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HOW SHALL A THING BE CALLED?

ROGER BROWN

Massachusetts Institute of Technology

The most deliberate part of first-language teaching is the business of telling a child what each thing is called. We ordinarily speak of *the* name of a thing as if there were just one, but in fact, of course, every referent has many names. The dime in my pocket is not only a *dime*. It is also *money*, a *metal object*, a *thing*, and, moving to subordinates, it is a *1952 dime*, in fact a *particular 1952 dime* with a unique pattern of scratches, discolorations, and smooth places. When such an object is named for a very young child how is it called? It may be named *money* or *dime* but probably not *metal object*, *thing*, *1952 dime*, or *particular 1952 dime*. The dog out on the lawn is not only a *dog* but is also a *boxer*, a *quadruped*, an *animate being;* it is the *landlord's dog*, named *Prince*. How will it be identified for a child? Sometimes it will be called a *dog*, sometimes *Prince*, less often a *boxer*, and almost never a *quadruped*, or *animate being*. Listening to many adults name things for many children, I find that their choices are quite uniform and that I can anticipate them from my own inclinations. How are these choices determined and what are their consequences for the cognitive development of the child?

Adults have notions about the kind of language appropriate for use with children. Especially strong and universal is the belief that children have trouble pronouncing long names and so should always be given the shortest possible names. A word is preferable to a phrase and, among words, a monosyllable is better than a polysyllable. This predicts the preference for *dog* and *Prince* over *boxer*, *quadruped*, and *animate being*. It predicts the choice of *dime* over *metal object* and *particular 1952 dime*.

Zipf (10) has shown that the length of a word (in phonemes or syllables) is inversely related to its frequency in the printed language. Consequently the shorter names for any thing will usually also be the most frequently used names for that thing, and so it would seem that the choice of a name is usually predictable from either frequency or brevity. The monosyllables *dog* and *Prince* have much higher frequencies according to the Thorndike-Lorge list (8) than do the polysyllables *boxer*, *quadruped*, and *animate being*.

It sometimes happens, however, that the frequency-brevity principle makes the wrong prediction. The thing called a *pineapple* is also *fruit*. *Fruit* is the shorter and more frequent term, but adults will name the thing *pineapple*. Similarly they will say *apple*, *banana*, *orange*, and even *pomegranate;* all of them longer and less frequent words than the perfectly appropriate *fruit*. Brevity seems not to be the powerful determinant we had imagined. The frequency principle can survive this kind of example, but only if it is separated from counts like the Thorndike-Lorge of over-all frequency in the printed language. On the whole the word *fruit* appears more often than the word *pineapple* (and also is shorter), but we may confidently assume that, when pineapples are being named, the word *pineapple* is more frequent than the word *fruit*. This, of course, is a kind of frequency more directly relevant to our problem. Word counts of general usage are only very roughly applicable to the prediction of what will be said when

something is named. What we need is referent-name counts. We don't have them, of course, but if we had them it is easy to see that they would improve our predictions. Bananas are called *banana,* apples *apple,* and oranges *orange* more often than any of them is called *fruit.* The broad frequency-brevity principle predicts that *money* and *dime* will be preferred to *metal object, 1952 dime,* and *particular 1952 dime,* but it does not predict the neglect of the common monosyllable *thing.* For this purpose we must again appeal to imagined referent-name counts, according to which dimes would surely be called *dime* or *money* more often than *thing.*

While the conscious preference for a short name can be overcome by frequency, the preference nevertheless affects the naming act. I have heard parents designate the appropriate objects *pineapple, televsion, vinegar,* and *policeman;* all these to children who cannot reproduce polysyllabic words. Presumably they use these names because that is what the referents are usually called, but the adult's sense of the absurdity of giving such words to a child is often evident. He may smile as he says it or remark, "That's too hard for you to say, isn't it?"

