

Teaching vocabulary: the case for a semantic curriculum

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Abstract

The paper addresses the question of how vocabulary can be systematically taught to language-handicapped children. Little statistical information about vocabulary development is available, though what there is suggests that traditional frequency norms are in need of revision. It is essential to replace the traditional emphasis on frequency by an approach which analyses the quality, range, and internal structure of vocabulary, using the notions of semantic fields, sense relations, and semantic features. The importance of dictionary-type definitions in the teaching process is emphasized. A procedure for working with vocabulary using these notions is outlined, and recommendations are made about the importance of developing a semantic curriculum.

There have been so many articles and books written on the grammar and phonology of language handicap in recent years that it seems almost unfashionable to raise the question of vocabulary. But it is essential that we begin to look at vocabulary with the same objective, systematic intent that we have paid to these other areas. Indeed, it is even more important that we do so, bearing in mind (a) that vocabulary carries most of the meaning of a sentence, and (b) that there is so much more of it. No one knows how much vocabulary there is in a language, but it is quite obvious that there are thousands more words than there are sounds and grammatical constructions. Sorting out the structural organization underlying 40-odd phonemes is likely to be a simple matter, compared

with the problem of finding order within the chaos of a child's word-hoard, which may number thousands of words.

The size of the problem

It is as well to appreciate that we are dealing in thousands, even in the field of language handicap. It is so easy to obtain the opposite impression, especially if our only exposure to a child is an occasional lesson or a half-hour clinic session. In the assessment sessions in language handicap I used to run at the University of Reading, mainly with language 'delayed' children of preschool or early school years, the number of different words produced in a half-hour period was often less than 100, but on the occasions when parents kept a vocabulary diary for me, it was clear that this was only a fraction of the child's real vocabulary size. (Parental vocabulary diaries, by the way, are invaluable supplements to professional observations. I find it is not possible to rely on such diaries for information about pronunciation or grammar, but most parents have little trouble learning how to keep a list of words used by the child during the day. The main thing they have to remember is to make a note about context, otherwise it is not clear whether *top*, for example, refers to the summit or the toy.)

The only way in which we can discover the real vocabulary size of a child (or, for that matter, of an adult) is to record it and count it – and the awesome size of the task involved is the main reason why this has not been done. But these days, we are beginning to accumulate some data on the point, using radio-microphone techniques. And the general impression from this early material is that traditional estimates of vocabulary size in children have been hopeless underestimates. Wagner's study, for example, reported in 1985 (and summarized in Crystal, 1986), set out to determine how many words children said in a day. He and his students used minimicrophone transmitters to capture everything which was said by a range of children of different ages and social backgrounds; when this was transcribed, the totals discovered were those displayed in Table 1. There are two columns in this table: the first gives the total number of words (word TOKENS – that is, every instance of the same word was counted separately); the second gives the number of different words (word TYPES). It seems that German children speak an average of between 20 000 and 30 000 words a day, from their third year, and have a daily active vocabulary of around 3 000 different words. I should be surprised if the

total for English children were very different, but I do not know whether this is so, for no one has yet carried out a corresponding project in English.

These figures do not tell us about the total vocabulary size of any of these children, in terms of word types, as they were based only on one day's recording. Doubtless, if another recording day were to be arranged near Christmas, on holiday, out shopping, on a birthday . . . the vocabulary collected would have continued to grow. One would soon reach 5 000 items for a preschool child. But even lacking this further perspective, it is quite evident that our estimates of vocabulary size for nonhandicapped children are in need of revision – upwards. For example, the average productive vocabulary size for an 18-month child is said to be 50 words, and to reach about 200 words by age two (see the review of the literature in Garman (1979) and Griffiths (1986)). (The estimates for comprehension are less certain, given the greater difficulty of ascertaining that a young child has really understood a word, but are generally said to be greater than production, at 18 months, by a factor of 4 or 5. This ratio, incidentally, of 1 word in production to 4–5 words in comprehension, is a useful one to bear in mind when establishing an early lexicon in a handicapped child.) But what do we then say about Katrin, in Table 1, who produced just over 800 word types in just under four hours (the total in Table 1 is an extrapolation to a standardized 12-hour sample)? She would not seem to be particularly exceptional, according to Wagner, but these figures bear no clear relationship to the previously cited acquisition norms.

