1. Introduction

Psycholinguists are interested not only in the means by which children come to master a native language but also in the means by which competent adult speakers learn to speak a foreign language. In both cases, it is of interest to determine what psychological mechanisms support the acquisition of linguistic ability.

Before discussing the important differences that exist between child and adult language learning, it will first be necessary to define certain terms.

**Language acquisition vs. language learning**

The former typically implies some type of subconscious, effortless assimilation of linguistic knowledge and, accordingly, it is more often applied to the child’s mastery of a first or native language, as opposed to the adult’s mastery of a second language.

The term *acquisition* (as opposed to *learning*) is also sometimes taken to imply the involvement of innate, species-specific linguistic knowledge in one’s mastery of a language, whether it be native or foreign. That is, generative theorists typically favour reference to language acquisition, since some influence of the *language faculty/module* and/or UG is assumed. This is the sense of the term that we will adopt.

Learning, as opposed to acquisition, is standardly held to involve both explicit and implicit psychological processes:

- **Explicit learning**
  The learner will be consciously aware that he/she has modified his/her knowledge base.

- **Implicit learning**
  There will be a change in the learner’s knowledge base but this will be outside his/her conscious introspection.

You may also see the following distinction made in the literature:

*Foreign language learning* - Takes place outside of the community in which the target language is spoken.
Second language learning - Takes place within a community in which the target language is commonly spoken.

Second language learning may, but need not necessarily, lead to bilingualism or multilingualism. Note that these topics will be addressed in other course lectures, specifically in Dr. Vaux’s final lecture this term entitled 'Bilingualism' and in Dr. Anderson's lecture next term entitled 'Language contact.'

Finally, reference to a first or native language will be abbreviated to L1 and reference to a second or foreign language to L2.

2. Comparison of L1 and L2 acquisition

Differences between L1 and L2 acquisition generally fall into one of the following three broad categories (Hudson 2000:169-72):

Cognitive differences

✧ Adults have already learned a first language.
✧ Adults have better-developed analytic abilities than children.
✧ Adults have metalinguistic knowledge that children lack.

Affective differences

▪ Adults are motivated to learn in a way that does not apply in the case of children acquiring an L1.
▪ Adults experience acculturation to a greater or lesser degree in the course of L2 acquisition, whereas child language acquisition is integral to the process of enculturation, in which one becomes a member of a particular cultural group.

Biological differences

Two versions of the critical period hypothesis are cited in the L2 literature:

○ After a critical period, which ends at approximately 12 years of age, we lose the biological attributes that allow a child to effortlessly learn a first language.

○ Only L1 acquisition is subject to a critical period; one’s knowledge of a first language serves as a sufficient biological basis for the learning of subsequent languages.
Further comparisons:

<table>
<thead>
<tr>
<th>L1 acquisition</th>
<th>L2 learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceeds rapidly</td>
<td>Proceeds relatively slowly</td>
</tr>
<tr>
<td>Unconscious and effortless</td>
<td>Effortful</td>
</tr>
<tr>
<td>Similar stages of development</td>
<td>Recognizable stages of development but subject to greater individual variation</td>
</tr>
<tr>
<td>No negative evidence</td>
<td>Negative evidence readily available (particularly in classroom setting)</td>
</tr>
<tr>
<td>Exposure to spontaneous speech is sufficient.</td>
<td>Training and instruction typically required in addition to exposure to spontaneous speech</td>
</tr>
<tr>
<td>Adult-like mastery of all aspects of the language</td>
<td>Fossilization of errors is commonplace, as are errors involving a transfer of features from the L1, and the outcome of learning is not the same across individuals.</td>
</tr>
</tbody>
</table>

3. Analyzing L2 data

As in child language acquisition research, much of the data of interest has historically been naturalistic. However, in more recent years, experimental findings have increased in both number and importance.

Caution should be observed in taking a speaker's utterances as being fully representative of his or her knowledge of the L2, since production data may under-represent the learner's knowledge. (Recall that a similar caveat was introduced in our discussion of early child utterances.)

Conversely, naturalistic data may over-represent a learner's knowledge of the L2 since one well-recognized aspect of learner behaviour is the avoidance of L2 forms that the learner perceives as difficult or problematic.

