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Introduction to child language acquisition

1.1 THE ISSUE

In the first volume of his autobiography, *My Family and other Animals*, the naturalist Gerald Durrell tells of his idyllic childhood in Corfu and how it inspired his love of the natural world. In his book, Durrell applies his gentle, good-humoured observational power to both the people of the island and its wildlife. The behaviour of the people around him is discussed in the same affectionate but dispassionate terms as the hunting behaviour of a spider or the maternal instincts of an earwig. The humour in the book comes, of course, from the incongruity of applying the same narrative formula to humans and to other animals. The people of Corfu are very different from its wildlife, not least because they are capable of reading, and presumably protesting against, Durrell's descriptions of them. In essence, humans have language and other animals do not.

Researchers have spent many years arguing about how to characterise the differences between human and animal communication. However, all agree that human language is more complex, more sophisticated and more powerful than any other animal communication system. Not even dolphins or chimpanzees come close. Yet human children seem to acquire this system without any apparent effort. It has become a trite phrase, but it is no less true for that: human children acquire the most complex communication system known to man before they learn to tie their shoelaces.

How do children do this? How do children acquire language? The short answer is we do not know. We are not even close to an answer. So the aim of this book is not to answer this question for you but to try to convince you that the journey of discovery itself is a fascinating one. Here you will find the big questions that intrigue those of us who listen to children talk and marvel at their achievements. We will cover as many of the great debates as we can. How do children learn to produce the sounds of their language? How do they learn to associate words with meanings? How do they acquire the rules of grammar? Why do children differ in the speed of their language acquisition? Is there a critical period for language acquisition? What innate knowledge do children bring to the task? How do children fare who acquire two languages at once? For each of the big questions we will discover the theories that have been devised and we will debate the evidence that supports or discredits them. By the end of this book, you will not have an indisputable answer to the question of how children acquire language, I'm afraid. However, you should have a better understanding of the possibilities and, hopefully, will have developed some theories and solutions of your own.

1.2 WHAT IS LANGUAGE?

The phrase 'acquiring a language' implies that language is a unitary thing. The implication is that we simply have to master one thing – language – and we are done. However, this trivialises the task. In fact, language has many facets, so when we talk about acquiring a language we are actually talking about learning a whole range of different skills and acquiring many different types of knowledge. Thus, in order to understand what it means to 'acquire a language', the first key question we must consider is this:

Key question: what skills and knowledge do children have to master in order to acquire a language?

The short answer is that a number of skills and abilities are required. First children have to learn to distinguish speech sounds from other noises so that they know which sounds to pay attention to. So they need to distinguish, for example, between human speech and birdsong and between human speech and other human sounds such as whistling or humming. Then, once they have learnt to recognise these speech sounds, they have to learn to produce them by manipulating the passage of air through their vocal tract and mouth using precise sequences of lips, tongue and vocal cord movements.

That is just the start of the process though. Children then have to learn how to combine speech sounds into meaningful words. This is trickier than you might think. When a child hears her mother cry *look, rabbit!* how does the child know what her mother is referring to? She may be referring to the animal she just saw scurrying by, but the word could equally as easily mean *animal, mammal, grass, beautiful sunset* or even *dinner*. So matching words to referents is not an easy matter and takes children quite a while.

However, even that is not the end of the process. Once children have discovered the meaning of words, they need to work out how words fit together into sentences. They have to learn that changes in meaning may be signalled by sequencing words in different ways: *man bites dog* is newsworthy, *dog bites man* is not. They have to learn that adding certain endings to words changes their meaning in precise but subtle ways; for example, by turning *kick* into *kicked* we indicate that the kicking action took place in the past. They also have to learn how to express and understand the hidden meaning behind words and sentences. They have to learn, for example, that the expression *can you pass the salt?* does not simply require the answer *yes* but is an implicit request to carry out the action. Finally, children have to learn to string their thoughts together in a coherent way in order to hold a conversation and to respond appropriately to the sentences of others.

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1.2.1 Language or languages?

All the skills described in the previous paragraph must be mastered in order to acquire a language. However, strictly speaking we should be talking about acquiring languages, rather than acquiring a language, because there are thousands of different languages, each with very different characteristics. The most obvious difference is in our vocabulary. A rose by any other name must smell as sweet, since a rose really does have many other names. The Spanish call it *una rosa*, to Arabic speakers it is *warda* and in Japanese it is *bara*. However, vocabulary differences are just the beginning. There are differences on all levels; in the sounds of the language, in the way in which words are combined and in the way in which language is used. For example, Zulu learners have to learn to produce click consonants that sound, to English speakers, just like a bottle top popping off a bottle.

