

Santa Cruz Lectures on Deixis  
1971

Charles J. Fillmore  
University of California, Berkeley

The IU Linguistics Club wishes to thank Mouton Publishers, The Hague, for permission to reproduce "May we come in?", a version of which appeared in Semiotica; and Akademische Verlagsgesellschaft Athenaion, Frankfurt am Main, for permission to reproduce "Coming and going", a version of which appeared in Linguistik 1971.

CONTENTS

Introductory Note . . . . .	i
May we come in? . . . . .	1
Space . . . . .	16
Time . . . . .	28
Deixis I . . . . .	38
Coming and going . . . . .	50
Deixis II . . . . .	70

John  
Lawler

Santa Cruz

# Lectures On Deixis 1971

CHARLES J FILLMORE

UNIVERSITY OF CALIFORNIA, BERKELEY

Reproduced by the  
Indiana University Linguistics Club  
November, 1975

Write for our latest publications list  
I.U. Linguistics Club  
310 Lindley Hall  
Bloomington, Indiana 47401

- ( 113

## INTRODUCTORY NOTE

These lectures were given at the 1971 summer linguistics program at the Santa Cruz campus of the University of California, while I was a Fellow at the Center for Advanced Studies in the Behavioral Sciences at Stanford. In those days I thought of my deixis lectures as a preview to a book that was in the making. I now realize, unhappily, that since a year at the Center, away from classrooms and committees, did not give me the time and the wisdom to finish it, the book is never going to be written.

Revised versions of two of the lectures -- the first and the fifth -- have already appeared in public. I am unhappy about having the rest appear in their present form, but in any attempt to improve and update this material I would not know where to start, and I would certainly not know where to stop. But I can say of the non-existent enlarged improved integrated updated version of these lectures that (1) they would show more of the influence of David Bennett, Eve Clark, Herbert Clark, Paul Friedrich, Geoffrey Leech, John Lyons, Michael Silverstein, Leonard Talmy, and Paul Teller, and that (2) they would show the benefit of at least one more visit (if I would be welcomed) to the members of the Mexican branch of the Summer Institute of Linguistics who, in December of 1970, submitted patiently to my interviews with them, about "their" languages, when I visited SIL workshops in Mitla and Ixmiquilpan.

Charles J. Fillmore  
Berkeley  
November, 1975

## SPACE

I said in the first lecture that one of my goals in these talks was to become clear about the ways in which the grammars of natural languages reflect what Rommetveit calls the "deictic anchorage" of sentences -- an understanding of the roles sentences can serve in social situations occurring in space and time. Frequently, as I tried to show in that lecture, a sentence can only be fully interpreted if we know something about the situation in which it has been used; in many cases, then, understanding a sentence involves knowing the class of situations in which it could be appropriately uttered, and knowing what effect it could be expected to have in that situation.

One of the sub-categories of deixis, you will recall, was place deixis, having to do with the linguistic expression of the speaker's perception of his position in three-dimensional space. A second sub-category of deixis was time deixis, having to do with the position in time of the speech act. Before I go on to the topics of place and time deixis, I plan to devote two lectures to non-deictic conceptions of space and time.

The difference between deictic and non-deictic conceptions can be understood by an analogy. Consider the difference between a sculptured representation of a human figure, set up in the middle of a courtyard, and a photograph of a human figure. The sculpture does not represent any particular observer's-point-of-view, but the photograph does. The photograph does because the camera had to be positioned at a particular place in front of or to the side of, above or below, or on the same level as, the model.

Sometimes the same linguistic material can have both non-deictic and deictic functions. One example is the word "left". In a sentence like "My sister stood at the general's left side," we have an example of the non-deictic use of the word "left." The location of the speaker at the time of the speech act is completely irrelevant. The situation is quite different for a sentence like "What's that shiny object over there, just to the left of the cypress tree?" In this second case, the location in space of the participants in the conversation is absolutely essential to an understanding of the question.

I will deal today with spatial notions that have no connection with the observer's point of view, as in the sentence about my sister and the general. Knowing what it means to stand at the general's left side requires knowing something about how a general's body is designed; it requires no special understanding at all about where the speaker is when he talks about it.

