An Alternative to Checklist Theories of Meaning
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There seem to be in the air today two ideas whose times have come: the Prototype and the Frame. I'd like to consider here their relevance for semantic theory.

The Prototype idea is roughly this. Instead of the meaning of a linguistic form being represented in terms of a <u>checklist</u> of conditions that have to be satisfied in order for the form to be appropriately or truthfully used, it is held that the understanding of meaning requires, at least for a great many cases, an appeal to an exemplar or prototype--this prototype being possibly something which is innately available to the human mind, possibly something which, instead of being analyzed, needs to be presented or demonstrated or manipulated. The Frame idea is this. There are certain schemata or frameworks of concepts or terms which link together as a system, which impose structure or coherence on some aspect of human experience, and which may contain elements which are simultaneously parts of other such frameworks.

These two notions, used together, can offer us a new (possibly not altogether new) way of looking at a number of questions in linguistic semantics. One obvious way of linking them together is by claiming that in some cases the area of experience on which a linguistic frame imposes order is a prototype. For example, we know, without knowing how we know, the prototypic ways in which our bodies enable us to relate to our environment; this is knowledge we might speak of as part of our <u>body image</u>. Our language provides us with orienting and classifying linguistic frames--such as UP/DOWN, FRONT/BACK and LEFT/RIGHT--which we could not understand, or could not easily understand, if we lacked bodies or if we lacked a body image.

The prototype idea can be seen in the color term studies of B. Berlin and P. Kay (1969) and in the 'natural category' researches of E. Rosch (1973). I find it in the 'open texture' idea of the philosopher F. Waismann (1952); in the concepts of enactive and iconic memory representations of J. Bruner (1964); in R. Lindsay's discussion of the need for something akin

to 'mental pictures' in the design of language translation and problem-solving systems within artificial intelligence (1963); in H. Dreyfus's criticisms of artificial intelligence in which he speaks of the non-formalizable ability to perceive an individual case as being or not being an instance of a paradigm case (1972); in traditional studies of figurative language, in which any typical or believed-to-be-typical property of the 'vehicle' can contribute to the 'tenor'; and in the various recent works on vagueness in linguistic categorizations by such diversely motivated researchers as L. Zadeh (1971), G. Lakoff (1972) and W. Labov (1973).

The frame idea, under various names, goes back at least as far as the 'schema' idea of F. Bartlett (1932) and has many realizations in work on artificial intelligence, most elaborately in M. Minsky (1974). I also see it in the 'associative relations' idea of the psychologist G. Bower (1972) and in the work of the European semantic field theorists (see H. Geckeler, 1971).

Leaving explanations and justifications for another occasion, I will content myself here with showing some of the ways in which I would like to use these terms. I would like to say that people associate certain scenes with certain linguistic frames. I use the word scene in a maximally general sense, including not only visual scenes but also familiar kinds of interpersonal transactions, standard scenarios defined by the culture, institutional structures, enactive experiences, body image, and, in general, any kind of coherent segment of human beliefs, actions, experiences or imaginings. I use the word frame for any system of linguistic choices--the easiest cases being collections of words, but also including choices of grammatical rules or linguistic categories--that can get associated with prototypical instances of scenes.

Borrowing from the language of artificial intelligence and cognitive psychology, and recognizing that what I say may sound like extremely naive psychology, I would like to say that frames and scenes, in the mind of a person who has learned the associations between them, activate each other; and that furthermore frames are associated in memory with other frames by virtue of their shared linguistic material, and that scenes are associated with other scenes by virtue of sameness or similarity of the entities or relations or substances in them, or their contexts of occurrence.

I believe that this way of talking allows one to formulate an integrated view of many aspects of inquiry into the nature of language--the nature of meaning,

the acquisition of meaning, the nature of communication, the comprehension of texts, the developmental changes in meaning in the early life of an individual, and the changes of standard meanings in the history of a language. I would like to examine three issues in the study of meaning and comprehension, in the belief that sensible views of them can be formulated within the scenes-and-frames paradigm, and then to suggest ways in which the paradigm could be applied to other questions.