All of this leads to two conclusions. First, it confirms the view that vocabulary is 'the big one', as far as language assessment and intervention is concerned. And second, it indicates that we are a long way from having

Table 1 Words used in one day's recording by 10 children.

	<i>Total number of words (i.e. tokens)</i>	<i>Number of different words (i.e. types)</i>
Katrin, 1 year 5 months	13 800	1 860
Nicole, 1 year 8 months	11 700	not available
Andreas, 2 years 1 month	20 200	2 210
Carsten, 3 years 6 months	37 700	4 790
Gabi, 5 years 4 months	30 600	2 490
Frederik, 8 years 7 months	24 700	3 960
Roman, 9 years 2 months	24 400	3 630
Markus, 11 years 4 months	37 200	5 020
Christiane, 12 years 2 months	22 600	3 580
Axel, 14 years 10 months	22 900	3 040

reliable frequency norms about vocabulary. So where do we go from here?

Frequency is never enough

The first thing is to drop the focus on frequency, and to replace it by a notion of the QUALITY of vocabulary. But dropping the frequency focus is not easy, as it has been around for a very long time. Most teachers and therapists, I think, have been brought up to believe that size of vocabulary is the critical factor, and that their job is to increase the number of words. Many tests and teaching procedures are restricted to this point, and judgements tend to be phrased in quantitative terms. 'He has a vocabulary of about 20 words . . . 100 words . . .' Such observations are commonplace, but their only value is in the context of screening. When it comes to the question of what words to teach next, numbers alone are not enough. To have established that a child has 50 words does not answer the question 'Which word will we teach as number 51?'. And to establish that two children both have vocabularies of 50 words does not mean that they are at the same level, in terms of semantic development. One child may be using the words in a simple labelling way, each word referring to one object; whereas the other may be using (the same) words in a creative way, each word referring to a RANGE of objects and ideas. For the first child, *cold* might mean only a certain kind of weather; for the second, it might be used to refer to weather, water, ice-cream, and even to a grim face. It is the SENSES which are important in vocabulary learning, not the words alone.

The first step in determining the quality of a child's vocabulary is to see how far the words group themselves into sets, or FIELDS, and begin to define each other. The notion of a SEMANTIC FIELD is very important. The words *apple, banana, orange*, etc. belong to the semantic field of FRUIT. *Brother, uncle, father*, etc. belong to FAMILY. *Red, green, blue*, etc. belong to COLOUR. These are some of the clear-cut cases. Less obviously, *bag, basket, cup* belong to CONTAINERS. *Arrive, come, approach* belong to MOTION (IN A CERTAIN DIRECTION). It is not always easy to decide which field a word belongs to, and you have to look carefully at the context. A *hospital*, for example, is in one sense a building (and thus belongs to the field of BUILDINGS, along with *church, factory* and *house*); on the other hand, it is a place where you get treatment (and thus belongs to the field of HEALTH, along with *ward, consultant*, and *nurse*). The context is usually

clear enough, when a child uses the word; where it is not clear, of course, it may not be possible to reach a decision. (A fuller account of semantic fields is given in Crystal (1981), and a procedure which can plot children's developing use of fields is outlined in Crystal (1982).)

The important thing to appreciate about vocabulary learning, is that, after the very initial stages, words are not learned 'one at a time', as the frequency model suggests. A new word has to find its place in relation to the other words already acquired. As its meaning comes to be appreciated, so the meaning of the other words is made to alter. For example, an 18-month-old may have the word *dog* in his vocabulary, but he uses it to refer to all animals (the phenomenon of OVEREXTENSION). However, note that as soon as he picks up the word *cat*, the meaning of *dog* changes. *Dog* and *cat* now divide up the semantic field of animals. If *cow* comes along next, the field is divided yet again. A great deal of debate has taken place as to the way in which this is done – which features of meaning the child pays particular attention to, the order in which these features are acquired, and how long it takes to complete the process, so that words like *dog* and *cat* end up with their adult meaning (see Clark and Clark, 1977; Chapter 13). With some fields, the process of sorting out all the semantic features which distinguish words can take several years – even for a field such as FAMILY (where even at age seven or eight children may still be unclear about the reciprocal meaning of some words – if one HAS a brother, one is a brother – or not know the meaning of such words as *cousin*). In fact, FAMILY is a good example of a field which continues to cause problems even in adult life. Evidence? How many readers are totally clear about the difference between *second cousin* and *cousin once removed*?