A number of writers who have interested themselves in the semantic structure of the system of locative prepositions in English have noticed that prepositions can be grouped together and distinguished from each other in ways that correspond to the ascription of different dimensionality properties to the entity named by the following noun or noun phrase. In particular, the preposition "at" is said to ascribe no particular dimensionality to the referent of its associated noun, the preposition "on" is said to ascribe to the referent of its head noun the property of being a line or a surface, and the preposition "in" is said to ascribe to the referent of its head noun the notion of a bounded two-dimensional or three-dimensional space. Consider phrases like "at the intersection" -- "on the line" -- "on the page" -- "on the wall" -- "in the city" -- "in the kitchen".

Frequently the same noun has different interpretations depending on what dimensionality property is assigned it by the accompanying preposition. Using examples borrowed from Geoffrey Leech's book, *TOWARDS A SEMANTIC DESCRIPTION OF ENGLISH*, I offer "at the corner" which means near or in contact with the intersection or meeting of two straight lines -- or two streets; "on the corner" which locates something as being in contact with a particular part of the surface of some angular two-dimensional figure or three-dimensional object; while "in the corner" is an expression in which the noun "corner" is used to indicate a portion of three-dimensional space -- in particular, a part of the interior of, say, a room.

Or consider the difference between the understanding of the noun "island" when it is used with the preposition "on" or the preposition "in". If something is said to be "in the island", the noun is used as indicating merely a bounded geographical area; if something is said to be "on the island", the word "island" is taken as naming something perceived as a three-dimensional object in three-dimensional space. Notice that there is nothing particularly odd about the phrase "on Guam", because it is easy to conceive of Guam as a separable three-dimensional object that things said to be "on Guam" are on the surface of; it is odd, however, to speak of something as being "on Australia" or "on Greenland".

Leech points out that the noun "grass" is used differently in the two expressions "in the grass" and "on the grass". In the former the grass is thought of as being a relevantly three dimensional space, which would imply that one has in mind either very small objects or fairly tall grass.

A number of nouns in our language seem to have their dimensionality properties built in, because they are more or less limited to occurring with one or another of the two prepositions "on" or "in". For example, "lawn" and "yard". We speak of children playing "on the lawn" or "in the yard", but not as playing "in the lawn", or "on the yard" in the same meanings. The noun "lawn" is generally used only to indicate a surface, but the noun "yard" names a bounded area and not specifically a surface.

Being located on the surface of this planet calls for "on" if we use the word "earth" but "in" if we use the word "world". The word "earth" names a three-dimensional object in three-dimensional space, as many things about the syntax of that word show: what is "in the earth" is in the interior of a three-dimensional object, what is "on the earth" is on the surface of a three-dimensional object.

The concepts that are apparently needed for covering this three-way system are simple location, surface, and interior. John Catford's terms are neutral, exterior and interior. Location of something in contact with a surface calls for the preposition "on". Simple location, with no reference to surface or interior, calls for "at". The word "surface" is perhaps not too apt, since what I have in mind includes a line, as in "on the line", "on the edge", "on the border", etc. Catford's word exterior doesn't particularly help with that, either. [See John Catford, "Learning a language in the field: problems of linguistic relativity," Modern Language Journal 53.5 (1969).]

The surface vs. interior distinction seems to be very similar to what distinguishes the adessive/allative/ablative cases in Finnish from the inessive/illative/elative cases -- except that in Finnish there seems not to be a category that corresponds to the simple or "at"-type locative of English. Robert Austerlitz distinguishes the two systems as unbounded and bounded, the bounded understood as having a boundary that makes it possible for something to be said to be inside it. Some nouns can presumably be used with either of these case categories, but, as with English "lawn" and "yard", there are some which are limited to one or the other. The word for countryside, according to Austerlitz, occurs only with the adessive etc. cases, the word for forest occurring only with the inessive etc. cases.

John Catford has shown that the Kabardian system subdivides the interior relationship into four sub-categories, distinguishing them in this way: there is one for horizontally bounded spaces, such as courtyards and boxes; one for lower bounded spaces, such as holes and pockets; one for upper-bounded spaces, such as houses and rooms; and one for filled spaces such as lakes and crowds.

