

Differences in the pronunciation of the same word can occur even within the space of seconds.³⁶ Nonetheless, there are a few general tendencies to report, with the important caveat that these are just tendencies and that there is considerable variation from child to child.

Early vowels and consonants

Five vowel sounds are typically acquired quite early – “ee,” “ah,” “oo,” “oh,” and “uh.”³⁷ These vowels are found in words such as the following. (When linguists discuss sounds, they usually do so with the help of special symbols from the International Phonetic Alphabet. In order to keep things as simple and straightforward as possible, I’ll avoid that practice here. However, you can find these symbols and a description of the sounds they represent in Appendix 2 at the end of the book.)

bee (“ee”)
top (“ah”)
moo (“oo”)
low (“oh”)
nut (“uh”)

The most common early consonants in word-initial position are “b,” “d,” “m,” “n,” and “h.”³⁸ By age two, a typical English-speaking child can produce the following consonant sounds.³⁹

Typical consonant inventory at age two

| | | | | |
|---|---|---|---|---|
| p | b | m | f | w |
| t | d | n | s | |
| k | g | | | |

There’s a fascinating correlation between these tendencies and the distribution of particular sounds in the world’s languages – the sounds that are acquired early are generally found in more languages than the sounds that are acquired late. Certain sounds

are evidently more basic and easier for the human vocal tract to produce.

Even the easy consonants are more likely to be heard at the beginning of a syllable than at the end. As we’ll see shortly, children often delete consonants at the end of a syllable, pronouncing *gum* as “guh” and *nose* as “no.” The consonants most likely to be pronounced at that end of a syllable in children’s early words are “p,” “t,” “k,” and “n.”⁴⁰

By age four, the child’s inventory of sounds has grown considerably. All the vowel sounds have usually been acquired by this time, as have the consonant sounds listed below.⁴¹ (I’ve used boldface to indicate the sounds that are likely to have been added after age two.)

Typical consonant inventory at age four

| | | | | | | | | |
|---|---|-----------|-----------|----------|-----------|---|----------|----------|
| p | b | m | f | v | ch | j | w | y |
| t | d | n | s | z | | | l | r |
| k | g | ng | sh | | | | | |

Still to be acquired at this age are the “th” sounds in words like *thing* and *that*.

5. Making adjustments

This brings us to the question of what children do when they try to say a word containing sounds that they can’t yet pronounce. Sometimes, they avoid saying the word altogether.⁴² But more often they either drop the tough sound (deletion) or replace it by an easier one (substitution).

This can happen A LOT: more than 90 percent of the early words produced by some children show the effects of deletion and/or substitution.⁴³ Let’s look at some concrete examples. (If you have a young child at home, you’ll probably be able to add dozens of additional examples of your own.)

Deletion

Word-final consonants are prime candidates for deletion, especially in a child’s early speech. Initial consonants, in contrast,

are typically retained, especially if they come right in front of a vowel.

| | | |
|-------------|-------------|--------------|
| dog → "dah" | bus → "buh" | boot → "boo" |
| ↑ | ↑ | ↑ |
| delete | delete | delete |

Deletion in these cases creates a syllable that consists of a single consonant followed by a single vowel. (Linguists call this a "CV Syllable.")

| | |
|-------------|----|
| CVC | CV |
| dog → "dah" | |
| ↑ | |
| delete | |

CV patterns are initially favored by children the world over, regardless of what language they are learning. They are also the syllable type most widely found in human language in general.

Deletion is also very common when two or more consonants occur in a row within the same syllable. As the following examples indicate, regular rules determine which consonant goes and which one stays.