Take, first, the analysis of discourse. It seems to me that what is needed in discourse analysis is a way of discussing the development, on the part of the interpreter, of an image or scene or picture of the world as that gets built up and filled out between the beginning and the end of the text-interpretation experience. One way of talking about it is this: the first part of a text creates or 'activates' a kind of schematic or outline scene, with many positions left blank, so to speak; later parts of the text fill in the blanks (or some of them, anyway), introduce new scenes, combine scenes through links of history or causation or reasoning, and so on. In other words, a person, in interpreting a text, mentally creates a partially specified world; as he continues with the text, the details of this world get filled in; and in the process, expectations get set up which later on are fulfilled or thwarted, and so on. What is important is that the ultimate nature of this text-internal world will often depend on aspects of scenes that are never identified explicitly in the text.

One simple way to look at this text development is to consider text-coherence relations in a two-party conversation. The Japanese verb kaku and the English verb write are frequently acceptable translations of each other; but a frame-and-scene analysis of the two words would have to show them to be different. For both words there is an associated scene of somebody guiding a pointed trace-leaving implement across a surface. With the Japanese word, the nature of the resulting trace is left more or less unspecified. Thus, if somebody asks, "Nani o kakimashita ka?"--meaning, "What did you kaku?" --the answer can identify a word or sentence or character, or, just as well, a sketch or a doodle.

The frame linked to the English word write has that same scene associated with it, but it also has more. What it shares with the Japanese verb is a set of concepts including such entities as the writer, the implement, the surface on which the traces are left, and the product. Since I know at least that much about writing,

I know that if you tell me that you have been writing,
I can, talking within the frame that you have intro-
duced into our conversation, ask you such questions as
"What did you write?", "What did you write on?", "What
did you write with?". (If, instead, I were to say
something like "What time is it?" or "I've got a
toothache", I would not be talking within the frame
you introduced: I would be changing the subject.)

The English verb write, unlike the Japanese verb
kaku, has an additional scene associated with it, for
which there is what we might call a language frame. It
happens that the product of an act of writing cannot
be a picture or a smear, but has to be something lin-
guistic. Because of that fact, if you tell me that you
have been writing, I can then ask, talking within one
of the frames that your remark has introduced, such
questions as "What language were you writing in?" or
"What does what you wrote mean?". The word write, in
other words, simultaneously activates both an action
scene of a particular kind and, linked to it with the
'product' of the act of writing, a linguistic communi-
cation scene.

If your sentence gives some name to the product
of your writing, then you will have introduced a new
frame associated with that word or phrase. For instance,
if you tell me that you have been writing a letter,
you have introduced into our conversation what might
be called a correspondence frame. Talking within that
frame, I can ask questions like "Who are you sending
it to?", "Do you think he will answer?", "How long do
you think it will take him to get it?", and so on. Or,
if what you say to me is that you have written another
letter, then we have a kind of historical frame going,
and it is now appropriate for me--assuming that I don't
already know the historical setting for your remark--
to ask such questions as, "How many earlier letters did
you write?", "Who did you send those earlier letters
to?", and so on.

So far I have treated these reports (about you
having written something) as first contributions to a
two-party conversation whose participants do not know
very much about each other--an assumption which contri-
buted to the unnaturalness of the responses I suggested.
In most natural conversations, the participants have,
already 'activated', a number of shared, presupposed,
scenes that we can speak of as being in their con-
sciousness as they speak. If, for example, I know that
you are in the finishing stages of preparing an article
on Latvian palatalized consonants, and in that context

you say to me, with a pleased look on your face, that
you have been writing, I can then quite appropriately
ask a question like, "Have you decided what journal
you're going to send it to?". In this case, I have
fitted what you said to me into some scenes that I
have already activated, and I can quite legitimately
talk within the frames associated with that larger
complex scene.

