Child Language Acquisition Theory: Chomsky, Crystal, Aitchinson & Piaget

Chomsky

Noam Chomsky believes that children are born with an inherited ability to learn any human language. He claims that certain linguistic structures which children use so accurately must be already imprinted on the child’s mind. Chomsky believes that every child has a ‘language acquisition device’ or LAD which encodes the major principles of a language and its grammatical structures into the child’s brain. Children have then only to learn new vocabulary and apply the syntactic structures from the LAD to form sentences. Chomsky points out that a child could not possibly learn a language through imitation alone because the language spoken around them is highly irregular – adult’s speech is often broken up and even sometimes ungrammatical. Chomsky’s theory applies to all languages as they all contain nouns, verbs, consonants and vowels and children appear to be ‘hard-wired’ to acquire the grammar. Every language is extremely complex, often with subtle distinctions which even native speakers are unaware of. However, all children, regardless of their intellectual ability, become fluent in their native language within five or six years.

Evidence to support Chomsky’s theory

- Children learning to speak never make grammatical errors such as getting their subjects, verbs and objects in the wrong order.
- If an adult deliberately said a grammatically incorrect sentence, the child would notice.
- Children often say things that are ungrammatical such as ‘mama ball’, which they cannot have learnt passively.
- Mistakes such as ‘I drawed’ instead of ‘I drew’ show they are not learning through imitation alone.
- Chomsky used the sentence ‘colourless green ideas sleep furiously’, which is grammatical although it doesn’t make sense, to prove his theory: he said it shows that sentences can be grammatical without having any meaning, that we can tell the difference between a grammatical and an ungrammatical sentence without ever having heard the sentence before, and that we can produce and understand brand new sentences that no one has ever said before.

Evidence against Chomsky’s theory

- Critics of Chomsky’s theory say that although it is clear that children don’t learn language through imitation alone, this does not prove that they must have an LAD – language learning could merely be through general learning and understanding abilities and interactions with other people.

Dialogue –

Parent and Child (3 years old)

Parent: What did you do today?
Child: Me drawed a cat. (applies –ed suffix rule but gets wrong)
Parent: You drew a cat?
Child: Yeah. (understands correction)
Parent: Who did you play with at breaktime?
Child: Me played with Sarah and Helen. (wrong pronoun – not learnt passively)
Parent: That sound fun. Now what do you want for tea?
Child: Dunno. What you having?
Parent: Daddy and I are having fish.
Child: You having fishes? (incorrect use of plural noun but shows child applying rules)
Parent: Yes. I'll do you some fish fingers and if you’re a good girl and eat them all you can have a sweetie. (applying plural noun rule)
Child: Me want two sweeties.
Parent: Alright then. Now go and watch Postman Pat while I start the tea.
Child: When Daddy coming home? (gets SVO order correct all the time)
Parent: He'll be here soon.

David Crystal

David Crystal's Theory On Child Language Acquisition

Professor Crystal is best known for his two encyclopaedias The Cambridge Encyclopaedia of Language and The Cambridge Encyclopaedia of the English Language. So what does this have to do with child language acquisition?

David Crystal has the theory that children learn language in five stages, which aren’t clearly defined and some tie in with each other.

These stages are:

Stage One:
This is where children say things for three purposes:

1. To get something they want
2. To get someone’s attention
3. To draw attention to something

Then they begin to make basic statements such as “daddy car”

During this stage children begin naming things with single words and then move on to relating objects with other things, places and people, for example, “there mummy”. They also relate objects with events, for example, “bird gone”.

At this early stage they don’t have much vocabulary so they use intonation to ask a question. Children use words like: “there, want and allgone” to express a full sentence. This could be said that part of this stage is holophrastic.

Stage Two:
This is when children usually ask questions, “where” questions come first. Their questions often begin with interrogative pronouns (what, where) followed by a noun or verb such as “where gone?”

Children become concerned with naming and classifying things by frequently asking “Wassat?” They may also begin to talk about the characteristics of things for example: big/small. Children are taught to learn things in opposite pairs such as up/down and hot/cold.
**Stage Three:**

By now children would be asking lots of different questions but often signalling that they are questions with intonation alone, for example: “Sally play in garden mummy?” This is made into a question by varying the tone of voice.