Some things are named in the same way by all adults for all children. This is true of the apple and the orange. Other things have several common names, each of them used by a specifiable group of adults to specifiable children. The same dog is *dog* to most of the world and *Prince* in his own home and perhaps on his own block. The same man is a *man* to most children, *policeman* to some at some times, *Mr. Jones* to the neighborhood kids, and *papa* to his own. Referent-name counts from people in general will not predict these several usages. A still more particular name count must be imagined. The name given a thing by an adult for a child is determined by the frequency with which various names have been applied to such things in the experience of the particular adult. General referent-name counts taken from many people will predict much that the individual does, but, for a close prediction, counts specific to the individual would be needed.

The frequencies to which we are now appealing have not, of course, been recorded. We are explaining imagined preferences in names by imagined frequencies of names. It is conceivable, certainly, that some of these specific word counts might be made and a future naming performance independently predicted from a past frequency. Probably, however, such frequencies will never be known, and if we choose to explain particular naming performances by past frequencies we shall usually have to infer the frequency from the performance.

Beyond the Frequency Principle

A frequency explanation is not very satisfying even when the appeal is to known frequencies. The question will come to mind: "Why is one name more common than another?" Why is a dog called *dog* more often than *quadruped* and, by some people, called *Prince* more often than *dog?* Perhaps it just happened that way, like driving on the right side of the road in America and on the left in England. The convention is preserved but has no justification outside itself. As things have worked out, coins are usually named by species as *dime, nickel,* or *penny* while the people we know have individual names like *John, Mary,* and *Jim.* Could it just as easily be the other way around? Might we equally well give coins proper names and introduce people as types?

The referent for the word *dime* is a large class of coins. The name is equally appropriate to all members of this class.

To name a coin *dime* is to establish its equivalence, for naming purposes, with all other coins of the same denomination. This equivalence for naming purposes corresponds to a more general equivalence for all purposes of economic exchange. In the grocery one dime is as good as another but quite different from any nickel or penny. For a child the name given an object anticipates the equivalences and differences that will need to be observed in most of his dealings with such an object. To make proper denotative use of the word *dime* he must be able to distinguish members of the referent category from everything else. When he learns that, he has solved more than a language problem. He has an essential bit of equipment for doing business. The most common names for coins could not move from the species level to the level of proper names without great alteration in our nonlinguistic culture. We should all be numismatists preparing our children to recognize a particular priceless 1910 dime.

Many things are reliably given the same name by the whole community. The spoon is seldom called anything but *spoon,* although it is also a piece of *silverware,* an *artifact,* and a *particular ill-washed restaurant spoon.* The community-wide preference for the word *spoon* corresponds to the community-wide practice of treating spoons as equivalent but different from knives and forks. There are no proper names for individual spoons because their individuality seldom signifies. It is the same way with pineapples, dimes, doors, and taxicabs. The most common name for each of these categorizes them as they need to be categorized for the community's nonlinguistic purposes. The most common name is at the level of usual utility.

People and pets have individual names as well as several kinds of generic name. The individual name is routinely coined by those who are disposed to treat the referent as unique, and is available afterwards to any others who will see the uniqueness. A man at home has his own name to go with the peculiar privileges and responsibilities binding him to wife and child. But the same man who is a one-of-a-kind *papa* to his own children is simply a *man* to children at large. He is, like the other members of this large category, someone with no time to play and little tolerance for noise. In some circumstances, this same man will be given the name of his occupation. He is a *policeman* equivalent to other policemen but different from *bus drivers* and *Good Humor men.* A policeman is someone to "behave in front of" and to go to when lost. To the kids in the neighborhood the man is *Mr. Jones,* unique in his way—a crank, bad tempered, likely to shout at you if you play out in front of his house. It is the same way with dogs as with people. He may be a unique *Prince* to his owners, who feed and house him, but he is just a *dog* to the rest of the world. A homeless dog reverts to namelessness, since there is none to single him out from his species. Dimes and nickels have much the same significance for an entire society, and their usual names are fixed at this level of significance. People and pets function uniquely for some and in various generic ways for others. They have a corresponding variety of designations, but each name is at the utility level for the group that uses it. Our naming practices for coins and people correspond to our nonlinguistic practices, and it is difficult to imagine changing the one without changing the other.