My examples have been with simple two-party con-
versations. Single author texts have, of course,
analogous coherence properties. In each case, a text
is coherent to the extent that its successive parts
contribute to the construction of a single (possibly
quite complex) scene.

Let me take some questions of the acquisition of
word meaning as a second example of the ways in which
the scene-and-frame model can be put to use. Workers
in child language like F. Antinucci (personal communi-
cation) have argued that a child first learns labels
for whole situations, and only later learns names for
individual objects. A child might first associate the
word pencil, for example, with the experience of him-
self sitting in a particular room with his mother,
drawing circles; later on he isolates out certain parts
of such a scene (pencil, paper, drawing, circles, etc.);
still later he acquires different names for the parts
of different but similar scenes: drawing, writing,
printing, sketching; pencil, pen, crayon, chalk; paper,
blackboard, lavatory walls, etc.; so that when he is
finished he has a mature repertory of syntagmatic,
paradigmatic and hierarchical frames for scenes of both
greater degrees of abstractness and greater degrees of
precision and boundedness than the original scene in
which he first used the word pencil.

It appears, then--if this account is correct--that
in meaning acquisition, first one has labels for whole
scenes, then one has labels for parts of particular
familiar scenes, and finally one has both a repertory
of labels for schematic or abstract scenes and a reper-
tory of labels for entities or actions perceived inde-
pendently of the scenes in which they were first
encountered.

Once in a while one comes across a nice piece of
evidence about the middle stage of this development.
Mary Erbaugh, of the Berkeley linguistics department,
working in north Oakland last summer with some small
children, brought a grapefruit for her lunch one day.
She showed the grapefruit to the children, got an
acknowledgment from them that the thing was a grape-

fruit. She then peeled it, separated it into its segments, and started eating it. She reports that the children around seven years old in this group were surprised that what at first had looked like a grapefruit turned out to be an orange! Guessing at their reasoning, it would seem that a grapefruit, after all, is something you cut in half with a knife and eat with a spoon. This thing was obviously an orange. The categorizing function of these two words had not yet been liberated from the scenes of people in their experience eating them.

For a third example of a scene-and-frame analysis of linguistic phenomena, let us consider the so-called boundary problem for linguistic categories. Given the checklist theory of meaning, the most typical kind of research in lexical semantics involves examining, by presenting native speakers with bizarre contexts for word uses, the boundaries of application of particular words. One instance of this sort of research is Labov's study of category boundaries for the semantic domain that includes cup, bowl, glass, etc. Examining such features as having one handle, being made of opaque vitreous material, being used for consumption of liquid food, being accompanied by a saucer, tapering, and being circular in cross-section, Labov ends up with a complicated function for cuphood that has a built-in range of variation for each of these dimensions. (See Labov, 1973, p. 366.) My way of talking about his results is to say, not that they provide us with the function that specifies the boundary conditions for a category, but that they amount to a kind of statistical summary of the strategies that his subjects used in projecting from a familiar repertory of categories onto situations and experiences that were not covered by their associated prototypic scenes.

Given a checklist theory of meaning, boundary research on words like bachelor and widow would take seriously such questions as these: How old does an unmarried man have to be before you can call him a bachelor? Is somebody who is professionally committed to the single life properly considered a bachelor? (Is it correct to say of Pope John XXIII that he died a bachelor?) If so, is bachelorhood a state one can enter? That is, if a man leaves the priesthood in middle life, can we say that he became a bachelor at age 47? When we say of a divorced man or a widower that he is a bachelor, are we speaking literally or metaphorically? How can we tell? Would you call a woman a widow who murdered her husband? Would you call a woman a widow whose divorce became final on the

day of her husband's death? Would you call a woman a
widow if one of her three husbands died but she had
two living ones left? If people give different answers
to these questions, do they speak different dialects?
Are these dialects stable? And so on.

