3. Passive sentences

Although the subject of an English sentence usually names the doer, things don't always work this way. In so-called "passive" sentences such as the one below, the subject names the undergoer.

The car was bumped (by the truck).
↑
subject
(undergoer)

Two other features of passives are also evident in this sentence: they always include a light verb such as *be* or *get*, and the doer is either not mentioned or is accompanied by the preposition *by*.

The car was bumped (by the truck).
↑ ↑
light verb doer
(does not have to be mentioned)

Children's early passives sentences

Children usually start producing passive sentences when they are three years old. More often than not, the doer is not mentioned in these sentences.

Some passives from the speech of Adam[11]
So it can't BE CLEANED? (3;2)
I don't want the bird to GET EATED. (3;7)
I want to BE SHOOTED. (3;8)
Why he gon' BE LOCKED in a cage? (3;10)
Mommy, de cow gonna GET LOCKED UP. (4;0)

Some passives from the speech of Christy and Eva[12]
Do you think that flower's supposed to BE PICKED by somebody? (Eva, 2;10)
She brought her inside so she won't GET ALL STINKED UP by the skunk. (Eva, 4;1)
I just GOT PINCHED from these pointed stuff. (Eva, 3;3)
Does the cream of wheat need to BE COOLED? (Eva, 4;2)
Hair needs to BE BRUSHED. (Christy, 4;2)

Not only do three- and four-year-old children produce passive sentences, they often go one better than adults by over-producing them. Here are a few examples of children's passive sentences that no adult would ever utter.[13]

Is it all NEEDLED? (3;2)
It WAS BANDAIDED. (3;4)
. . . they won't GET STALED. (3;6)
The tiger will come and eat David and then he will BE DIED . . . (4)
I want these pancakes to BE SUGARED. (4;2)
Why IS the laundry place STAYED open all night? (4;3)
How WAS it SHOELACED? (4;4)

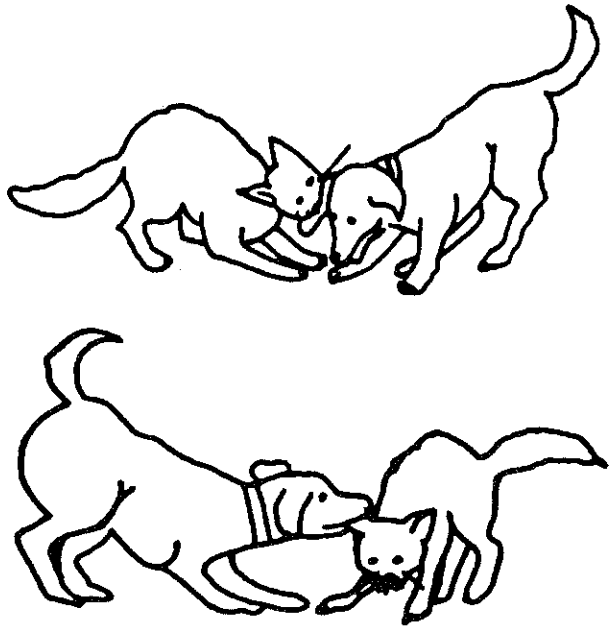
Children are also very good at catching the subtle difference in meaning between passives that use the light verb *be* and those that use *get*. Adults tend to use the *get*-passive mostly for actions that have negative consequences (e.g., ***I just got*** *bitten by a mosquito*) and the *be*-passive for situations with more neutral consequences.

Nancy Budwig took a careful look at passive patterns in the speech transcripts of two children over a period of several years, beginning when they were two years old.[14] She found that they systematically made the same contrast between *be* and *get* that adults do.

Why passives are still hard to understand

Despite all of this, something very strange happens when children are given comprehension tests – they often can't understand passives!

A typical comprehension test works something like this. The child sits at a table with the experimenter, and the experimenter reads her a series of sentences one at a time. As she hears each sentence, the child is shown two pictures and has to point to the one that the sentence describes.[15] For instance, the experiment might say "The dog is bitten by the cat," and have the child select one of the pictures below.[16] (Another commonly used comprehension test involves giving the child a set of toys and asking her to act out the meaning of the test sentences.)[17]



Children under age five usually do very poorly on these tests, typically getting less than 50 percent of the passive sentences right. In contrast, they do very well on "active" sentences such as *The cat bit the dog*, in which the subject is the doer.