What is going on, when a semantic field is being learned? All kinds of cognitive and social learning, of course, but for the present paper my focus is on the purely linguistic issue involved – which is that WORDS ARE BEING USED TO HELP LEARN OTHER WORDS. Very little vocabulary learning is carried out by having the word refer directly to the object in the real world. At the very beginning, this process (of OSTENSIVE NAMING) takes place, of course, as parents point to objects and label them. But this stage does not take very long. As interests widen, and mobility increases, it becomes increasingly impracticable to define by pointing. A child who hears the word *giraffe* and asks 'What's a 'raffe?' is told something like 'It's an animal with a very long neck'. It would be somewhat abnormal to reply, 'I'll show you when we next see one'! And of course for the vast majority of notions, there is nothing obvious to point at anyway. How

would you point at *think*, or *colour*, or *angry*? Or, for that matter, *red* (pointing to a red object does not necessarily help, as, from the child's point of view, you might be pointing at its shape, or its size, or even suggesting that the object itself is called a 'red').

Words define words. *Giraffe*, in the above example, is defined with reference to *animal* and *long neck* (one of its distinguishing semantic features). And so it is, with the whole vocabulary. A dictionary is a book in which all the words of the language are defined by using – the words in the language. Occasionally, it proves easier to see an object than to define it (as with the classic conundrum of how to describe the word *spiral* without using your hands), and dictionaries then rely on supplementary pictures. But in the vast majority of cases, the words are enough. And it is the same when we are asked to define words ourselves, in everyday life. We give a definition, as best we can, using the same procedures as are illustrated in dictionaries. We rely on the SENSE-RELATIONS which exist between words – the relationships of meaning which we sense intuitively to be present, so that we 'know' that two words 'have the same meaning' (are SYNONYMS), 'have opposite meanings' (are ANTONYMS), 'have one meaning included in the other' (are HYPONYMS), or 'can't be both things at once' (are INCOMPATIBLE). Here are examples of each category, illustrated from parent reactions to child questions:

synonymy: '*automobile* means *car*'

antonymy: '*ugly* means *not very pretty*'

hyponymy: '*nectarine* is a kind of *fruit*'

incompatibility: 'that's not *blue*, that's *purple*'.

These four kinds of relationship between words are the essential ones for developing a qualitative approach to vocabulary teaching and learning. (For other categories, and for further examples of the above, see Crystal (1981).) It is these relationships which help to define the structure of the semantic fields of the language, and they provide the main means whereby teachers and therapists can extend a child's vocabulary in a structured and systematic way.

Extending vocabulary

An important preliminary point to appreciate about vocabulary teaching is that there is a difference between this area and that of phonology and grammar, arising out of our lack of empirical information about acquisi-

tion: there is no obvious first place to start. At least with phonology, it is possible to identify certain basic sound contrasts which children seem to make use of at an initial developmental stage; and with grammar, there is a small range of basic sentence types which seem to be fundamental. But with vocabulary, there is as yet little sign of a universal pattern of acquisition, at least as regards the learning of individual words (and even the order of acquisition of semantic fields shows considerable variation across children). There is no such thing as a universal 'first word'. And even if we make a comparison of a large number of words used by several children in the early stages of development, it is remarkable how little overlap there is. Table 2 gives the first 50 words of three children: there are only eight in common (adapted from Stoel-Gammon and Cooper, 1984).

In a way, such differences are not surprising. If a child lives by the sea, one would expect sea-vocabulary to appear early on; if on a farm, farm-vocabulary; and so on. There are undoubtedly certain parallels in the kind of lexical learning that takes place, which research into semantic acquisition is beginning to uncover (see the relevant chapters of Fletcher and Garman (1986)), but we are a long way from here to identifying factors which underlie the selection of individual words. So how is a teacher or therapist to proceed when, faced with a child with little or no productive vocabulary, the question has to be addressed, 'What words to teach first?' – which (in the light of the above) means 'What semantic field to teach first?' Without normative data to rely upon, is the only alternative guesswork?

