl</td>
<td>dibarnu</td>
<td>medabrim/medbrot</td>
</tr>
<tr>
<td>2nd pl</td>
<td>dibartem</td>
<td>medabrim/medbrot</td>
</tr>
<tr>
<td>3 pl</td>
<td>dibru</td>
<td>medabrim/medbrot</td>
</tr>
</tbody>
</table>

Relative uniformity?

The Binding parameter & the subset principle

What is binding theory?
- Binding theory is about the referential properties of anaphors (reflexives and reciprocals), pronouns, and full nouns (including proper names).
- The binding principles restrict the reference of nouns.
What are the referential properties of the following nouns?

- John likes himself
- John likes him
- He likes John
- *Himself likes John
- John thinks that Bill likes him
- He thinks that Bill likes John
- John thinks that Bill likes himself

Binding conditions

A: anaphors must be bound in their local domain
B: pronouns must be free in their local domain
C: R-expressions are always free

What is bound?

C-command: A c-command B, if the first node dominating A also dominates B and A does not dominate B.
Bound: B is bound by A if A c-commands B and A & B are co-indexed
Free = not bound

What is the local domain?

Governing Category Parameter (GC):
γ is a governing category for α iff γ is the minimal category which contains α and
A. has a subject, or
B. has an INFL, or
C. has a TNS, or
D. has a indicative TNS, or
E. has a root TNS;
(Wexler and Manzini 1987; 53)

English - A (local antecedent).
Japanese (zibun), Korean (casin), Chinese (ziji) - E (both local and non-local antecedents), but when used as phrasal reflexives (-zisin, -casin and -ziji) - A
Russian (sebja), Serbo-Croatian - C (both local and non-local antecedents)

Simple reflexives may take long-distance antecedents and phrasal reflexives may not.

The dog said that the horse hit himself.
The dog told the horse to hit himself.

What do children do?
How do they set the parameter?

- Subjects: 3 children ages 2-3
- Method: Analyzing the use of me and myself in the longitudinal samples
- Findings: Children's spontaneous production is errorless

John hit me, I see myself,
*John hit myself, I see me

**Binding in comprehension**


<table>
<thead>
<tr>
<th>Sentences</th>
<th>% correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The dog said that the horse hit himself</td>
<td>95%</td>
</tr>
<tr>
<td>2. The dog told the horse to hit himself</td>
<td>82%</td>
</tr>
<tr>
<td>3. The dog found the horse’s picture of himself</td>
<td>85%</td>
</tr>
<tr>
<td>4. The dog said that the horse found the picture of himself</td>
<td>86%</td>
</tr>
<tr>
<td>5. The dog told the horse to find the picture of himself</td>
<td>68%</td>
</tr>
</tbody>
</table>

What do we learn from the following pairs about the local domain?

1. The dog said that the horse hit himself 95%
2. The dog told the horse to hit himself 82%
4. The dog said that the horse found the picture of himself 86%
5. The dog told the horse to find the picture of himself 68%

What do the children assume about the local domain? How can they unlearn it?

**The Wh-parameter**

A [+WH] C must be checked by a wh-expression at:

1. S-Structure (= spell-out) [English]
2. S-structure or Logical form [French]
3. Logical form (LF) [Chinese]

What do children do?
How do they set the parameter?

---

**The subset principle**

The subset principle – The learning function maps the input data onto the smallest value which generates a language compatible with the input data.

What does this predict for the null subject parameter?
- English – no errors from onset of wh-questions
- Chinese – no errors from onset of wh-questions
- French – more questions without overt movement at onset of questions with a gradual growth in the proportion of questions with overt movement with age

Parameter theory as presented so far is not uniform in the type of parameters and in the way they are acquired.
- It is necessary to constrain the parameters and make sure they are explanatory adequate

Possible types of parameters

- Lexical variation in the input for the principles (Borer 1984, Manzini & Wexler 1987, Rizzi 1986)
- Parameterization of principles (Rizzi 1982)

But

Type (1) leads to Type (2) (Chomsky and Lasnik 1993)
In the minimalist framework (Chomsky 1993), there are no distinct levels of representation, so there are no type (3)

So

The Lexical Parameterization Hypothesis: “the values of a parameter are associated not with particular grammars, but with particular lexical items.” (Manzini & Wexler 1987)

The Functional Parameterization Hypothesis: Values of a parameter are associated not with particular grammars but with particular functional items.