Children soon begin to express more complex wants by using more grammatically correct language, for example: “I want mummy to take it work” meaning “I want mummy to take it to work”

Verbs such as “listen” and “know” are also used. Children refer to events in the past and less often in the future. They usually talk about continuing action for examples: “she still in bed” and ask about the state of actions (whether something is finished or not)

The basic sentence structure has expanded such as: [subject]+[verb]+[object]+[adverb or any other element used] Sentences like: “You dry hands” and “A man dig down there” begin to appear and auxiliary verbs are used in sentences such as “I am going” and phrases like “on the table” [preposition]+[article]+[noun]

**Stage Four:**

This is when children use increasingly complex sentence structures and begin to:

- Explain things
- Ask for explanations using the word: “why?”
- Making a wide range of requests: “shall I do it?”

Now they are able to use complex sentence structures they have flexible language tools for expressing a wide range of meanings. Probably the most remarkable development is their comprehension of language and use of abstract verbs for example “know” to express mental operations. They begin to communicate meaning indirectly by replacing imperatives such as “give me” with questions; “can I have?”

As well as saying what they mean they now have pragmatic understanding and suit their utterances to context or situation. Children also use negation (denial/contradiction) for example: “he doesn’t want one!” They don’t rely on intonation and signals anymore as they explain more fully.

They are now able to use auxiliary verbs and may duplicate modal verbs “please, can I, may I” This could be showing that “may” is required for courtesy whilst “can” indicates being able to do something.

And Finally…

**Stage Five:**

By this stage children regularly use language to do all the things that they need it for. They give information, asking and answering questions, requesting directly and indirectly, suggesting, offering, stating and expressing.

Children are now able to talk about things hypothetically and conditionally for example “If I were you, I would…”

They are now able to explain conditions required for something to happen; “You’ve got turn the tap on first in order to wash your hands”

As well as making general references to past and future, children now talk about particular times such as: “after tea” and “before bedtime”

By this stage children are very comfortable with all questions beginning with words like: “What?” and “When?” where the subject and verb are reversed such as “what does that mean?”

**Scripts**

**Stage 1:**

Child: Allgone!
Mother: Yes, the milk is all gone.
Child: Mummy, here.
Mother: Mummy’s here.
Child: Want more!
Mother: That’s enough milk now.
Child: No, more.
Mother: Look at dolly, she’s sleeping.
Child: Dolly, there?
Mother: Yes, dolly is in the bed.
Child: Dolly bye-bye.

Stage 2:
Child: Where’s Daddy?
Mother: Outside, look?
Child: Outside hot.
Mother: Yes it’s sunny.
Child: Wassat?
Mother: It’s a book.
Child: Big book.
Mother: Good girl.

Stage 3:
Child: Daddy is sleeping?
Mother: Uhuh Daddy’s sleeping on the couch isn’t he?
Child: Him wake up!
Mother: No because he is sleeping. That wouldn’t be very nice would it?
Child: I want Daddy.

Stage 4:
Mother: What would you like for lunch? Sandwiches? Pasta?
Child: Please, may, can I have ham?
Mother: On sandwiches?
Child: *nods*
Mother: What’s the magic word?
Child: Please!
Mother: Do you want a cup of orange juice?
Child: *shakes head* Not that one. Can I have apple juice?
Stage 5:
Mother: Did you have a good day at school today?
Child: Yeah, I played aeroplanes with Jake. I want to be an aeroplane driver when I’m older.
Mother: A pilot?
Child: Yeah and fly to the moon.
Mother: No that’s an astronaut. Do you want to be a pilot or and astronaut?
Child: I would like to be an astra-, astra-
Mother: -naut.

Scripts
Stage 1:
Child: Allgone! Holophrase to express a full sentence. They are operators when manipulating language this way.
Mother: Yes, the milk is all gone.
Child: Mummy, here. Only a statement as they don’t have much vocab or language forms that they can control.
Mother: Mummy’s here.
Child: Want more!
Mother: That’s enough milk now.
Child: No, more. Direct imperative.
Mother: Look at dolly, she’s sleeping.
Child: Dolly, there? Intonation to ask question.
Mother: Yes, dolly is in the bed.
Child: Dolly bye-bye.