At the very outset, the answer must be yes – or, at least, INFORMED guesswork. Obviously, one wants to choose a field which is motivating to the child, and this means finding out about the child's interests, using whatever techniques one can. A parental account of the child's home situation and daily routine is essential. Are there animals at home? What are the favourite toys (toys are a representation of the real world, and can display, in microcosm, all semantic fields)? What members of the family exist? Much of this information is routinely available, as cognitive/social data, in case history reports, of course; but for linguistic purposes it may need to be interpreted anew. It is one thing knowing that there is a younger brother in the house; it is quite another knowing what he is called by the family. A semantic case history checks on the semantic fields and routine lexical items in use in the child's environment, and draws attention to any which seem to be attracting his interest (cf. the

Table 2 The first 50 words of three children.

<i>Daniel</i>	<i>Sarah</i>	<i>Will</i>
1 light	1 baby	1 uh-oh
2 uh-oh	2 mommy	2 alldone
3 what's that	3 doggie	3 light
4 wow	4 juice	4 down
5 banana	5 bye-bye	5 shoes
6 kitty	6 daddy	6 baby
7 baby	7 milk	7 don't throw
8 moo	8 cracker	8 moo
9 quack (quack)	9 done	9 bite
10 cookie	10 ball	10 three
11 nice	11 shoe	11 hi
12 rock (NOUN)	12 teddy	12 cheese
13 clock	13 book	13 up
14 sock	14 kitty	14 quack-quack
15 woof-woof	15 hi	15 oink-oink
16 daddy	16 Alex	16 coat
17 bubble	17 no (no)	17 beep-beep
18 hi	18 door	18 keys
19 shoe	19 dolly	19 cycle
20 up	20 what's that	20 mama
21 bye-bye	21 cheese	21 daddy
22 bottle	22 oh wow	22 <i>siren sound</i>
23 no	23 oh	23 grrr
24 rocky (VERB)	24 button	24 more
25 eye	25 eye	25 off
26 nose	26 apple	26 tick tock
27 fire	27 nose	27 ball
28 hot	28 bird	28 go
29 yogurt	29 alldone	29 bump
30 pee-pee	30 orange	30 pop-pop (<i>fire</i>)
31 juice	31 bottle	31 out
32 ball	32 coat	32 heehaw
33 whack (whack)	33 hot	33 eat
34 frog	34 bib	34 neigh-neigh
35 hello	35 hat	35 meow
36 yuk	36 more	36 sit
37 apple	37 ear	37 woof-woof
38 Big Bird	38 night-night	38 bah-bah
39 walk	39 paper	39 hoo-hoo (<i>owl</i>)
40 Ernie	40 toast	40 bee
41 horse	41 O'Toole	41 tree
42 more	42 bath	42 mimi (<i>ferry</i>)
43 mommy	43 down	43 s: (<i>snake</i>)
44 bunny	44 duck	44 ooh-ooh (<i>monkey</i>)
45 my	45 leaf	45 yack-yack (<i>people talking</i>)
46 nut	46 cookie	46 hohoho (<i>Santa</i>)
47 orange	47 lake	47 bye-bye
48 block	48 car	48 doll
49 night-night	49 rock	49 kite
50 milk	50 box	50 Muriel

'communicative history form' in the appendix to Crystal, Fletcher and Garman, 1976).

Sometimes it makes more sense to select a semantic field for teaching on the basis of what demands are being made of the child in school or clinic – especially important when the child stays in a single place for long periods, such as at a residential school. The routine of the child's day, or the interaction with the peer-group, will readily indicate the relevance of certain fields – food, games, clothing, furniture, and so on. But there is one important difference between the professional and the home environment, as far as vocabulary is concerned: there is usually a much greater gap between the vocabulary of comprehension and that of production – that is, between the words the child uses and those used by the adults in the environment. Teachers routinely use many words, as part of the organizing 'language' of intervention, which the children themselves would not be expected to say – *point, show, tell, ask, happen, find*, and many more. These are among the most frequent words used in the language-teaching environment, but they would not normally be considered a priority in vocabulary teaching (indeed, it is usually assumed that these words are 'caught', not 'taught' – though this is a problem in its own right).

Let us assume, then, on pragmatic grounds, that a semantic field has been identified as a focus for teaching. I will use BODY PARTS for illustration, though everything which follows applies equally to other fields. The assessment part of the task is to establish whether the child knows the words for the various parts of the body, and whether he knows how to use any of them. The teaching part of the task is to teach these words, in both comprehension and production. Let us assume that the assessment is clear-cut: the child in question has no knowledge of body parts at all, and has never been heard to name one. How, then, does the teaching begin?