4. Key issues in second language acquisition research

- Critical period
- Ultimate attainment
- Availability of principles of UG
- Availability of parameter-resetting
4.1 *Critical period hypothesis* (CPH)

Lenneberg (1967) – In fact, proposed two related hypotheses:

1. Certain *biological events* related to language development can only happen in an early stage of development termed the *critical period*.

One example of a relevant *biological event* is the lateralization of the brain for specific functions, which takes place during childhood. Notably, while damage to the left hemisphere of the adult brain typically leads to profound and permanent impairment of linguistic ability, recovery of this ability is much more likely when the damage occurs in early childhood. (More on hemispheric specialization for language in Lecture 8 this term.)

2. Certain *linguistic events* must happen during the critical period in order for language development to proceed normally.

The customary interpretation of the above hypothesis is that children must receive an *adequate and sufficient* amount of linguistic input at an early stage of development if normal acquisition of language is to take place.

Supportive evidence for the second hypothesis comes from cases of children raised in conditions of linguistic deprivation, *e.g.* so-called *wolf children*, children raised by deaf non-signing parents, or children who are victims of abuse, such as Genie.

A. **Victor, the 'Wild Child of Aveyron**

Victor was captured in 1800, after emerging from the woods in an area of Southern France. He did not speak and showed no evidence of hearing. He was judged to be about twelve years old and his appearance suggested that he had been living in the wild for a prolonged period of time.

A physician, J. Itard, took over Victor's education. Although he worked with him intensively for six years, Victor remained mute for the rest of his life. Nevertheless, he did learn to read and write during his time with Dr. Itard.
B. **Genie**

Genie was subjected to extreme social isolation and experiential deprivation until the age of 13½ when she was taken into protective custody. Her non-linguistic cognitive abilities were later found to be normal (or relatively normal) but her grammatical ability remained profoundly impaired. Some samples of Genie’s speech are contrasted below with the presumed meaning of each utterance (Curtiss 1988):

- Tummy water drink  
  ‘My tummy drinks (the) water’

- Genie bad cold live father house  
  ‘I had a bad cold when I lived in my father’s house.’

- Want Curtiss play piano  
  ‘I want you to play the piano.’

As can be observed from the above data, Genie’s acquisition of lexical or open class elements was relatively unproblematic compared with her acquisition of grammatical or function elements, which, according to Curtiss, was never wholly successful. This dissociation of abilities has been taken by some theorists as indicative that acquisition of certain aspects of language – e.g., syntax – are subject to a critical period, while others – e.g. vocabulary learning – are not.

Genie’s case remains controversial, however, because the linguistic deprivation she experienced was compounded with social, physical, and nutritional deprivation, which cannot be completely ruled out as contributing factors. (See also P. Jones at [http://www.feralchildren.com/en/](http://www.feralchildren.com/en/) for a critical evaluation of Curtiss’s claims.)

**Other cases of interest:**

- **Isabelle** – Confined to a room with her deaf-mute mother until the age of 6½; linguistic development proceeded rapidly upon contact with outside speakers.

- **Helen Keller** – Became blind and deaf at 19 months of age. Formal instruction in language (through touch) began at 7, with the aid of a tutor, Anne Sullivan. Successfully learned to read and write and, eventually, speak.
4.2 Ultimate attainment

The critical period hypothesis is clearly of relevance to the issue of ultimate attainment in L2 learning (the second bulleted item above). One seminal study is Johnson and Newport (1989), which involved 46 speakers of Chinese and Korean who had acquired English as an L2. All subjects had lived in the U.S. for 5 years or more but they varied in term of their age of arrival (AOA) in the country. Successful acquisition of English morphology and syntax was found to be highly correlated with the age of a subject's first exposure to the language, at least for those arriving prior to puberty. After age 17, there was no necessary correlation found between AOA and ultimate attainment, thus suggesting that a "window of opportunity" had closed for these subjects. (See Sorace 2003 for discussion of other supportive findings.)