To illustrate, here is a comparison of two languages, English and Turkish (based on descriptions in the chapters by de Villiers and de Villiers and Aksu-Koç and Slobin in Slobin, 1985). English is described as a word order language, because the order of words in a sentence is the primary determinant of the meaning of the sentence. Thus, the simple sentence *the man bites the dog* has a very different meaning from the sentence the dog bites the man because the basic word order of English is SUBJECT-VERB-OBJECT (SVO), as in the man (SUBJECT) bites (VERB) the dog (OBJECT). Because English is a word order language, words can be re-ordered in systematic ways to convey different meanings. For example, English also has passives (the man was bitten by the dog), wh-questions (who did the dog bite?), negatives (the dog didn't bite the man) and imperatives (bite the man!) as well as many other structures. English also has an inflectional system, in which markers (suffixes) are added to the ends of words to modify their meanings (e.g. kick becomes *kicked* to signify that the action took place in the past). However, the inflectional system of English is very simple. Nouns are marked only for plurality and possession, allowing us to say the dogs (plural) and the dog's bite (possessive). Verbs too have very little inflectional marking, which means that verb conjugation tables look very simple in English compared to those of most other languages. For example:

I bite You bite He/she/it bites We bite You (pl) bite They bite

Turkish also has a default word order, which is SUBJECT-OBJECT-VERB (SOV). However, unlike in English, in Turkish, changing the word order does not necessarily change the meaning of the sentence, although it does allow speakers to highlight different parts of the sentence. So to a Turkish speaker, *man bites dog, dog bites man* and even *man dog bites* could all refer to an incident in which a man bites a dog. This is possible because Turkish has a very sophisticated inflectional system in which different endings added to nouns and verbs convey who did what to whom. The example below, taken from Aksu-Koç and Slobin (1985), shows how a number of different inflectional markers can be added to the noun *hand (el)*. These markers are always added in a particular order, so that the original noun (the stem) becomes longer as more are added.

El	'hand'
El-ler	'hands'
El-ler-im	'my hands'
El-ler-de	ʻin hands'
El-ler-im-de	ʻin my hands'

Because nouns and verbs contain all this information within their suffixes, it is possible to re-order the words of a sentence and still convey the sentence's meaning.

Not surprisingly, English and Turkish children show different patterns of language acquisition. For example, English children's early sentences tend to be combinations of bare stem forms without inflection markers (see de Villiers & de Villiers, 1985). So a two-year-old will produce something like *Daddy book* instead of *Daddy's book* or *two chair* instead of *two chairs* (see Brown, 1973 for more examples). English children's early speech also lacks the 'little words' of the language; words like *a*, *the*, *of*, *in*, *is*, *are* (determiners, prepositions, auxiliaries). So *sit chair* will be produced instead of *sit in the chair*, or *this telephone* instead of *this is my telephone*.

Brown (1973) called this early speech 'Stage 1' speech and observed that it is not until 'Stage 2', a few months later, that the markers and 'little words' start to appear in children's speech. Stage 2 speech is still short and simple, but sounds more adultlike because of the presence of these morphemes. In Brown's words, all the morphemes "like an intricate sort of ivy, begin to grow up between and upon the major construction blocks, the nouns and verbs, to which Stage I is largely limited" (Brown, 1973, p. 289).

In Turkish, by contrast, the markers and 'little words' appear much earlier (see Aksu-Koç & Slobin, 1985). Noun and verb inflections are common in the very earliest stages of development, even before the children are putting words together into sentences. In fact, Aksu-Koç and Slobin suggest that children as young as 15 months show some understanding of how to use inflections. Thus, although young children's utterances are short and relatively simple, they "do not have the familiar 'child language' look evidenced in most other languages" (Aksu-Koç & Slobin, 1985, p. 845).

It is also important to note that differences across languages are not the only differences between children. There are also individual differences between children acquiring the same language; some children are faster and others are slower,

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and some children are born with cognitive impairments that prevent them from acquiring language without a lot of specialist help. We also must not forget that in much of the world, children acquire two or more languages simultaneously. So we need to consider how learning two languages at once differs from learning one language at a time.

That said, no one would dispute that English, Turkish and all the other thousands of languages in the world can all be described as languages. So what do all these languages have in common that allows us to call them languages? What makes a language a language?

1.2.2 What makes a language?

In the 1960s, Charles Hockett set out to define the characteristics of language. He initially proposed 13 *design features* of language, but these were later extended to 16. He argued that "there is solid empirical justification for the belief that all the languages of the world share every one of them" (Hockett, 1982, p. 6) Although some of these design features are shared by other animal communication systems, only human languages are said to have all the features.

Table 1.1

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Feature	Description
Vocal-auditory channel (Manual-visual channel added in 1968 to incorporate sign languages)	Language is composed of spoken sounds that are transmitted to the ears and auditory channels.
Broadcast transmission and directional reception	Speech sounds radiate in all directions so that they can be perceived by any listener. However, the listener can determine the direction from which the sound comes (and thus can determine the identity of the speaker).
Rapid fading	Speech sounds are transitory; they do not last very long.
Interchangeability	Any human can reproduce any aspect of language they hear, regardless of age and gender. This is quite unusual in nature (e.g. female birds do not reproduce the mating calls of male birds).
Complete feedback	Speakers can monitor their own speech at every level, allowing them to make minute adjustments to ensure clarity and to catch and correct speech errors.
Specialisation	The organs used for producing speech are specially adapted for language (lips, tongue, vocal tract) and the ear and auditory tract are specially sensitive to speech sounds.
Semanticity	Language carries meaning. In particular, words carry a particular fixed meaning that is shared among communities. For example, the word <i>salt</i> means salt and only salt. It cannot be used to refer to sugar or pepper.