What are the relevant words?

The first thing is to be clear in one's own mind what exactly the semantic field of BODY PARTS consists of. How many words does it contain, and how are these organized? This question is in fact more complex than it seems. For how does one draw up a complete list of relevant body parts? The question of relevance is critical. A really complete list of body parts would be the equivalent of *Gray's anatomy*. Obviously, some notion of 'basic' body parts is involved, 'appropriate to children of such-and-such an age'.

But that kind of information is not readily available. Who is to say whether *wrist*, for instance, should be considered appropriate for a 3-year-old, or 4-year-old, or 5-year-old . . . (or for language-handicapped children at equivalent language ages)? There is a lot of guesswork here, and a decision will often have to be made on pragmatic grounds – that is, you may not know whether it is normal for 5-year-olds to have the word *wrist*, but you decide nonetheless that it is going to be very useful for your particular child to know this word (perhaps because he owns a watch).

It makes a very interesting exercise for the members of a team to write down, without consulting each other, which body-part words they think (say) a 5-year-old should know. They then compare notes afterwards, and see how far they agree. One day, there will be vast statistical surveys of child vocabulary to provide some answers. For the moment, there are only our intuitions – and, as you will discover, if you try this exercise, these often differ.

A convenient way of getting a basic list of potentially relevant words together is to use a thesaurus or a dictionary, or one of the new kinds of reference book which brings these two notions together. If you look up various body parts in *Roget's thesaurus*, for example, you will quickly accumulate a wide range of relevant vocabulary; but there is a problem here, for the words are given no definitions. Conversely, if you look up a body part in a dictionary, you will be given a definition, but no sets of words. However, in the Longman *Lexicon* – a new venture in lexicography (McArthur, 1981) – you are given both, and this makes the book very helpful for people engaged in teaching vocabulary. You look up a word in the index at the back, and this refers you to a semantic field, in which all the main words belonging to that field are listed in alphabetical order, with definitions and examples given. An example from the body-parts field is given in Figure 1. (Note that the field includes some verbs as well as nouns.)

I find the *Lexicon* an essential pedagogical tool, when it comes to selecting and presenting vocabulary. But any good dictionary will do. The point is that the dictionary should be seen as an essential piece of 'clinical' or 'remedial' equipment, for people dealing with language handicap – as essential as a stethoscope to a doctor. And to be 'good', I mean it needs to be up-to-date (i.e. published in the 1980s), to ensure that new words and phrases are included and new developments in dictionary methods incorporated. It needs to contain at least 15 000 entries, to ensure that it gives a basic coverage (but for more advanced work it should approach 50 000). And a bonus for working with language handicap (available with

spine [C] the set of bones down the centre of the back, through the middle of which runs a large nerve: *He injured his spine in a car crash.*

backbone 1 [C] *not fml* the spine 2 [the R (of)] (fig) the main support of a group, plan, etc: *I tell you, the small farmer is the backbone of this country!* 3 [U] (fig) firmness of mind; strength of character: *No backbone – that's the trouble with young people today!*

vertebra [C] any one of the parts into which the spine is divided **vertebrate** [C] a creature with a spine **in-** [neg]: *Frogs are vertebrates; worms are invertebrates.*

spinal column *also vertebral column* [C] *tech* the spine

rib [C] one of the twelve pairs of bones running round the chest of a human being or animal from the backbone to where they join at the front **rib cage** [C] the framework of the ribs

joint [C] a place where bones join, usu capable of movement: *His joints are stiff; he's getting old.*

The head and the face

B20 nouns : the head [C]

[⇒ PICTURE AT B10]

head 1 the part of the body which contains the eyes, ears, nose, mouth, and brain: *He was injured in the head, not the body/arm/leg, etc.*

2 the part of the head above and behind the eyes: *My head aches.* 3 *infml* the mind or brain: *Can't you get it into your head that we lost the game?* [⇒ G1 MIND]

crown the rounded top of the human head

scalp the skin (and hair) of the top of the head, excluding the face: *Rub your scalp hard when you are washing your hair.*

brain the organ of the body in the upper part of the head which controls thought and feeling: *The brain is the centre of higher nervous activity.*

B21 nouns : the face generally [C]