The typical kind of locating expression in a language is one which indicates the location of one object with respect to some other object. The simplest kinds of locating expressions that we have examined so far do nothing more than impute a certain dimensionality to the reference object. Objects, areas, and spaces, can be thought of as having extremities and parts, and a language provides separate words for these. A line has ends, a surface can have an edge, the three-dimensional space satisfying certain space conditions has corners, a middle part, and so on.

The locative expressions I have mentioned so far place something essentially inside or in contact with the reference object or reference area. It is also possible to introduce the concept of relative distance, and refer to one object as being near to or far from the reference object. "She was near the general."

Up to this point I have spoken of the reference objects only in terms of their dimensionality, or in terms of whether it is possible to characterize them as having surfaces or interiors. An extremely important set of spatial notions has to do with whether a reference object can be said to have some sort of orientation in space. Since all of the well-known natural languages have developed on this earth, certain notions of spatial orientation common to all human beings, possibly by virtue of their having semi-circular canals in their inner ears, can be counted on as occurring in the semantic organization of lexical items in all languages. These are, first of all, the up/down orientation that is determined by the direction of gravitational forces as perceived on this earth, and two horizontal axes that we can refer to as front/back and left/right. It is important to realize that for a thing to have an up/down orientation, it must be conceived of as permanently or typically or symbolically oriented in a fixed way with respect to the direction of the pull of gravity. A thing can have a vertical or up/down orientation without having either of the two possible horizontal orientations, as, for example, a cylindrical water-tower. A thing can have a front/back orientation, as for example, a missile moving in outer space, without having either an up/down orientation or a left/right orientation. The left/right orientation, however, is possible for an object only if that object has both a vertical or up/down orientation and a front/back orientation.

Words that are used for locating objects along the vertical axis with respect to a reference object include, in English, the positions "above", "below", "over", "under", and "beneath". Whether two objects are positioned as being at different positions along the same vertical axis does not depend on how either of the objects is oriented.

I mentioned earlier that English has words for extremities and parts of objects, as with words like "end", "edge" and "corner"; there also are names and modifiers for vertically oriented extremities and parts of objects, such as "top" and "bottom", "upper" and "lower". Notice that the same words "top" and "bottom" name both extremities and parts. If something is "on the top of X", it is in contact with X's upper surface; if something is "in the top of X", it is understood as being contained in the uppermost portion or segment of X.

Many of the expressions by which we locate one object with respect to some other object impute to that second or reference object some sort of horizontal orientation. One of the surfaces of many animals and artifacts is regarded as having a special orientational

priority. The word in English for what I have in mind is "front". For animate beings having a certain degree of complexity, the front is that portion of it which contains its main organs of perception and which arrives first whenever it moves in its most characteristic manner of movement. This double criterion for frontness in animate beings may lead to some uncertainties. I assume that for animals, the location of the main organs of perception outweighs the direction-of-movement criterion, since we speak of crabs as moving sideways, not as having heads on the sides of their bodies; and since if we found a race of people who typically get around in the way we see people move in reverse motion pictures, I believe we would say of them that they walk backwards rather than that they have faces on the backs of their heads.

Artifacts or other non-living objects which living beings in some way use or have access to, can also sometimes be said to have fronts and backs. If the object has some surface similarity to a front/back oriented animal, the portion of the object designated as its front is so designated on analogy with the associated model. Objects which have a fixed orientation when they are in motion have that part which arrives earlier designated as the front. Otherwise, that portion of an object is designated its front if it is that part to which its users are oriented when they are using the object in the principal way which it was intended to be used, or that part of an object is designated as its front if it is the part of the object to which its users typically or importantly or symbolically have access. Notice, incidentally, how the user-orientation criterion and the access criterion operate differently in the case of a traditionally designed church; the user-orientation criterion designates one end of the building as its front, while the access criterion designates the opposite end as its front. One end of the church is thought of as its front on the inside, the opposite end on the outside.