Stage 2:
Contraction = passively
Mother: Outside, look?
Child: Outside hot. Able to describe characteristics.
Mother: Yes it’s sunny.
Mother: It’s a book.
Child: Big book. Able to describe concrete nouns with descriptive adjectives.
Mother: Good girl.
Stage 3:
Child: Daddy is sleeping? Intonation = passively. 'sleeping'-able to use and understand continuous action.
Mother: Uhuh Daddy's sleeping on the couch isn't he? Parentese.
Child: Him wake up! More complex command but words mixed up.
Mother: No because he is sleeping. That wouldn’t be very nice would it?
Child: I want Daddy. Complex want structured correctly = Subject + Verb + Object.
Stage 4:
Mother uses more complex sentences as child can understand them.
Child: Please, may, can I have ham? Duplicate modal verbs. Indirect as replaces imperative with question as learning manners/rules of general conversation.
Mother: On sandwiches?
Child: *nods*
Mother: What's the magic word? Pragmatic.
Child: Please!
Mother: Do you want a cup of orange juice?
Child: *shakes head* Not that one. Can I have apple juice?
Able to use gestures/signals. Negation.
Stage 5:
Mother: Did you have a good day at school today? Able to give information about his/her day. Knows time phrase for future.
Child: Yeah, I played aeroplanes with Jake. I want to be an aeroplane driver when I’m older.
Mother: A pilot?
Child: Yeah and fly to the moon. Expressing exactly and has knowledge i.e. actually knows about the moon.
Mother: No that’s an astronaut. Do you want to be a pilot or and astronaut?
Child: I would like to be an astra-, astra- Able to use conditional tense. Trying to pronounce as it is a difficult word.
Mother: -naut.

Development of Grammar
The learning of grammar is an unnoticeable process and it happens very quickly. Over three or four years, children master the grammar of the language. When they attend their first school, they give the impression of having assimilated at least 3/4 of all grammar there is to learn.
Stages of Grammatical Growth:

- The earliest stage is hardly like grammar at all, as it consists of utterances of only one word long, for example ‘dada’ or ‘hi’. Approximately 60% of these words have a naming function and 20% express and action. Most children of around 12-18 months go through this stage, known as the holophrastic stage as they put the equivalent of a whole sentence into a single word.

- This next stage is more like real grammar from 18 months to 2 years. It is known as the two-word stage as the children put 2 words together to make one sentence structure. For example, ‘cat jump’ which is subject + verb, or ‘shut door’ which is verb + object. By the end of this stage we are left with the impression that children have learned several basic lessons about English word order.

- This next stage is filling simple sentence patterns by adding extra elements of clause structure and making the elements more complex. 3 elements for example ‘Daddy got car’ and then 4 elements ‘you go bed now’, show this progress. Or the children start to ask questions like ‘where Daddy put car?’. This takes up much of the third year and is known as the telegraphic stage as simple words like determiners e.g. the, are left out but the sentence is still understood.

- At 3 years, sentences become much longer as the children string clauses together to express more complex thoughts and to tell simple stories. Children at this stage commonly use ‘and’ or other linking words such as ‘because’, ‘so’, ‘then’ etc.

- At 4 years, the children are ‘sorting out’ their grammar. For example most children at the age of 3 ½ might say ‘him gived the cheese to the mouses’. However at 4 ½ years they would say ‘he gave the cheese to the mice’. This explains that they have learnt the forms of the irregular noun ‘mice’ and the verb ‘gave’, and the pronoun ‘he’.

- After 4 ½ years, there are still features of grammar to be used such as sentence-connecting features. This process will continue until early teens when the learning of grammar becomes more indistinguishable.

Active with Passive

Crystal carried out an experiment testing whether children at certain ages used active or passive sentences. His study shows that at around 3 years old, none of the children produced a passive sentence. However as he tested older children they were beginning to use more passive sentences. At 7 years, the ability to use passives dramatically increased.

Foundation Year

Crystal believes that language acquisition is not just about producing sounds, but also about being able to perceive sounds and understand the meaning of utterances that people make.

- He says that babies respond to different types of sounds by being able to distinguish between different voices. Before the babies are 1 day old they can tell which is their mother’s voice to someone else’s voice. As well as
contrasts in intonation and rhythm.

- The babies also show signs of comprehension between 2 and 4 months. They do this by responding to different adult tones of voice such as angry or soothing.

Between 6 and 9 months, the child learns to recognise different utterances in situations for example ‘clap hands’ or ‘say bye-bye’.