[⇒ PICTURE AT B10]

face the front part of the head, with the eyes, nose, and mouth: *He had a surprised expression on his face.*

expression the way a person's face looks, esp at a particular time: *There was an expression of anger on his face. I knew by their expressions that they didn't believe his story.*

look 1 *infml* expression: *There was a look of anger on her face.* 2 a way of looking: *She gave him an angry look.*

jaw 1 one of the two bony parts of the face (upper and lower jaws) in which the teeth are set: *The boxer's jaw was hurt in the fight.* 2 the appearance of the lower jaw: *He said that a strong square jaw was a sign of firm character.*

chin the front part of the face below the mouth
cheek the fleshy part on each side of the face below the eye, esp in human beings: *He kissed her on the cheek. Her cheeks went red with embarrassment.*

cheekbone 1 the bone which lies under the cheek. 2 the line of this bone as seen shaping the cheek: *That girl has a lovely face with very high cheekbones.*

forehead the part of the face above the eyes and below the hair

brow 1 the forehead 2 [usu pl] an eyebrow [⇒ B24]: *His brows went up in surprise.* 3 [usu sing] (fig) the upper part of a slope on a hill; the edge of a steep place: *He went over the brow of the hill.*

temple [usu pl] one of the two rather flat places on each side of the forehead: *He is going grey at the temples.*

throat the front of the neck: *A beautiful necklace hung round her throat.*

Adam's apple the part that sticks forward in the throat, esp in men, which moves up and down when a person speaks

nape the back of the neck near the head

scruff [the S of the neck] *infml* the nape: *He took the boy by the scruff of the neck and dragged him out of the room.*

B22 nouns : the face from the side

profile 1 [C; U] a side view of someone's head or face: *She prefers to have her left profile photographed; she says that's her better side.* 2 a drawing of a profile: *He does profiles better than full face.*

side view [C] *infml* a profile

B23 nouns : the organs of the face [C]

[⇒ PICTURE AT B10]

eye the organ of sight, of which there are two at the front of the human head: *He hurt one of his eyes in a car crash.*

ear 1 the organ of hearing, of which there are two, one on each side of the human head: *The ear has two parts, the inner and outer ear. You needn't shout into my ear like that; I can hear you perfectly well.* 2 the outer part of that organ 3 [S9] (fig) sympathetic attention or notice: *John will arrange everything; he has the ear of the President.*

nose that part of the face above the mouth, which in human beings stands out from the face, through which air is drawn in to be breathed, and which is the organ of smell

nostril either of the two openings at the end of the nose, through which air is drawn

bridge the upper bony part of the nose

mouth the opening on the face through which a human being may take food into the body, and by which he or she makes sounds and may breathe

some of the Longman series) is that there should be a restricted defining vocabulary – that is, the words used in the definitions should all be taken from a basic set (of 2000 words, in the *Longman Dictionary of Contemporary English*). There is little point in referring to a dictionary for a word meaning, if the definition is so complex you need a dictionary to understand it (as in old definitions of *dog* which began ‘carnivorous quadruped . . .’).

One thing you quickly discover, when you start putting together a semantic field, is that the words begin to group themselves together, into SUBFIELDS. This can be seen from Figure 1, where we see such headings as ‘the head’, ‘the face’. Indeed, the field of BODY PARTS can be analysed into a dozen or more subfields – including such less-obvious fields as OUTSIDE FEATURES (*hair, beard, skin, nails*, etc.) and INSIDE FEATURES (*blood, bones, brain*, etc.). And there are the problem words too, as one soon discovers when working with children – such as the scrap who pointed out that *tongue* could be both! It quickly becomes apparent that, far from being a very narrow area, the notion of BODY PARTS is in fact quite large, and needs to be broken down into subfields before one can answer the question, ‘Which words should I teach first?’.

But even within a subfield, there is a considerable lexical choice – 14 words in the Lexicon’s listing for FACE, for instance. One cannot teach all 14 words at once. How is a selection to be made? Here, certain guidelines can be suggested. First of all, it is important to choose words which have some motivation for the child – where there is some reasonable chance that the word will relate to aspects of the child’s life. The risk is to teach BODY-PART words in an arbitrary way – to assume, for example, that because *eyes, nose, and mouth* are the ‘obvious’ features, they must be the ones to start with. The question, however, should always be: ‘Why should a child WANT to talk about . . . eyes?’ (for example). And indeed, it is not easy to see why one should find it interesting to go through the parts of a face, labelling them. If one could ask these children which parts of the face are the most interesting bits, what would they say, I wonder? Having done this once or twice, I can report that the answers are not always what one would expect – *beard, glasses, spots* . . .