Most children do better on certain types of passive sentences than on others. For example, even children who misinterpret sentences like *The dog was bitten by the cat* often do well on the following passive sentences.

The carrot is eaten by the rabbit.
The pencil is dropped by the girl.

That's because sentences like these two can be understood without paying attention to whether they are active or passive. When you have a carrot and a rabbit and the verb *eat*, there's really only one thing that can happen – the rabbit has to eat the carrot, since carrots can't eat rabbits.

But things aren't so easy in all passive sentences. In the case of the sentence *The dog was bitten by the cat*, you can't tell what happened just by thinking about dogs and cats – in real life, either one could bite the other. So it's necessary to adopt another strategy. For young children, that other strategy often involves a matter of numbers.

Most sentences involving a doer and an undergoer are active, with the subject naming the doer and the direct object naming the undergoer. In fact, probably fewer than 5 percent of the sentences that children hear are passives.[18]

So it's natural for children to expect the sentences that experimenters give them to be active too. This expectation is sometimes referred to as the *Canonical Sentence Strategy*.[19]

The Canonical Sentence Strategy
Expect the first noun to be the doer and the second noun to be the undergoer.

It's easy to overturn this expectation if the passive sentence has no sensible "active" meaning. That's why children have no trouble interpreting a sentence like *The carrot was eaten by the rabbit*, where it just wouldn't make sense to think of the first noun as the doer.

But things aren't so easy with a sentence like *The dog was bitten by the cat*, since there's nothing nonsensical about a dog biting a cat or vice versa. The only way to interpret this sentence correctly is to notice the little words *was* and *by*, and the suffix *-en*.

And that's where the problem seems to lie. These items are just not that audible, since they are both short and unstressed. Often, they go unnoticed by children in the rush to interpret the sentence, and the Canonical Sentence Strategy takes over.

What the Canonical Sentence Strategy does:
The dog was bitten by the cat.
↑ ↑
[1st noun = doer 2nd noun = undergoer]
→ the meaning "The dog bites the cat."

The effects of the Canonical Sentence Strategy are strongest in three-year olds, who may succumb to it 80 percent of the time or more. (That is, they correctly interpret passives only about

20 percent of the time.) Older preschool children do somewhat better, with scores on passive sentences typically ranging from 30 to 70 percent correct (compared to over 90 percent correct on active sentences).

So, children *are* capable of understanding passive sentences at least some of the time. Which is hardly surprising, since they can produce them in their own speech. It just seems to take a while to get good at noticing the clues that mark someone else's sentence as passive.

4. Understanding things that aren't there

In the previous chapter I made the point that sentences are like trees whose branches can sprout outward in many different directions. For example, if a sentence contains the verb *know*, it can expand outward by permitting the addition of another entire sentence.

We know.
We know [children eventually grow up].

The bracketed sequence of words in this example is a complete, self-contained sentence. Sometimes, though, a partial or incomplete sentence can appear in that position. For example, the second part of the following sentences consists of a verb and a direct object, but no subject. (To help make this clear, I've put in a dot to represent the missing subject.)

verb dir. obj.
↓ ↓
The plumber tried [. to fix the leak].
The boy hopes [. to paint the house this summer].
The children wanted [. to see that movie].
The bank decided [. to approve the loan].

The subject of the second verb in these sentences is "understood," to use the informal term. That is, it is not explicitly stated, but its identity can be easily figured out. We know that the person fixing the leak is the plumber, that the person who'll paint the house is the boy, and so forth. Let's use a two-headed arrow to help keep track of this information.

The plumber tried [. to fix the leak].
↑_____↑

The boy hopes [. to paint the house this summer].
↑_____↑

Keeping it short

Things get a bit more complicated, though. The following sentence is a case in point.

Mom told Paul [. to wash the dishes].
↑
understood subject

Here there are two nouns to the left of the understood subject (*Mom* and *Paul*).