As with "top" and "bottom", the words "front" and "back" designate both extremities and extreme parts of objects or spaces; but unlike "top" and "bottom" they also occur in expressions indicating position outside the object along the front/back axis of the object; in this way they have functions analogous to those of "above" and "below", except that here the setting of the axis is determined by the reference object itself. If an object that we wish to locate is outside the reference object, along the front/back line, and closer to its front extremity, we say it is "in front of" the reference object; if it is outside the reference object but closer to the back extremity, we say it is "in back of" or "behind" the reference object. If the object being located is in contact with the front surface, we say it is "on the front" of it; if it is in contact with the back surface, we say it is "on the back" of it. On the other hand, if it is inside the reference object, the expressions used for indicating whether the object being identified is closer to the front or to the back extremity are, respectively, "in the front" or "in the back" of the reference object. Thus, going back to church, if I ask you to meet me "in back of the church", we will meet outside of the church at one end of the building, but if I ask you to meet me "in the back of the church", we will meet on the inside and at the opposite end.



Digression: With buildings and television sets, the word "back" is satisfactory, but the word "rear" might have been a more apt choice as the opposite member to "front". This is because of the connection in English of the word "back" with the meaning "the outer part of the body closest to the spinal column". In cows and horses and dogs and pigs their backs are on top.

I said earlier that objects which enjoy both an up/down orientation and a front/back orientation also have "sides", known in English as the "left" side and the "right" side. There is a basic sense of the terms "left" and "right" by which human beings are taught to find left and right on their own bodies, and it is likely that this can be learned only by demonstration. There are no simpler concepts in terms of which the notions "left" and "right" can be explicated. Lexicographers have tried various devices for communicating the notions "left" and "right". These devices are usually successful, of course, but what they offer should not be called "definitions" strictly speaking.

English language dictionaries typically define "left" as "that side of the body on which in man the muscular action of the limbs is, with most individuals, weaker than on the other side". In the conceptual analysis sense of definition, of course, that is not a definition of "left". It is simply not true that "left" and "right" are statistical concepts related to physical strength, and we can be quite sure that speakers of English will continue to use these words in the same way even if it should ever happen that through mutation or exercise, the typical laterality preferences of human beings get reversed. A French dictionary will define "left" as that part of the human body which contains the heart. A Japanese dictionary defines "left" as that part of a person which faces west when the person faces north. A Chinese dictionary defines "left" as the opposite side of right, and "right" as the opposite of "left". The notions "left" and "right" can be learned, as I suggested, only by demonstration; and, in fact, not everybody succeeds in learning the distinction.

I said that for an object to have left and right sides it is important that it have both a top and a bottom, and a front and a back. A missile traveling in outer space has a front and back, determined by the direction of motion, but in outer space there is no standard reference plane in terms of which it can be said to have an up/down orientation. Accordingly it makes no sense to speak of it having a left and right side, or to speak of it as suddenly taking a turn to the right. An S-shaped love-seat, to take another case, is an object which has a top and a bottom, but no front and back. Accordingly, the arms of a love seat cannot generally be referred to as its left and right arms.

The orientations left and right are fixed first of all for human beings, and then by analogy to other sorts of objects which have the requisite up/down and front/back orientation. For animals or objects which have some surface similarity to humans, left and right are determined by completing the analogy. Can we also know the left and right sides of appliances and vehicles and buildings and furniture just by completing the analogy, that is, by centering our own top-bottom-front-back framework into it and identify its left and right only by knowing top from bottom and front from back. The choice seems to depend on the way in which human beings position themselves with respect to objects. The left drawers of a chest of drawers are to one's left as one confronts the thing; the left arm of a chair or a sofa are to one's right as one faces it. Things with respect to which people orient themselves in opposing ways have left and right undetermined, or determined by an ad hoc convention. Thus the "sinister" and "dexter" portions of an escutcheon are defined in heraldry as the left and right sides from the point of view of the bearer, not the viewer. The expressions "stage left" and "stage right" are the left hand and the right hand parts of the stage from the point of view of the performers, not the audience.

Digression: Consider for a moment the way we talk about flounders. In their deep structure flounders are vertically swimming fish, each equipped with a rotation variable marked plus or minus left. A maturing flounder marked alpha-left undergoes two transformations, one by which it starts swimming on its alpha-left side, another by which its alpha-left eye migrates over its head to the minus-alpha-left side of its head. What in the surface structure of a mature flounder is its top corresponds to the left or right side in the deep structure; in fact, our choice of the words "top" and "bottom" are determined by the surface structure, "left side" and "right side" by the deep structure. The summer flounder swims on its left side, the winter flounder swims on its right side (or else the other way around). We can say of the summer flounder that its top is its right side and its bottom is its left side.