The point to be appreciated is that the words for the different facial parts are not equivalent in their PRAGMATIC force. *Nose* becomes particularly important when the child has a cold, and has to keep wiping it. *Teeth* are important at certain times of the day, when they have to be brushed. *Eyes* are important when something gets into them, or when people point out the different colours. And so on. The value of imagi-

native story-telling, in this connection, should be obvious: this technique enables us to 'set up' a situation in which the focus is entirely on the vocabulary we wish to teach – a land where one-eyed and two-eyed people live, or a child who cannot open his mouth. Animals provide a useful real-life way of focusing on body parts, because of their anatomical differences – finding where the eyes are on a hamster, a chicken, or a whale. But here, too, the selection of features needs to be motivating. There would seem to be little point in comparing a hamster and a chicken, for instance, unless they can be shown to inhabit some real or imaginary world together. It is often easier to set up situations in which all the animals are pets, or farm animals.

Moving on to features

Once we have selected the semantic subfield, and the specific body part to focus on, and the motivating context to use, are we now ready to teach the word, in comprehension and production? Not yet. So far we are in the position of being able only to name an object, in an ostensive way – pointing to a person, a hamster, or whatever, and saying *eyes*, *That's an eye*, *What is it?* and the like. As already mentioned, this does not lead very far. To learn a word is to integrate it into a growing vocabulary, and the child needs to be taught how to do this – which means deciding on which other words to relate it to. Words should never be taught in isolation from each other. On the contrary, each word should be presented in a linguistic context which gives part of its definition.

This is often done, quite automatically, by the teacher or therapist, as the following therapist/child dialogue shows:

T: What are those, do you know? (*pointing to own eyes*)

P: —

T: We can see with them, can't we.

P: —

T: I've got two, and you've got two. (*pointing to child's eyes*) They're our – eyes.

P: eye.

T: That's right, we see with our eyes, don't we . . .

Some of the words needed for the definition of eyes are already being used in the interaction – *see* and *two*. (Also, it should be noted, some of the relevant grammar is coming in as well – such as *see with*.)

But how does one know to which other words the item should be related? If you were teaching *eye*, how would you decide how many relevant words there are, as part of the definition? Here again the dictionary is essential, as it provides most of the data one needs to answer these questions. The *Lexicon* definition of *eye*, for example, is given in Figure 1: 'the organ of sight, of which there are two at the front of the human head'. Not very elegantly phrased (that is often the way, when you are writing with a restricted defining vocabulary – the words are simpler, but the grammar is awkward), but it gives the essential information: *eye* is defined with reference to *organ*, *see*, *two*, *front*, and *head*. (If you looked the word up in a different dictionary, the definition would be different in certain respects, but that is not the point: you could still use that definition to pull out the essential defining features.) Now, armed with this information, it is possible to see the kind of teaching problem you face, if you decide to teach the linguistic meaning of *eye*. You will presumably dispense with *organ*, at this level, but what about the other words? What is the relevance of *two*, for instance? Very relevant indeed, it would seem, judging by the way some mothers 'count' their baby's eyes while washing them (*one eye, two eyes . . .*), or draw a contrast between the 'twoness' of the eyes and ears, and the 'oneness' of the nose and mouth. And so one might continue, evaluating the relevance of each of the other words, before deciding how much to 'tell' the child. After all, T in the above dialogue might have continued for a couple more turns, saying such things as 'They're at the front of our heads'. And, in a more explicitly structured teaching exercise, it would be possible to focus on these features in turn (looking at dolls to see whether they have eyes at the back or at the front, whether they have one or two, whether they are open or closed (aspects of seeing), and so on).

Analysing a word's definition, to extract its main semantic features, is a prerequisite for systematic, structured work on vocabulary. Without it, one simply does not know what problems lie ahead. It is very easy to choose a word to teach, and then get into difficulties as one realizes that the word is unexpectedly difficult to explain, as it uses words which are well beyond the level of the child. Here are some everyday words, with their *Lexicon* definitions, which illustrate this point:

soil: the material found generally on top of rock, in which plants can grow. (The first part of the definition is not so important, but the reliance on the notions of 'plant' and 'grow' is critical.)

factory: a building or group of buildings where goods are made, especially in great quantities, by machines.