- When a consonant at the beginning of a word is followed by an "l" or "r," drop the "l" or "r."

blanket → "banket" or "bankie"
 try → "tie"
 crumb → "kum" or "gum"
 bring → "bing"
 from → "fum"
 sleep → "seep"

- When a nasal consonant ("m," "n," or "ng") is followed by a "p," "t," or "k" at the end of a word, delete the nasal.

bump → "bup"
 tent → "tet" or "det"

- When an "s" is followed by another consonant, drop the "s."

stop → "top"
 small → "mah"
 desk → "dek"

You may notice another strategy for some words in which an "s" precedes another consonant – their order is changed.

ask → "aks"
 spaghetti → "pas-ghetti"

This is a less drastic solution to the phonetic hardship created by "sk" and "sp," since it keeps both consonants. But it still makes things better for the child, since an "s" is easier to pronounce at the end of a syllable than at the beginning if it's next to another consonant.

Substitution

Consonants that survive the deletion process aren't necessarily given an adult-like pronunciation. If they are among the sounds that children have difficulty making, there's a good chance that they'll be replaced by an easier sound. Once again, their fate is determined by fairly regular processes.

- *The stopping process:* Replace a consonant that is produced with a continuous flow of air (e.g., "s," "z," "sh," or "th") by a consonant that is produced by completely cutting off the flow of air (e.g., "t" or "d").

| Word | Child's pronunciation | Substitution |
|-------|-----------------------|---------------|
| sing | "ting" | s → t |
| see | "tee" | s → t |
| zebra | "debra" | z → d |
| thing | "ting" | th → t |
| this | "dit" | th → d, s → t |
| shoes | "tood" | sh → t, z → d |

(You can verify for yourself whether a particular consonant is produced with a continuous flow of air by attempting to prolong its pronunciation. You'll notice that consonants such as "s," "z," "sh," and "th" can be prolonged indefinitely, but that consonants such as "t" and "d" cannot.)

- *The gliding process:* Replace "l" or "r" by "y" or "w."

| Word | Child's pronunciation | Substitution |
|----------|-----------------------|--------------|
| lion | "yine" | l → y |
| laughing | "yaffing" | l → y |
| look | "wook" | l → w |
| rock | "wock" | r → w |
| story | "stowy" | r → w |

- *The denasalization process:* Replace a nasal sound ("m" or "n") by a non-nasal sound ("b" or "d").

| Word | Child's pronunciation | Substitution |
|-------|-----------------------|--------------|
| jam | "dab" | m → b |
| room | "woob" | m → b |
| spoon | "bood" | n → d |

- *The fronting process:* Replace a consonant by a sound that is made more toward the front of the mouth.

| Word | Child's pronunciation | Substitution |
|-------|-----------------------|--------------|
| thumb | "fum" | th → f |
| ship | "sip" | sh → s |
| jump | "dzump" | j → dz |
| chalk | "tsalk" | ch → ts |
| go | "doc" | g → d |

The figure below summarizes where various consonant sounds are produced in the mouth, starting at the lips. (For further details and a diagram of the vocal tract, see Appendix 2.)

| Front | | Back | |
|---------|-------------|--|-------------------------|
| Lips | Front teeth | Alveolar ridge (behind the front teeth) | Hard palate Soft palate |
| p, b, m | th | t, d, n | sh, ch, j k, g, ng |
| f, v | | s, z | |

Assimilation

There's at least one more important type of sound change in children's speech. You can think of it as a type of substitution, since it involves one sound being replaced by another.

However, unlike the substitutions we've talked about so far, the outcome is determined by a neighboring sound. Put simply, a sound tries to become more like its neighbor in some respect. (Linguists refer to this as *assimilation*.)

One very common type of assimilation involves a sound being modified so that it is produced at the same place in the mouth as its neighbor. A good example of this occurs in words like *impatient*, where the "n" of the prefix *in-* (compare *inactive*, *indirect*, etc.) is changed to "m" because of the following "p." (Like "p," "m" is made with the lips; "n" is made with the tip of the tongue.)

$$\begin{array}{c} \text{in} + \text{possible} \\ \downarrow \nearrow \\ \text{"n" becomes "m" to make it more like "p"} \\ \text{m} \end{array}$$

Assimilation not only makes words easier to pronounce by reducing the number of differences among neighboring sounds, it is apparently attractive to the ear as well. Infants as young as four months of age prefer to listen to nonsense words such as *umber* compared to *unber*.⁴⁴ What's the difference? *Umbur* shows the effects of assimilation, since "m" and "b" are both pronounced with the lips.