Feature	Description
Arbitrariness	Although words carry fixed meaning, there is no intrinsic reason why any word is linked to a particular meaning. Although some words sound like their meanings (<i>crack, hiss</i>), most words do not. This is why different languages can use different words to refer to the same object (e.g. <i>dog/chien/Hund</i>).
Discreteness	Language is made up of a string of discrete sounds chained together. Each of these sounds varies only minimally from others, but we perceive them as very different.
Displacement	We can talk about things that are remote in time and space (e.g. the past, the future, things that are not physically present).
Productivity	We can create and understand words and sentences that have never before been uttered. We create new sentences by combining words in new ways and we create novel uses for familiar words (e.g. <i>text</i> was originally a noun but is now used as a verb, e.g. <i>text me</i>).
Traditional transmission	Language is transmitted from one generation to the next in the traditional way, by learning and teaching.
Duality of patterning	Language exists on two levels. On one level are words, which carry meaning. On the other level, these words are made up of speech sounds (phonemes) which carry no meaning.
Prevarication (added by Hockett & Altmann, 1968)	Language can convey imaginary information (e.g. lies, stories, hypothetical entities).
Reflexiveness (added by Hockett & Altmann, 1968)	Language can be used to talk about language itself (metalinguistic ability).
Learnability (added by Hockett & Altmann, 1968)	Humans, at least when they are young, have the ability to learn any new languages, not just the language of their biological parents.

Hockett's design features are summarised in table 1.1 but it is worth looking at four of them in more detail. The first is *semanticity*. By this Hockett was referring to the idea that languages contain symbols (words) that carry a fixed meaning that is shared among members of a community. Thus, although different languages have different words to refer to a *rose*, all speakers of the same language must use the same word. Otherwise, successful communication cannot take place. It is important, too, that words do not refer to specific objects but to a whole category of objects. Thus the word *rose* can be used to refer to any rose in the world, not just a particular rose in my garden. This is crucial because a language that required us to dream up a different word for every single object in the world (every leaf, every flower, every tree) would simply be unlearnable.

A second important design feature is *arbitrariness*. Most words have no intrinsic relationship at all with the objects they represent. For example, there is no particular reason why the word *rose* should be the one we use to refer to that particular flower.

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In fact, in other languages, a different word is chosen. The word *rose* carries its meaning simply because we – the community of English speakers – have decided that it is so. If we wanted, we could unanimously decide to swap the words *rose* and *daffodil* around so that the word *rose* was used to describe a daffodil and vice versa. The only consequence would be the expense of re-setting and re-publishing dictionaries and gardening books. As long as everyone agreed to the change, we would still be able to communicate successfully about flowers.

A third design feature is *productivity*. Humans are immensely creative with their language, inventing new words all the time, keeping dictionary compilers on their toes. Eighty-six new words were added to the Collins Online English Dictionary in 2012, including *floordrobe* (a pile of clothes left on the floor of a room), *hangry* (the irritability that results from the feeling of hunger) and *amazeballs* (an exclamation expressing enthusiastic approval; see http://www.collinsdictionary.com/). However, creativity is not restricted to new words. There is another type of creative ability that humans use every day in their language, instinctively. This is the ability to produce completely new sentences at will, and to comprehend novel sentences produced by others. For example, in 1957, Chomsky created the sentence colourless green ideas *sleep furiously* in order to demonstrate that sentences can be both grammatically correct and meaningless at the same time (Chomsky, 1957). Chomsky's sentence is now legendary, but any speaker can create a whole raft of similar sentences just as quickly and easily as Chomsky: colourless green ideas slept furiously yesterday, who knows why colourless ideas sleep furiously, did colourless green ideas sleep furiously or gently? All languages carry this creative power.

A fourth important design feature is *displacement*. This refers to the fact that humans can talk about events that are remote in time and space. With language, we can talk about events in the past or in the future as easily as we talk about events in the present. This means that I can invite you to a party next week as easily as I can thank you for attending my party last night. We can also talk about events that are remote in space; events that occur in far off places like the moon or on Mars. We can even talk about concepts that do not actually exist in any physical sense, such as truth, justice and the American way. In other words, all languages allow us to discuss events that are displaced from our immediate context.

Hockett's design features neatly and effectively capture the characteristic features of human languages. Let us suppose that next week, an intrepid adventurer happens upon a new isolated tribe in the remote Amazonian jungle. It is highly probable that this tribe's system of communication will contain all of Hockett's design features. In fact, most linguists would probably be willing to bet money on it.

However, although Hockett's design features may be universal across all human languages, they may not be unique to human languages. Honey bees, for example, use a complex system of dance moves and tail waggles to communicate the direction and distance of new sources of nectar from the hive (von Frisch, 1954). Bee communications, then, clearly demonstrate the feature of displacement, communicating information about a distant location. Perhaps, then, language is not unique to humans.

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