The names provided by parents for children anticipate the functional structure of the child's world.[1] This is not,

[1] The equivalence of dimes and their distinctiveness as a class from nickels and pennies

of course, something parents are aware of doing. When we name a thing there does not seem to be any process of choice. Each thing has its name, just one, and that is what we give to a child. The one name is, of course, simply the usual name for us. Naming each thing in accordance with local frequencies, parents unwittingly transmit their own cognitive structures. It is a world in which *Prince* is unique among dogs and *papa* among men, *spoons* are all alike but different from *forks*. It may be a world of *bugs* (to be stepped on), of *flowers* (not to be picked), and *birds* (not to be stoned). It may be a world in which *Niggers,* like *spoons,* are all of a kind. A division of caste creates a vast categorical equivalence and a correspondingly generic name. *Mr. Jones* and *Mr. Smith* do not come out of racial anonymity until their uniqueness is appreciated.

Adults do not invariably provide a child with the name that is at the level of usual utility in the adult world. An effort is sometimes made to imagine the utilities of a child's life. Some parents will, at first, call every sort of coin *money*. This does not prepare a child to buy and sell, but then he may be too young for that. All coins are equivalent for the very young child in that they are objects not to be put into the mouth and not to be dropped down the register, and *money* anticipates that equivalence. A more differentiated terminology can wait upon the age of storegoing. Sometimes an adult is aware of a child's need for a distinction that is not coded in the English lexicon. A new chair comes into the house and is not going to be equivalent to the shabby chairs already there. A child is permitted to sit on the old chairs but will not be permitted on the new one. A distinctive name is created from the combinational resources of the language. *The new chair* or *the good chair* is not to be assimilated to *chairs* in general.

Eventually, of course, children learn many more names for each thing than the one that is most frequent and useful. Sometimes a name is supplied in order to bring forward an immediately important property of the referent. A child who starts bouncing the coffee pot needs to be told that it is *glass*. Sometimes a name is supplied to satisfy the child's curiosity as to the place of a referent in a hierarchy of categories. Chairs are *furniture* and so are tables; carrots are a *vegetable* but apples are not. Probably, however, both children and adults make some distinction among these various names. *The* name of a thing, the one that tells what it "really" is, is the name that constitutes the referent as it needs to be constituted for most purposes. The other names represent possible recategorizations useful for one or another purpose. We are even likely to feel that these recategorizations are acts of imagination, whereas the major categorization is a kind of passive recognition of the true character of the referent.

The Child's Concrete Vocabulary

It is a commonplace saying that the mind of a child is relatively "concrete"

is strongly suggested by the appearance of individual coins as well as by their names. Variations in size, weight, and hue are far greater between classes than within a class. This, of course, is because coins are manufactured in accordance with a categorical scheme which is also represented in our names for coins. It is possible, then, that a child might structure coins in the culturally approved manner if he never heard them named at all. However, we cannot be sure that an untutored child would not put all shiny new coins into one class and all the dingy specimens into another. When the referents are not manufactured articles but are such things as dogs, people, flowers, and insects, it is clear that autochthonous factors in perception do not force any single scheme of categorization. The names applied must be the child's principal clue to the locally functioning scheme.

and the mind of an adult "abstract." The words "concrete" and "abstract" are sometimes used in the sense of subordinate and superordinate. In this sense a relatively concrete mind would operate with subordinate categories and an abstract mind with superordinate categories. It is recorded in many studies of vocabulary acquisition (e.g., 2, 6) that children ordinarily use the words *milk* and *water* before the word *liquid;* the words *apple* and *orange* before *fruit; table* and *chair* before *furniture; mamma* and *daddy* before *parent* or *person;* etc. Very high-level superordinate terms like *article, action, quality,* and *relation,* though they are common in adult speech (8), are very seldom heard from preschool children (2). Presumably this kind of vocabulary comparison is one of the sources of the notion that the child's mind is more concrete than the mind of the adult.[2]

However, the vocabulary of a child is not a very direct index of his cognitive preferences. The child's vocabulary is more immediately determined by the naming practices of adults.