Factory is a good example where an unthinking definition can cause trouble. In answer to the question 'What's a factory?' one teacher said 'A place where you make things', and this led the child to think that his classroom was a factory. The lack of reference to 'machines' was critical, in this case.

This example also illustrates the way in which it might take a while to lead up to the whole definition. It would be inappropriate to 'flood' the child with the entirety of this definition, at an early stage of learning. It might even be enough to gloss the word by 'It's a kind of building', at the outset – in other words, to teach an overextension. Then, as the child's abilities develop, one might add, by degrees, 'a building where you make things', 'a building where you make things with machines', and finally to something like 'a building where you make lots of things with machines'. The whole definition might take several years to learn – but recall that this is a perfectly normal process. (For developmental stages in the learning of definitions, see Litowitz (1977).)

A semantic curriculum

Because the learning of a word's meaning is not a once-and-for-all event, it seems essential to plan vocabulary teaching in an appropriately long-term manner. One needs more than a syllabus of words to be taught week by week. One needs a syllabus of senses, of definitions, of features. One needs to devise ways of keeping track of a word, as it is introduced into a child's vocabulary, so that one can look back and see whether there are features of the word's meaning that the child has never been taught. And one needs to grade the words within their semantic fields, to determine which are likely to be the easiest to teach (i.e. make the fewest assumptions about what other words have already been learned), and to anticipate the problems which will arise. Exceptional cases need to be taken into account (specifically, the problem of idioms, which cannot be analysed in a straightforward semantic way). And strategies need to be devised to ensure that an analysis, once taught, is reinforced by others involved with the child. It could be confusing for one adult to gloss the word *factory* as 'building', and another as 'shed', and another as 'place', during the period when the child is first being introduced to the word; but it is likely that, in the absence of any standardizing guidelines, a great deal of this variation takes place.

Can all this be done? It never has, as far as I know. Most vocabulary

teaching proceeds on a serendipity principle, in which children are assumed to be able to pick up most of a word's meaning from their informal contacts. This assumption works well enough with normal children (where, I suspect, the roles of television and reading are critical in providing an increased range of contexts within which to develop their sense of word meaning), but I do not think it is at all satisfactory as a way of proceeding with language-handicapped children. All too often, one encounters these children, especially from around age six or seven, whose vocabulary is superficially large but (on investigation) inadequate, because words are only partially understood, relationships between words are vague, and there is no ability to define (a skill which comes to be increasingly relied upon as a child moves up through junior school) – in short, their vocabulary has no structured foundation. The aim of a semantic curriculum would be to make good this kind of deficiency.

Can it be done? Already I hear the old argument in the wings: but won't it be very time-consuming? The answer is: yes and no. The FIRST occasion one works through a whole semantic subfield in the way outlined above, it takes a great deal of time. But the crucial point to appreciate is that THIS ONLY NEEDS TO BE DONE ONCE. After a set of words has been analysed and organized in a semantically principled way, the donkey-work is done, and the information can then be used with any child in any setting. Moreover, it is not necessary to 'take on' the whole of a subfield, when commencing to work systematically with vocabulary. All that is required, in day-to-day practice, is a few minutes to take the small number of words one has decided to teach, to look them up, and to identify their main features. This exercise alone can be extremely illuminating, and can lead to immediate suggestions for a systematic or structured approach which can readily SAVE time.

If, then, the people who do this were to take a few more minutes to transfer their analysis onto cards, or onto a computer, for other people to refer to, it would not take long before a core vocabulary of several hundred words were publicly accessible. And if the procedure could be standardized in some way, the permanent gain would be invaluable. But this is to think ahead. At present, what is necessary is for people to experiment with various procedures in different semantic fields – to try out techniques for bringing vocabulary more closely under the microscope, in relation to the daily demands of teaching. The dearth of published material in this area is such that a report on the analysis and teaching of even a SINGLE lexical item would be of general interest. I very much hope, therefore, that small-scale projects will be initiated by

teachers and therapists interested in ways of improving lexical intervention, and that some centres may proceed with larger projects. Vocabulary is the last large mountain to be scaled, within the domain of language structure, and it is about time we set up some base camps.

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