Another common type of assimilation involves vocal-cord vibrations (or *voicing*, to use the technical term). The vocal cords vibrate during the pronunciation of all vowel sounds, as you can see for yourself if you place a finger on your neck as you say "ee," "ah," or "oh." Some consonants ("z" and "v," for instance) have accompanying vocal-cord vibrations, while others (like "s" and "f") do not.

When a consonant that shouldn't have vocal-cord vibrations occurs in front of a vowel in children's early speech, it often ends up "catching" the vocal-cord vibrations from the vowel. That is, it becomes "voiced," turning into an entirely different sound.

The table below contains some consonant contrasts that are based on vocal-cord vibrations (see Appendix 2 for additional information).

| No vocal-cord vibrations | Vocal-cord vibrations |
|--------------------------|-----------------------|
| p | b |
| t | d |
| k | g |
| f | v |
| s | z |

In the first two examples below, a "p" picks up the vocal-cord vibrations from the following vowel and turns into a "b." A similar sort of thing happens when "t" turns into "d" (the third example), and "s" turns into "z" (the final example).

| Word | Child's pronunciation | Change |
|------|-----------------------|--------|
| pig | "big" | p → b |
| push | "bush" | p → b |
| tell | "dell" | t → d |
| soup | "zoop" | s → z |

Sometimes, we even find total assimilation, which makes a sound identical to a nearby sound. The results of this type of change can be seen in the following words.

| Word | Pronunciation | Change |
|----------|---------------|--|
| doggy | "goggy" | d → g, because of the nearby "g" |
| self | "fel" | s → f, because of the nearby "f" |
| Kathleen | "Kakleen" | th → k, because of the nearby "k" |
| baby | "beebee" | a → ee, because of the nearby "ee" (written as <i>y</i>) |

6. Stress is good

One of the most noticeable features of children's early speech is that they often drop entire syllables, especially when they try to pronounce longer words.

| Adult word | Child's word ⁴⁵ |
|------------|----------------------------|
| giraffe | faff |
| mustache | tass |
| goodnight | na |
| away | way |

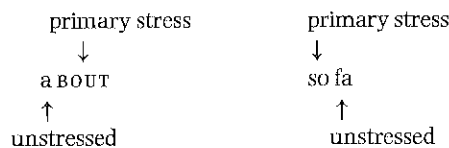
This creates a shorter word that is easier to pronounce, of course, but we need to know why children delete the first syllable in these examples rather than the second one. (Children don't pronounce *giraffe* as "gi" or *mustache* as "mus.") The explanation for this seems to lie in the way children perceive longer words.

Take the word *away*, for example. If you pronounce it to yourself, you'll notice that the second syllable (the "way" part) is pronounced more forcefully than the first. This is what linguists call "stress."

English distinguishes three levels of stress – primary stress, secondary stress, and unstressed. A syllable with primary stress is

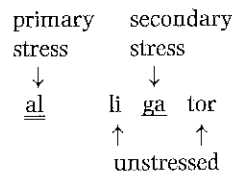
pronounced louder than any other syllable in the word, and its vowel is fully articulated.

In contrast, an unstressed syllable is far less audible, with a short and weak vowel that linguists call a “schwa.” The first syllable of a word like *about* and the last syllable of *sofa* contain a weak vowel of this type.



Intermediate between a syllable with primary stress and an unstressed syllable are syllables with secondary stress. They are not pronounced as strongly as syllables with primary stress, but they don't have a weak vowel either.

The second syllable in the words *slowly* and *veto* has secondary stress. In a word like *alligator*, the first syllable has primary stress, the third syllable has secondary stress, and the second and fourth syllables are unstressed. Let's use a double underline for primary stress and a single underline for secondary stress.