If you're a speaker of English, you know that the second one is the missing subject of *wash*. (That is, Paul – not Mom – is supposed to wash the dishes.) The "rule" is probably something like this.[20]

The Minimal Distance Principle
To find a missing subject, look for the nearest previous noun.

This works in the "*tell* sentence" above, where there are two previous nouns.

nearest previous
noun
↓
Mom told Paul [. to wash the dishes].
↑___↑

And, of course, it works in sentences where there is only one previous noun, which is therefore automatically the "nearest" one.

nearest previous
noun
↓
The plumber tried [. to fix the leak].
↑_____↑

So far, so good. But there's a famous pattern for which the Minimal Distance Principle doesn't work.

Making promises

The problem lies in the particular type of "promise" sentence exemplified below. (Readers who grew up in North America will probably find this sentence natural, but I'm told that *promise* cannot be used in this way in British English.)

Dad promised Paul [. to wash the dishes].

The Minimal Distance Principle tells us that the understood subject of *wash* should be *Paul*, but this isn't right. It's Dad, not Paul, who is going to do the dishes.

the nearest previous noun
↓
Dad promised Paul [. to wash the dishes].
↑_____↑
The right meaning: Dad is going to wash the dishes.

One of the most famous child language experiments ever deals with just such sentences.

In the late 1960s, Carol Chomsky conducted an experiment on "*promise* sentences" as part of the research she was doing for her doctoral dissertation at Harvard.[21] Sitting at a table with a child (she studied forty children in all, aged five to ten), she first made sure that the child understood what the verb *promise* meant. Here are two sample excerpts from that part of the experiment. (I've written the children's responses in small capitals to make them easier to spot.)

Scotty (age 5)
What do you do when you promise someone something?
WHEN YOU DON'T FOOL.

Jimmy (age 6;10)
You're walking home from school with your friend, and as you're saying good-bye you promise him that you'll call him up this afternoon. How would you say that?
I'LL CALL YOU RIGHT UP AFTER LUNCH.

With that out of the way, Chomsky then asked the child to act out the meaning of various *tell* and *promise* sentences with the help of toys.

Bozo tells Donald [. to hop up and down]. Make him do it.
Bozo promises Donald [. to hop up and down]. Make him do it.

All the children did fine on the *tell* sentences – they'd make Donald hop up and down. (Remember that *tell* sentences obey the Minimal Distance Principle.)

nearest previous
noun
↓
Bozo tells Donald [. to hop up and down].
↑_____↑

But the younger children had trouble with the *promise* sentences. Instead of making Bozo hop up and down (the adult interpretation), they once again made Donald hop.

the children's interpretation
↓ ↓
Bozo promises Donald [. to hop up and down].
↑_____↑
the adult interpretation

You can probably see what's going on here – the children hadn't figured out that *promise* is an exception to the Minimal Distance

Principle. They therefore interpreted the nearest previous noun as the understood subject of *hop*.

nearest previous
noun
↓
Bozo promised Donald [. to hop up and down].
↑_____↑

It's easy to see

Carol Chomsky's dissertation included one other famous experiment. It involved the following sentence, in which the second verb (*see*) has both an understood subject and an understood direct object. (I'll use a dash to indicate the understood direct object.)

The doll is easy [. to see _].

Although this sentence is only six words long, it reveals just how complicated language can get. The Minimal Distance Principle picks the doll as the subject of *see*–that is, as the one who sees. (Remember that when there is only one preceding nonn, the Minimal Distance Principle automatically picks it as the missing subject.)

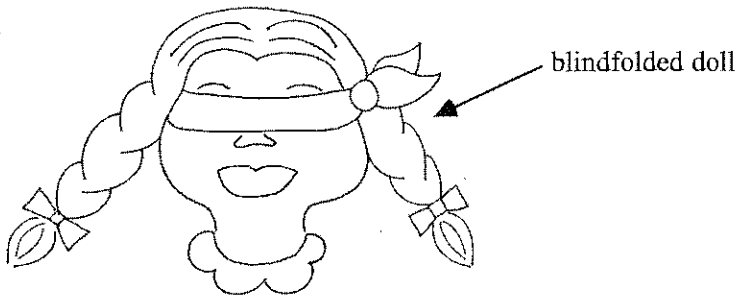
The doll is easy [. to see _].
↑_____↑

But that's wrong. The right interpretation is something like "It is easy to see the doll," in which the doll is interpreted as direct object of *see* (the thing that is seen), and no particular person is identified as its subject.