The occasion for a name is ordinarily some particular thing. In the naming it is categorized. The preference among possible names seems to go to the one that is most commonly applied to the referent in question. That name will ordinarily categorize the referent so as to observe the equivalences and differences that figure in its usual utilization. There are not many purposes for which all liquids are equivalent or all fruits, furniture, or parents; and so the names of these categories are less commonly used for denotation than are the names of categories subordinate to them. It is true that words like *article, action, quality* and *relation* are rather common in adult written English, but we can be sure that these frequencies in running discourse are not equaled in naming situations. Whatever the purposes for which all articles are equivalent, or all actions or qualities, they are not among the pressing needs of children.

It is not invariably true that vocabulary builds from concrete to abstract. *Fish* is likely to be learned before *perch* and *bass; house* before *bungalow* and *mansion; car* before *Chevrolet* and *Plymouth* (6). The more concrete vocabulary waits for the child to reach an age where his purposes differentiate kinds of fish and makes of cars. There is much elaborately concrete vocabulary that is not introduced until one takes courses in biology, chemistry, and botany. No one has ever proved that vocabulary builds from the concrete to the abstract

[2] From the facts of vocabulary acquisition alone it is not possible to draw safe conclusions about cognitive development. Such conclusions rely on something like the following set of assumptions. A subject, whether animal or human, is ordinarily credited with a cognitive category when he extends some distinctive response to new instances of the category and withholds it from noninstances. Words, when used to denote new referents, are such a distinctive response. If children speak words they probably can make correct denotative use of them, and so the presence of the word in a child's vocabulary may be taken as evidence that he possesses the category to which the word makes reference. The instances of the category are presumed not to be differentiated by the child unless he uses words for such differentiations. If all of these assumptions are made it would seem to follow that the direction of vocabulary growth (from subordinate to superordinate or vice versa) reveals the direction of cognitive development. When the assumptions of such an argument are explicitly stated, it is clear that they are too many and too doubtful. Obviously words may be spoken but not understood; objects may be differentiated by nonlinguistic response even though they are not differentiated linguistically. However, it is not my purpose here to quarrel with these assumptions but rather to show that, even when they are accepted, the facts of vocabulary growth do not compel the conclusion that cognitive development is from the concrete to the abstract.

more often than it builds from the abstract to the concrete. The best generalization seems to be that each thing is first given its most common name. This name seems to categorize on the level of usual utility. That level sometimes falls on the most concrete categories in a hierarchy (proper names for significant people), and vocabulary then builds toward the more abstract categories (names for ethnic groups, personality types, social classes). Utility sometimes centers on a relatively abstract level of categorization (fish) and vocabulary then builds in both directions (perch and vertebrate). Probably utility never centers on the most abstract levels (thing, substance, etc.), and so probably there is no hierarchy within which vocabulary builds in an exclusively concrete direction.

In the literature describing first-language acquisition (5) there is much to indicate that children easily form large abstract categories. There are, to begin with, the numerous cases in which the child overgeneralizes the use of a conventional word. The word *dog* may, at first, be applied to every kind of four-legged animal. It sometimes happens that every man who comes into the house is called *daddy*. When children invent their own words, these often have an enormous semantic range. Wilhelm Stern's (7) son Günther used *psee* for leaves, trees, and flowers. He used *bebau* for all animals. Lombroso (9) tells of a child who used *qua qua* for both duck and water and *afta* for drinking glass, the contents of a glass, and a pane of glass. Reports of this kind do not suggest that children are deficient in abstracting ability. It even looks as if they may favor large categories.