Under the spotlight

Now you can probably guess what's going on in our earlier examples. Because syllables bearing primary stress are more audible than their unstressed counterparts, children tend to zero in on them when they are first learning to speak (remember the “spotlights” discussed in chapter 2). For this reason, the stressed syllable is usually not dropped.⁴⁶

In extreme cases, the stressed syllable may be the only part of the word that is pronounced, even in words containing three or more syllables. (Remember that a double underline marks primary stress and a single underline indicates secondary stress.)

| Word | Child's pronunciation ⁴⁷ |
|--------------------------------|-------------------------------------|
| <u>hip</u> po <u>pot</u> a mus | pahs |
| <u>kan</u> ga <u>roo</u> | woo |
| spa <u>ghet</u> ti | ge |

Sometimes, though, children pronounce only the syllable with secondary stress, especially if it's closer to the end of the word than the syllable with primary stress.

| Word | Child's pronunciation ⁴⁸ |
|------------------------------|-------------------------------------|
| <u>al</u> li <u>ga</u> tor | gay |
| <u>ca</u> ter <u>pil</u> lar | pi |
| <u>te</u> le <u>phone</u> | fo |

And sometimes, syllables with either primary or secondary stress are spared, but unstressed syllables are dropped.⁴⁹

| Word | Child's pronunciation ⁵⁰ |
|-----------------------------|-------------------------------------|
| <u>al</u> li <u>ga</u> tor | agay |
| a <u>qua</u> ri <u>um</u> | quarium |
| <u>hel</u> i <u>cop</u> ter | alkat |

It's as if children adopted a “Hear no schwas” policy. Unstressed syllables with weak vowels are often just not audible enough to make it past the threshold of perceptibility when a child is getting started on English.

There is one exception to this though – children often keep the *final* syllable of a word, even when it's unstressed. This is probably because the ends of words are easier to notice and remember since they're the last thing a child hears.

| Word | Child's pronunciation ⁵¹ |
|---------------------|-------------------------------------|
| ba <u>na</u> na | ana |
| com <u>pu</u> ter | puter |
| <u>el</u> e phant | effun |
| <u>a</u> ni mal | amul |
| <u>al</u> li ga tor | gayda |

However, even when an unstressed syllable is pronounced, it's often missing one or more sounds. You can see that in the pronunciation of the last syllable of *elephant*, which is missing the "t."⁵²

Some children use a completely different strategy for dealing with long words. They produce the same number of syllables that are found in the adult word, but usually only one of the syllables (often the one with primary stress) sounds anything like a part of the adult word.

Twenty-month-old Joshua was like this. In the examples that follow, I've used boldface to mark the syllables in Joshua's pronunciation that seem to be based on syllables in the corresponding adult word.

| Word | Joshua's pronunciation ⁵³ |
|------------------------------|--------------------------------------|
| <u>bun</u> ny | ba bi |
| <u>clo</u> ver | do do |
| <u>ti</u> ger | ta da |
| <u>bull</u> do zer | boo duh duh |
| <u>kan</u> ga <u>roo</u> | da da wu |
| <u>mi</u> cro <u>phone</u> | ma wuh wuh |
| <u>vi</u> o <u>lin</u> | wa wa wi |
| <u>straw</u> ber <u>ries</u> | dah bee buh |

Notice that Joshua's words all have the same "profile" or "silhouette" as the adult words, since the number of syllables is the same. But generally only the stressed syllable resembles the corresponding part of the adult word.

Summing up

Children come into the world already able both to recognize the language of their parents and to make distinctions among the sounds of any language. By age two they have figured out which sounds their own language uses, and they are well on their way to being able to pronounce those sounds themselves. Pronunciation problems – and there are a few, as we have seen – are dealt with in systematic and predictable ways by judicious deletions and substitutions that allow the child to get by until full fluency arrives.

The study of how children come to perceive and pronounce speech sounds, like the study of every other aspect of language acquisition, raises the question that has puzzled researchers for decades – how do they do it? We'll take a closer look at this question in the next and final chapter of this book.