The doll is easy [. to see _].
↑_____↑

Do children know this?

Chomsky's experiment in this case was extremely simple: she showed the child a blindfolded doll and asked, "Is the doll easy to see?"



Is the doll easy to see?

An adult would interpret this sentence to mean "Is it easy to see the doll?" (with *the doll* as direct object of *see*). And since the doll is in plain sight, the right answer is "yes."

Quite a few of the children in Chomsky's experiment did answer correctly, as the following excerpts from their conversations with her show.

ANN C. (age 8;8)
Can you tell me, is the dolly easy to see or hard to see?
EASY.
Could you make her hard to see? Can you think of a way?
IN THE DARK.

ANN M. (age 8;7)
Is the doll easy to see or hard to see?
EASY.
Would you make her hard to see?
SO YOU CAN'T SEE HER AT ALL?
Okay.
(Child places the doll under the table.)
Tell what you did.
I PUT HER UNDER THE TABLE.

However, more than a third of the children responded incorrectly. Here are some examples of the types of things they said.

ERIC (age 5;2)
Is the doll easy to see or hard to see?
HARD TO SEE.
Will you make her easy to see?
OKAY. [He removes blindfold.]
Will you explain what you did?
TOOK OFF THIS. [pointing to blindfold]
And why did that make her easier to see?
SO SHE CAN SEE.

LISA (age 6;5)
Is the doll easy to see or hard to see?
HARD TO SEE.
Will yon make her easy to see?
IF I CAN GET THIS UNTIED.
Will you explain why she was hard to see?
[to doll:] BECAUSE YOU HAD A BLINDFOLD OVER YOUR EYES.

It's clear from these conversations that some of the children thought they were being asked about whether it was easy for the doll to see things. Because the doll was blindfolded and therefore couldn't see anything, they answered "no."

But why would they think that the question meant this in the first place? Possibly they were using the Minimal Distance Principle to fignre ont the identity of the understood subject rather than the identity of the understood direct object. This then gave them the incorrect interpretation depicted below, in which they identified the doll as the subject of *see*.

The doll is easy [. to see _].
↑_____↑

5. Understanding pronouns

Pronouns are energy-saving devices that allow us to refer to someone or something whose identity we already know without

using a name (like *Bob*) or an article + noun combination (like *the man*).

Bob thinks that **he** can go. (he = Bob)
The man's own dog bit **him**. (him = the man)

Even very young children seem to know the function of pronouns, since they are eager to use them if a preceding noun has already established what they refer to. There's a very simple way to see this.

When children are asked to imitate a sentence, they often make changes so that it sounds the way THEY think it should. This tendency yields a very interesting result when children aged two and a half to three and a half are asked to repeat a sentence like the following, in which the same noun occurs twice.[22]

Because **Sam** was thirsty, **Sam** drank some soda.

They often replace the SECOND noun by a pronoun, saying something like:

Because Sam was thirsty, **he** drank some soda.

And when they're given a sentence in which the pronoun comes before the noun, they often change it so that the pronoun comes after the noun.

Because **he** was thirsty, **Sam** drank some soda.
⇓
Because **Sam** was thirsty, **he** drank some soda.

Evidently, even very young children have figured out that pronouns are used to refer to someone who has been recently mentioned. That's the easy part.

Reflexive responses

One of the things that makes the acquisition of pronouns challenging is a contrast between "plain pronouns" such as *he/him* or *she/her* and "reflexive pronouns" such as *himself* or *herself*.

Plain pronouns	Reflexive pronouns
I/me	myself
you	yourself
he/him	himself
she/her	herself
it	itself
we/us	ourselves
they/them	themselves

One difference between the two types of pronouns shows up in patterns where one sentence occurs inside a still larger sentence. In the examples that follow, I've put brackets around both the main sentence and the smaller sentence that's inside it, and I've marked each sentence with an "S" subscript.

main sentence
[S Mandy thinks [S *Suzie pinched someone*]].
smaller sentence inside

Now look at what happens when we use a pronoun in place of *someone*.