On the other hand, a number of studies have produced evidence that learners can attain native-like or near-native-like competence in an L2. These include:

White & Genesee (1996; discussed in Sorace 2003) - Tested a group of near-native (mostly Francophone) speakers of English, one third of whom had their first significant exposure to English after the age of 12. No differences were found in the performance of native and non-native speakers on tasks requiring the comprehension and production of complex syntactic structures (e.g. interpretation of wh-movement violations such as *What did you hear the announcement that Ann had received?). Reaction times were found to be shorter for native speakers, however.

Birdsong and Molis (1989) - Replication of Johnson and Newport's famous study, using the same materials and procedures. Participants were 62 native speakers of Spanish. Found a strong age effect for those 32 participants who had arrived in the U.S. after the age of 17, rather than the random performance noted in Johnson and Newport. Overall findings suggest that "earlier is better" regardless of whether exposure takes place prior to or after puberty. (See Birdsong 1999:1-21 for further discussion of this and other relevant studies.)

It is important to note, however, that even White and Genesee advise caution in interpreting their results as an invalidation of the CPH. This is
because there is no definitive evidence that learners can attain native-like proficiency in all aspects of an L2, only that such proficiency has been demonstrated in various isolated tasks. (See Birdsong ibid.)

5.0 Non-generative theories of L2 acquisition

Acculturation/Pidginisation Approach (discussed in Towell and Hawkins 1994)

The greater the social distance between the learner and native speakers of the language, the greater the likelihood that the learner will fail to achieve native-like competence. So, the quality and quantity of input is key to the learner’s eventual success in mastering the L2. If social distance remains a feature of the learner’s experience, then his/her knowledge of the L2 may stabilize (or fossilize) at some level short of full competence.

Schumann (1978) (discussed in Cook 1993:69-77 and also in Ellis 2001:230-4) - Conducted a longitudinal study of a Costa-Rican immigrant to the US named Alberto. Alberto could be distinguished from five other Spanish learners of English according to his general lack of success in acquiring the grammatical properties of the language. Data collection took place over a ten-month period and included both observation and elicitation of response.

Schumann argued that Alberto’s acquisition of English showed characteristic properties of pidginization, which could be explained in terms of the social and psychological ‘distance’ that Alberto experienced in his language-learning environment, as compared to his fellow language-learners.

Definition of a pidgin:

A reduced language that results from extended contact between groups of people with no language in common; it evolves when they need some means of verbal communication, perhaps for trade, but no group learns the native language of any other group for social reasons that may include lack of trust or of close contact. (Holm 1988:4-5).
Some grammatical features of pidgins (adapted from Cook 1993:69-70):

<table>
<thead>
<tr>
<th>Invariable word order, typically SVO; uncomplicated clause structure &amp; syntax</th>
<th>A de go wok.</th>
<th>I am going to work. Are you making bread?</th>
<th>Krio Tok Pisin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominals lack gender/case marking.</td>
<td>Em i go long market.</td>
<td>He/she/it is going to market.</td>
<td>Tok Pisin</td>
</tr>
<tr>
<td>Lack of inflectional morphology</td>
<td>I no tu had. Sikspela/wanpela man i kam.</td>
<td>It's not too hard. Six men/one man came.</td>
<td>Krio Tok Pisin</td>
</tr>
<tr>
<td>A reduced lexicon, requiring use of circumlocutions.</td>
<td>gras bilong het looklook</td>
<td>hair stare</td>
<td>Tok Pisin Tok Pisin</td>
</tr>
<tr>
<td>Simplified phonological inventory</td>
<td>sip vs. sipsip wanpela/wanfela</td>
<td>ship vs. sheep both mean ‘one’</td>
<td>Tok Pisin Tok Pisin</td>
</tr>
</tbody>
</table>

See Appendix I for samples of Alberto’s speech.

Problems with Schumann’s account:

- L2 acquisition, in general, is characterized by individual variation and so it is difficult to determine the extent to which Alberto’s behaviour is idiosyncratic, rather than representative of other learners who experience social or psychological distance from the L1 community.

- Some of Alberto’s errors are clearly related to transfer from the L1, rather than pidginization of the L2.

- The model is explanatorily limited in that it does not detail how social factors affect the quality of contact that a learner receives (see the discussion in Ellis 2001:230-4).