There are two extreme opinions about the direction of cognitive development. There are those who suppose that we begin by discriminating to the limits of our sensory acuity, seizing each thing in its uniqueness, noting every hair and flea of the particular dog. Cognitive development involves neglect of detail, abstracting from particulars so as to group similars into categories. By this view abstraction is a mature rather than a primitive process. The contrary opinion is that the primitive stage in cognition is one of a comparative lack of differentiation. Probably certain distinctions are inescapable; the difference between a loud noise and near silence, between a bright contour and a dark ground, etc. These inevitable discriminations divide the perceived world into a small number of very large (abstract) categories. Cognitive development is increasing differentiation. The more distinctions we make, the more categories we have and the smaller (more concrete) these are. I think the latter view is favored in psychology today. While there is good empirical and theoretical support (1, 3, 4) for the view that development is differentiation, there is embarrassment for it in the fact that much vocabulary growth is from the concrete to the abstract. This embarrassment can be eliminated.

Suppose a very young child applies the word *dog* to every four-legged creature he sees. He may have abstracted a limited set of attributes and created a large category, but his abstraction will not show up in his vocabulary. Parents will not provide him with a conventional name for his category, e.g., *quadruped,* but instead will require him to narrow his use of *dog* to its proper range. Suppose a child calls all elderly ladies *aunt*. He will not be told that the usual name for his category is *elderly ladies* but, instead, will be taught to cut back *aunt* to accord with standard usage. In short, the sequence in which words are acquired is set by adults rather than

children, and may ultimately be determined by the utility of the various categorizations. This will sometimes result in a movement of vocabulary toward higher abstraction and sometimes a movement toward greater concreteness. The cognitive development of the child may nevertheless always take the direction of increasing differentiation or concreteness.

The child who spontaneously hits on the category four-legged animals will be required to give it up in favor of dogs, cats, horses, cows, and the like. When the names of numerous subordinates have been mastered, he may be given the name *quadruped* for the superordinate. This abstraction is not the same as its primitive forerunner. The schoolboy who learns the word *quadruped* has abstracted from differentiated and named subordinates. The child he was abstracted through a failure to differentiate. Abstraction after differentiation may be the mature process, and abstraction from a failure to differentiate the primitive. Needless to say, the abstractions occurring on the two levels need not be coincident, as they are in our quadruped example.

SUMMARY

Though we often think of each thing as having a name—a single name—in fact, each thing has many equally correct names. When some thing is named for a child, adults show considerable regularity in their preference for one of the many possible names. This paper is addressed to the question: "What determines the name given to a child for a thing?" The first answer is that adults prefer the shorter to the longer expression. This gives way to the frequency principle. Adults give a thing the name it is most commonly given. We have now come full circle and are left with the question, "Why is one name for a thing more common than another?"

It seems likely that things are first named so as to categorize them in a maximally useful way. For most purposes Referent A is a spoon rather than a piece of silverware, and Referent B a dime rather than a metal object. The same referent may have its most useful categorization on one level (*Prince*) for one group (the family) and on another level (*dog*) for another group (strangers). The categorization that is most useful for very young children (*money*) may change as they grow older (*dime* and *nickel*).

With some hierarchies of vocabulary the more concrete terms are learned before the abstract; probably the most abstract terms are never learned first, but it often happens that a hierarchy develops in both directions from a middle level of abstraction. Psychologists who believe that mental development is from the abstract to the concrete, from a lack of differentiation to increased differentiation, have been embarrassed by the fact that vocabulary often builds in the opposite direction. This fact need not trouble them, since the sequence in which words are acquired is not determined by the cognitive preferences of children so much as by the naming practices of adults.

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