[S Mandy thinks [S Suzie pinched herself]].
[S Mandy thinks [S Suzie pinched her]].

If I say *herself*, the person who got pinched has to be Suzie. On the other hand, if I say *her*, it's either Mandy or it's someone not mentioned in the sentence. But it can't be Suzie.

The rules that we follow here can be stated as follows. (Of course, I'm simplifying this a bit, but that doesn't matter for what we want to do next.)

The Reflexive Pronoun Rule
Reflexive pronouns must refer to someone mentioned in the same small sentence.

The Plain Pronoun Rule
Plain pronouns cannot refer to someone mentioned in the same small sentence.

The Reflexive Pronoun Rule tells us that *herself* refers to Suzie, since she is mentioned in the same small sentence (the one inside the inner brackets).

[S Mandy thinks [S Suzie pinched herself]].
↑_____↑
The reflexive pronoun refers to a noun in the same small sentence.

And the Plain Pronoun Rule tells us that *her* cannot refer to Suzie in this type of sentence, although nothing prevents it from referring to Mandy.

[S Mandy thinks [S Suzie pinched her]].
↑_____↑
The plain pronoun does not refer to a noun in the same small sentence.

There are various ways to figure out when children learn to make this distinction. One technique involves asking them to act out the meaning of sentences with the help of dolls and other toys. For example, an experimenter might take a Mickey Mouse doll and a Donald Duck doll and say:

Donald thinks that Mickey Mouse scratched himself. Show me what Mickey did.

or

Donald thinks that Mickey Mouse scratched him. Show me what Mickey did.

If the child correctly understands the first sentence, she'll have Mickey scratch Mickey. If she understands the second one, she'll have Mickey scratch Donald.

Another way to study the interpretation of pronouns is to ask children questions about pictures. Here's an example from an actual experiment.[23]

Here's a picture of Mama Bear and Goldilocks

Is Mama Bear touching her? [Yes]

Is Mama Bear touching her? [No]

A child who understands how plain pronouns work will answer "yes" for the first picture and "no" for the second one. In contrast, if the question is *Is Mama Bear touching herself?*, the correct answer is "no" for the first picture and "yes" for the second one.

Regardless of how the experiment is done, the resnlts with children aged three to five are pretty much the same.[24] Even the younger children tend to do very well with the reflexive pronouns. But they have trouble with plain pronouns, which they tend to interpret as if they were reflexives. So, they often say that yes, Mama Bear is touching her when looking at the picture on the right.

Why do children make mistakes on plain pronouns? One possibility is that reflexive pronouns are easier to interpret because you don't have to look as far to find out who they refer to. (Because of the Reflexive Pronoun Principle, the person they refer to has to be mentioned in the same small sentence.)

Children seem to adopt a similar effort-saving strategy when they interpret a plain pronoun too. They look to see if there is someone mentioned in the same small sentence to whom it might refer. And when there is someone, the children sometimes decide to look no farther – they simply let the pronoun refer to that person.

[S Mama Bear touched her].
↑_____↑

Despite their problem interpreting some plain pronouns, children appear to make almost no mistakes when it comes to choosing between plain pronouns and reflexive pronouns in their own speech.

In one painstaking study, researchers examined about 100,000 utterances produced over a three-year period, beginning when the children were two years old.[25] They found that both *me* and *myself* were used correctly at least 95 percent of the time, with only occasional mistakes.

Mistake involving *me*: I see **me**. (Adam, 34 months, looking through a telescope)

Mistake involving *myself*: Don't you drop me . . . you hurt **myself**. (Abe, 34 months)

So it seems that children actually know the distinction between plain and reflexive pronouns at a very early age. They just have trouble using it under some circumstances. As you may recall, something similar happens with passive sentences, which children produce in their own speech but sometimes have trouble understanding in the speech of others.

This sort of phenomenon has led many linguists to distinguish between linguistic competence (*knowledge* of language) and linguistic performance (the ability to *use* that knowledge in particular circumstances – including contrived experiments where unfamiliar people are showing you funny pictures and asking strange questions).