These are all reasonable questions, given the
checklist theory of meaning. According to a prototype
theory of meaning, these concepts are defined in the
context of a simple world in which men typically marry
around a certain age, they marry once, they marry ex-
clusively, and they stay married until one partner dies.
Men who are unmarried at a time when they could be
married are called bachelors. Women whose husbands have
died are called widows. This prototype world simply
does not cover the bizarre cases proposed by the category-
boundary-researcher's questions.

When you submit subjects to category boundary re-
search, you are actually asking them to make judgments
about whether they are willing to extend the frame con-
taining the word under question to a situation not
covered by the prototype scene he associates with it,
or you are asking him whether he is willing to create a
new frame for the new situation borrowing a word from
an already existing frame. You are probably not even
exploring his strategies for making such extensions,
since the contexts you present to him are not meaning-
ful enough to him to let him depend on his own express-
ive or communicative needs for making the decision.
In general, introspection about appropriate language
use in bizarre contexts does not yield highly dependable
data for semantic research.

Other areas in which scene-and-frame approaches
could give sensible alternatives to traditional accounts
are: selection restriction, synonymy, the recognition
of polysemy versus the formulation of core meanings,
metaphor, the nature of semantic fields. Briefly, the
standard theory of selection restrictions recognizes
as a relation between elements in a frame something
that should be recognized as the relationship between
a frame and a scene; the concept of synonymy can be
given a prototypic definition (participation in iden-
tical frames, association with the same scene), with
arbitrary decisions made on the use of the term in cases
of partial synonymy; the search for core meanings can
be criticized on the gounds that it requires the sepa-
ration of words from their contexts; metaphoring can
be seen as the act of applying to one scene a frame
which is known to be more basically associated with a
different scene; and semantic field theories can often

be shown to presuppose prototypes, even though they
rarely say anything about them.

I am convinced that something like the model I
have been talking about will allow an integrated view
of many subfields in the study of meaning and compre-
hension, though I will readily admit that my remarks
here are little more than suggestive. Sometimes I
think that what I am proposing is new, but sometimes
I fear that it is exactly what everybody has been
talking about all along. If it is new, it is probably
too commonsensical to be impressive, and will have to
undergo some careful reformulation. If, however, this
is what semantic theorists have believed all along, then
with this paper I am doing no more than announcing that
I at last understand something about my field.

NOTE: In the literature I have examined, the word
frame seems to have been introduced by quite various
routes, though the sense of organizational coherence
is present in all its uses. My own use of the word in
linguistics began with the pre-transformationalist view
of sentence structure as consisting of a frame and a
substitution list (a syntagmatic frame and a paradig-
matic set of mutually substitutable items); continued
with my notion of case frame (a formula for indicating
the valence or contextual requirements of a given
predicator--C. Fillmore 1968); and finished with the
concept I have tried to present here. In Minsky's case,
the metaphor is that of a single frame in a film. In
Goffman's case the word was borrowed from Gregory Bate-
son (see E. Goffman 1974, p. 7) to refer to analytical
frameworks within which human experience can be made
intelligible.

A word that I have at times preferred to frame is
module, which, because of its association with, say,
modular furniture, makes the process of assembling
frames together to make larger frames easily visualiz-
able. But since frame, unlike module, suggests more
strongly the idea of being for something, I prefer to
keep that word and to urge my readers to be cooperative
interpreters.

NOTE: At a time when it was too late to re-type this
paper, Mary Erbaugh told me that I had the details of
the grapefruit story wrong. It's not true, I regret to
have to report, that the children first acknowledged
that the thing was a grapefruit. They thought from the
start that it was an orange. What happened, if I've

got it right this time, is that Mary tried to <u>teach</u>
them that this thing was a different kind of fruit, a
grapefruit, but that by the time she peeled it and
segmented it, they couldn't believe that it was any-
thing but an orange. Part of the point I wanted to
make is still there, but a big part of it is lost.
(Maybe it <u>could</u> have happened the way I said it
happened.)

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