See also Sebba (1997:79-89) who reviews theories of pidginisation as incomplete or unsuccessful second language learning.
6.0 Generative theories of L2 acquisition

Within the generative framework, there are three basic viewpoints expressed with respect to the involvement of UG in L2 learning. (Note, however, that Ellis 2001:453-54 proposes a four-way division of theoretical views.)

A. No access to UG

The Fundamental Differences Hypothesis (Bley-Vroman 1989)
Adult attainment of L2 knowledge is a process of learning, not acquisition:

<table>
<thead>
<tr>
<th>Child language development</th>
<th>Adult foreign language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal grammar (UG)</td>
<td>Native language knowledge</td>
</tr>
<tr>
<td>Domain-specific learning procedures</td>
<td>General problem-solving systems</td>
</tr>
</tbody>
</table>

UG principles and parameters manifest themselves in L2 learning only in so far as they are represented in the native language and the adult learner has no conscious access to this knowledge.

Example of one account: Clahsen & Muysken (1986) - At an early stage, adult L2 learners of German determine verb placement in the sentence according to the use of a general non-linguistic strategy that is based on the linear or surface order of words. Child learners of German, by contrast, are observed to adhere to linguistic (i.e. UG) principles of verb placement from the earliest stages of acquisition.

Problem with Fundamental Differences Hypothesis: Allows for the possibility that L2 learners may construct what are termed wild grammars, i.e. grammars that do not conform to UG constraints. There is at present no evidence, however, that learners ever do so.

B. Full and/or direct access to UG (see, e.g., Flynn 1984, 1987, discussed in Ellis 2000:453-4 or Flynn 1996)

UG principles are available in L2 acquisition and parameter-resetting eventually takes place. If the parameter value attested in the L1 differs from that of the L2, then transfer errors based on the L1 parameter setting will be observed until the value has been reset to that of the L2.
Attainment of L2 competence is viewed primarily as a process of acquisition, rather than of learning.

Interestingly, direct access theories allow for the possibility that *interlanguage* (i.e. transitional) grammars may settle on a parameter value that is neither characteristic of the L1 nor of the L2.


Adult learners have access to UG but are also able to make use of general problem-solving abilities that children acquiring their first language lack. The latter abilities compete with language-specific abilities (i.e. UG) in the acquisition of the L2 and so the direct application of UG is impaired. As a consequence, learners fail to attain native-like competence in the L2.

C. **Partial access to UG** (see, *e.g.*, Schacter 1996, Hawkins 2001, Ch. 2)

A hybrid approach to L2 acquisition, which shares features of both no access and direct access theories. UG principles are assumed to be available just as in L1 acquisition, but parameter-resetting is subject to critical period effects. Both acquisition and learning play a role in such accounts, acquisition in the form of the application of UG principles, and learning because speakers must construct an L2 grammar without the aid of parameter-resetting.

Like the *direct access hypothesis*, the *partial access hypothesis* recognizes the possibility that learners may construct *interlanguage* grammars which have features that are neither attested in the L1 or L2.
**Reading recommendations**


**More advanced**


Ritchie, W. and Bhatia, T. (eds.) 1996. *Handbook of Second Language Acquisition*. Academic Press. (The chapter written by K. Gregg, entitled *The logical and developmental problems of second language acquisition* is especially recommended, although it is quite advanced. Papers contributed by L. White, S. Flynn and J. Schacter are also worthwhile.)


Appendix I

Evaluate the following sentences produced by Schumann's (1978) subject Alberto, according to the grammatical criteria for pidgins that is provided on page 5 of the handout. To what extent do you think these sentences support Schumann's contention that Alberto is a pidginised speaker?

Declaratives

It's problem for me. Is necessary.
Picture is very dark. Is very bad, no?
This man is wrong. In my country is six years in primaria.

Negatives

No pass. I don't have much time.
No is mine. No have pronunciation.
No like walk. I don't understand that.
I no understand. I no may explain to you.

Interrogatives

What is surance? You will come back?
This is apple? Will you come here next Monday?
You may change the day, the lesson the day?

Source: Cook (1993:275-6)