It is widely recognized that children's competence far exceeds their performance in most cases, which is why researchers are constantly looking for techniques that will allow a more accurate assessment of what children know and when they know it.

6. Pronouns and stories

All of the above notwithstanding, children do have at least one problem with plain pronouns. As the following example from a talkative two-year-old helps show, children who are telling a story often use pronouns in ways that make it difficult to know who they are referring to.[26]

Researcher:	Can you tell me about the barbecue that you had?
Child:	We had a barbecue right over here and I told him to don't put it . . . I told Dan what he was doing. And . . .
Researcher:	You told Dan what he was doing?
Child:	Yeah. And when I was doing it I turned, pushed him, what I do pushed way up high.
Researcher:	You pushed him way up high.
Child:	Yes. But he turned to go.
Researcher:	But he what?
Child:	He turned to go on me. He didn't come to my house.

Even the researchers who recorded this story were baffled.

> What in the world is the child talking about here? In the above example, she states that she "told him to don't put it." Yet who is being told? "The Dan of the next sentence or someone else?" And who is Dan? He is nowhere identified, and could be a peer or a parent of another child or some other adult. Is the "he" in the next sentence also Dan? What is being put? And what is the child doing when she "was doing it?" Who is the "him" she turned and pushed?

In another study, four-year-olds who were asked to describe pictures frequently used pronouns in ways that made them difficult to interpret. How, for example, could anyone be expected to know that the first *she* in the following story refers to a girl and the second *she* to a woman?

> . . . she's sitting on the seat airplane . . . she's giving something to a girl, now she's looking at a book . . . now she's putting the thing up high.

The ambiguous use of pronouns is very common (and totally normal) in the speech of preschool children. It is noticeably less frequent among six- and eight-year-olds, whose sensitivity to the perspective and informational needs of others has improved with time and experience. In fact, older children will sometimes even stop in mid-sentence to correct an unclear use of a pronoun.[27]

> . . . and she's lea . . . and the girl is leaning . . .

Strange stories

Pronouns are uot the only thing that children have trouble keeping track of when telling stories. Many of their early stories are also missing important coutextual information about the participants, the place where the event took place, and its time. The following example is from two-and-a-half-year-old Todd.[28]

Todd:	I gonna bring this. (a tape recorder)
Researcher:	Where are you gonna bring it?
Todd:	Out here.
Researcher:	Okay.
Todd:	He bite my leg.
Researcher:	What?
Todd:	Duck bite my leg.
Researcher:	The dog bit your leg. Oh, oh, the duck. Oh boy!
Todd:	Me go in the water.
Researcher:	You went in the water.
Todd:	Yeah. My leg.
Researcher:	You were telling me about a duck?
Todd:	He bites. (screaming)
Researcher:	He bites.
Todd:	And kick.
Researcher:	And kick.
Todd:	Duck bite me and kick me and duck kick me and, and bite.

Notice that Todd provides no information about where he was, when the events happened, or who was with him. This sort of information often has to be coaxed out of children by their parents. In fact, in doing this, parents may well be giving their children an idea of the type of "scaffolding" that a story requires. Notice how much more detailed three-and-a-half-year-old Cathy's story is, with its explicit information about the participants and the time and place of the key event.[29]

Researcher:	Have you ever gotten stung by a bee?
Cathy:	But Ian [her brother] got a big sting when he was first born.
Researcher:	Ian had a big sting when he was first born?
Cathy:	Yeah.
Researcher:	Well, tell me about it. What happened?

Cathy: I was walking with him and, and I just and he falled and he didn't know that he falled right on a bee. And he, and his knee was on a bee and stung, he got stung on a bee.

This is perhaps not an epic tale, but it does contain the rudiments of truly informative communication, which is what learning a language is all about.

7. Can you quantify that?

If someone tells you that John read a book last night, you'd know right away that a single book was read. But the interpretation of *a* is not always so straightforward, as you can see by considering the following sentence.

EVERYONE read A BOOK last night.

We can use this sentence to describe a situation in which Jerry, Lou-Ann, and Sandy all read the same book. Or we can use it to describe a situation in which there are three different books: it's possible that Jerry read *Charlotte's Web*, Lou-Ann read *Old Yeller*, and Sandy read *The Mark of Zorro*. That's because *a* can interact with *everyone* semantically, so that there can be as many books as there are readers.