Towards the end of the first years, the children show a sign of verbal learning whether it is names of people or objects. Therefore knowing the meaning of at least 20 words by the end of the first year before even uttering a word.

Overall Crystal’s theory was that children learn in amorphous stages by trial and error to successfully learn the language. They learn in stages of grammar, different types of questioning e.g. intonation and recognising the rhythms of voices.

Jean Aitchison

Jean Aitchison is a Rupert Murdoch Professor of Language and Communication in the Faculty of English Language and Literature at the University of Oxford.

Idea that “language has a biologically organized schedule”.

Children everywhere follow a similar pattern. In their first few weeks, babies mostly cry. As Ronald Knox once said: ‘A loud noise at one end, and no sense of responsibility at the other.’ Crying exercises the lungs and vocal cords. But crying may once have had a further evolutionary purpose. Yelling babies may have reminded parents that their offspring exist: deaf ringdoves forget about their existing brood, and go off and start another.

In 1987, she identified three stages that occur during a child’s acquisition of vocabulary: labeling, packaging and network building.

1. **Labeling** – The first stage and involves making the link between the sounds of particular words and the objects to which they refer e.g. understanding that “mummy” refers to the child’s mother. In other words, associating a name with something.

2. **Packaging** – This entails understanding a word’s range of meaning. This is when Over extension and Under extension become a hurdle in the development of the language.

3. **Network Building** – This involves grasping the connections between words; understanding that some words are opposite in meaning. Aitchison argued that there are no EXACT dates to which a child reaches a certain stage of learning language – some children learn faster than others. She believed that the speed of learning is influenced by both innate abilities and environment. Language is partly learned by imitation, so parents and brothers/sisters play a role in the acceleration of learning the language. Baby talk whilst learning to speak could hinder the child in learning to speak later on. Speech timetable created from birth to ten years old.

**Dialogues:**

1.) According to Aitcheson’s Timetable of Speech, children grasp the use of single words at month 12.

M: Mmm! isn’t that nice?

C: More.
M: Okay! Here comes the aero plane!
C: Yeh. 2.)

By the age of 2, the understanding of word endings begins to appear. However, it's a bit complicated at times for the child to always get it right, as some past tense verbs require no ending and it is placed by the child anyway. This is an example of them learning actively.

D: Are you going to tell Mummy what you did today?
C: I roded on a horsie!!

3.) During the age of 2 is when Aitchison believes negatives are formed and the ability to ask questions is developed:

M: Catch! *throws ball*
C: *misses* Why didn’t I caught it?
M: It’s alright, smile don’t sulk!
C: I not crying.

4.) At 5 years the child is able to speak using complex constructions and rarely faults:
C: Can I go to Joes for tea? We are going to play football in the park like last week.
M: If you stay clean
C: Whatever!

This is the process of language acquisition. Naturally, children will vary individually when they reach each stage but there is little variation in the sentence of language learning. By the end, a child's language is in place and (s)he has a basic lexicon of several thousand words. From now on, what is learned is retained and increasingly dependant upon experiences and environment – on opportunities to use language and hear it used, for a wide range of purposes and audiences in a wide range of contexts.

Humans mop up words like sponges.

**Piaget**

**Sensori-motor Stage (0 – 2 years)**
Baby can differenciate from self and objects
Parent: Where’s the ball?
Child: *points to ball* Ball!
P: Yess! And now where’s Tommy?
C: *points to self*
P: Yesss!

**Pre-operational Stage (2 – 7 years)**
Can classify objects as a single feature
P: Tommy, can you make a pile of all the yellow bricks?
C: Yes mummy look!
P: Well done!

Still thinks egocentrically
C1: Dolly is sad
C2: No! Dolly is happy!
C1: No!
C2: Yes!
C1: No!

Concrete operational Stage (7 – 11 years)
Can think logically about objects and events and achieve conservation of number
C: Tomorrow I start ballet, and then I will go every week
Teacher: Oooh! That’s lovely! How old are you now?
C: 7!
T: Now – please can you put these in order for me?
C: Yep! *gets it right*

Formal operational Stage (11 years +)
Becomes concerned with the hypothetical, the future, and ideological problems
C: When I grow up I want to be a doctor
P: And how will you achieve that?
C: I’m going to work really, really hard at school and then get lots and lots of money and then get married, and have children, and live happily ever after!