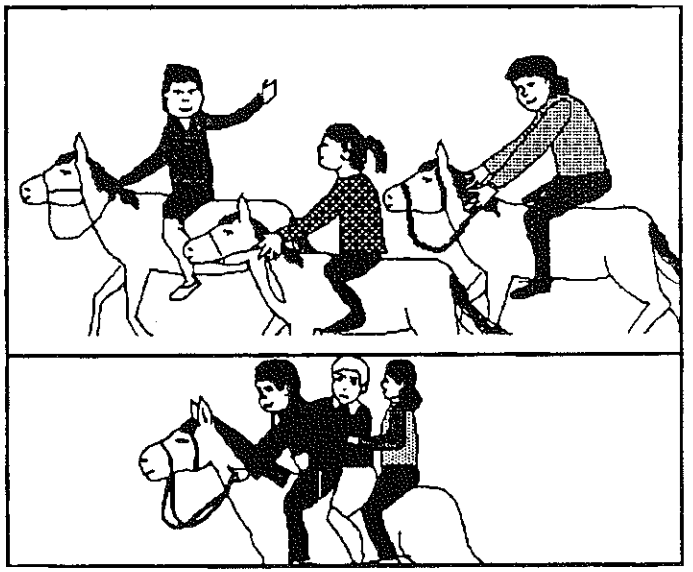
This type of interaction is very common when two quantifiers (words such as *every* and *a*, which express quantities) occur in the same sentence, especially when the word denoting the larger quantity (e.g., *every*) is part of the subject and the word denoting the smaller quantity (e.g., *a*) is part of the direct object. There are many other examples of this.

All the children wanted to see a movie.
Each gift comes in a box.
Many of the culprits attend one of the schools in this neighborhood.
Most students are interested in something.

How good are children at understanding sentences containing quantifiers? Remarkably good, it seems. An impressive piece of

evidence for this comes from a qnestion-and-answer experiment in which children are shown a picture and then asked a simple question.

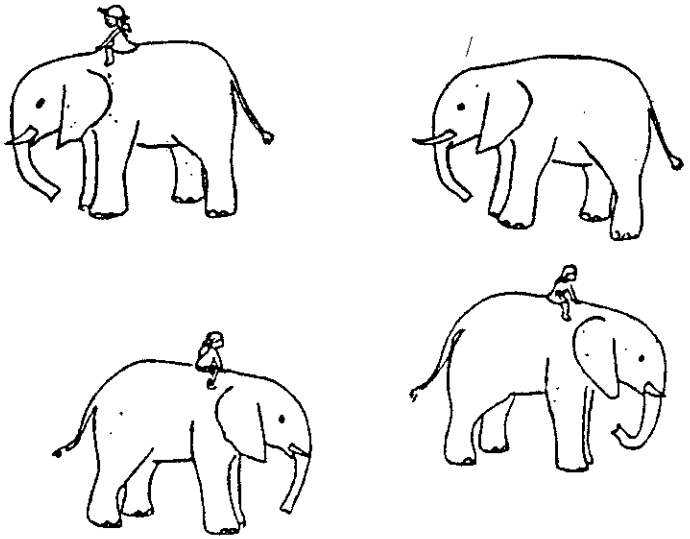
For example, in order to determine whether children understand the interaction between *every* and *a*, experimenters show them pictures like the ones below and ask them, "Is every child riding a horse?"[30]



"Is every child riding a horse?"

Even three-year-olds respond "yes" for both pictures, demonstrating that they understand that *a* can be interpreted on its own (giving the meaning "one and only one") or can interact with *every*.[31]

However, children do sometimes have trouble with the interaction between *every* and *a*. The problem shows up when they are shown a picture such as the following, and are asked "Is every girl riding an elephant?"[32]



"Is every girl riding an elephant?"

Children sometimes respond "no" to this question, explaining that there is one elephant who is not being ridden![33] They seem to think that the sentence should describe a symmetrical situation in which there is au elephant for every girl and a girl on every elephant.

There is clearly something very difficult about this picture – in fact, even adults are sometimes taken aback by it. But why do children apparently misinterpret it in the way that they do?

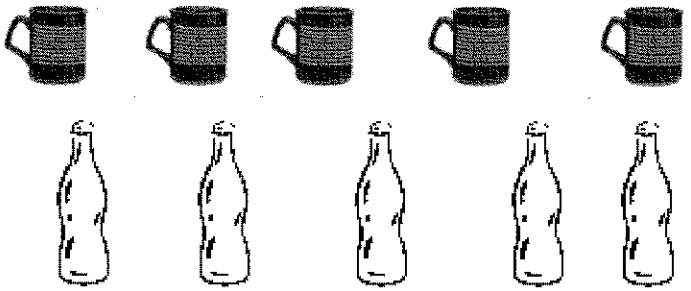
One idea is that the meaning of *every* can somehow "spread" through the sentence for children. As a result, it applies both to girls and to elephants, giving a meaning like "Every girl is riding an elephant and every elephant is being ridden by a girl."[34]

Another idea is that the question is misleading without a proper context. Normally, we don't ask a question when the answer is obvious – as it is here. We'd be more likely to ask whether every girl is riding an elephant in a situation where there is some doubt as to whether this has actually happened.

In a new series of experiments, children aged three to five were presented with a story in which a mother talks with her two

daughters about whether they should drink soda or hot apple cider after skiing (note the two possible outcomes – having soda or having cider).

After expressing an initial preference for soda, the girls are persuaded to follow their mother's example and have apple cider. Reinforcing the possibility of an alternative outcome, the picture accompanying the story depicts five cups of apple cider AND five bottles of soda.[35]



When asked whether every skier drank a cup of apple cider, the children overwhelmingly responded in the affirmative. Not a single child responded negatively on the grounds that two of the five cups of cider were untouched. (However, two children did remark that they thought "every skier" was too strong a statement to make when there were just three skiers in the story!) Once again, it seems that children may kuow more than can be revealed in a single experiment.

Summing up

Overall, the picture that emerges from the study of how childreu learn the meaning of sentences is a familiar one. No matter how complicated things get, it all seems to come naturally to children.

From their first attempts at one- and two-word speech, they are skilled at expressing themselves with the limited means at their disposal. Their ability to understand the speech of others is even more advanced, running well ahead of their expressive abilities.

Children make relatively few comprehension mistakes. And the few errors that do occur reveal much about how they learn to interpret sentences. Iuitially, it seems, children rely on small word-based rules ("the noun to the left of *read* refers to the doer, the noun to the right refers to the undergoer"). Later, bigger generalizations (like the Canonical Sentence Strategy and the Minimal Distance Principle) emerge, dramatically increasing the child's interpretive powers.

Sometimes, as we have seen, these generalizations are TOO powerful. But the occasional mistakes they yield are manageable and disappear in time, as children become better at dealing with exceptions and special cases.

So far in this book, we've talked about words, sentences, and their meaning, but we've said nothing about pronunciation. The next chapter looks at how children come to perceive and produce the sounds of language.

6 Talking the talk

The first sound that a child makes is a shrill cry as air enters his lungs at birth. Cooing noises begin around the age of two or three months. The production of speech-like sounds under the guise of babbling begins at about the same time or a little afterward and is usually fully developed by the age of six months or so. The child's first real words often start to show up around the age of ten or twelve months.

Age range	Typical sounds[1]
birth to one month	crying, burps, grunts
two to three months	cooing
four to six months	squealing, yelling, growling, trills made with the lips, marginal babbling
seven to twelve months	full-fledged babbling
ten to eighteen months	first words

Long before a child tries to say anything, though, he listens. How children perceive speech is also a good place to begin thinking about how they come to learn the sound system of their language.

1. An ear for language

Children seem to be especially designed to listen to language. In fact, they don't even wait until they are born to start. Speech can be heard in the womb—not clearly enough to discern individual sounds, but with enough clarity to make out the intonational contour and other features of the speaker's voice. But how can we know whether this prenatal experience has an impact?

Because infants exhibit an inborn tendency to turn their heads toward the source of a sound, it is possible to identify their early