Another digression: Some day I would like to learn why people who sail in ships have never been satisfied with the words "front", "rear", "left" and "right" when talking about the parts of ships.

Still another digression: Walking "widdershins" around something is walking around it with one's left side toward it, and walking "deasil" around something is walking around it with one's right side toward it. Sometimes it is explained that these words refer to movement against or in the direction of the sun's shadows. One way of testing the real meaning of this words is to ship a native speaker of English to the southern hemisphere and to ask him to walk widdershins or deasil around some tree, and see what he does. This will determine whether "left" can be defined as the direction you turn when you walk widdershins in the northern hemisphere or whether "widdershins" needs to have the concept "left" in its definition. One wonders why such a simple experiment has never been tried.

The extremities of an object along its left/right axis are called "sides". Although the word "side" can technically be used of the top side or the back side of an object, the most typical use of the word depends upon an understanding of the particular way in which a physical object is viewed as oriented in space. To see what I mean, consider a large cube that is not thought of as being oriented in space in any particular way. When people are asked how many sides that cube has, they typically answer six. Now put that same cube in the middle of a living room, use it as a piece of furniture, with the part that is resting on the floor designated as its bottom and the part that holds the cheese tray and the cocktail glasses designated as the top. Now how many sides does it have? It has four sides. Next move it into the baby's room, paint a face on one of its vertical surfaces and pin a tail on the opposite one. Now it has two sides. The English word "side", it appears, is used to designate any smooth facet of an object which has not been designated as a top or bottom extremity or as a front or back extremity.

Physical objects have extent in space, the extent of one object can be compared with the extent of another object, and standard-magnitude objects can be taken as units of measure. When measurement becomes abstract, estimates can be made of the distance between two points in space as well as the extent of objects. In a number of cultures, determining the magnitude of manipulable objects is one thing, estimating the distance between two locations, like two villages, involves totally different concepts. According to Hallowell, the Saulteaux Indians measure walls, canoes, or tools, with fathoms, cubits, or finger-stretches, but it is not even conceivable to them that the distance between two towns can be indicated in comparable terms. Longer distances, that is, are always measured in terms of the amount of time it takes to get from one of them to the other. If the two towns are at a distance that cannot be traveled in one day, they are, say, "three sleeps apart". Shorter distances are indicated by pointing to the extent of the sky that the sun travels in the time it takes to get from one town to the other. [A. Irving Hallowell, Culture and Experience, U. of Penn. Press (1957), chapter 10.]

Consider some of the words we use in English for speaking about the measurement of objects and the distance between places. Consider, first, an object which has one of its dimensions considerably greater than the others. If this object has no vertical orientation, we say that it is "long" or "short", or we say that it is "so many units long". If, on the other hand, the object is vertically oriented along one of its major dimensions, we say that it is "tall" or "short", depending on how it compares with the norm we have in mind, or that it is so many measurement units "tall". For distances, we say that an object is "far from" or "near to" a mentioned or unmentioned reference object if the two locations are not seen as being generally on the same

vertical axis, but we say that something is "high" or "low" if what we are concerned with is its vertical distance from the horizon or the earth's surface or some other reference point.

In expressing measurement of objects that are viewed as having a spatial orientation, the adjectives that accompany these measurement indications are selected according to a number of assumptions we make about the salient dimensions and the specific spatial orientation of the objects in question. The linguist who has had the most to say about the features that I am about to describe is Manfred Bierwisch. [See his "Some semantic universals of German adjectives," Foundations of Language 3.1 (1967).] Bierwisch's examples were from German, and German and English measurement adjectives have some interesting differences, but I will speak of the English equivalents. Consider first the way in which the word "wide" is used in measurement expressions for roughly oblong objects. Suppose there is a plot of land 75 feet by 200 feet in dimension out in the middle of nowhere, and you ask somebody to go out and measure it and to report to you the results of his measurements. He will probably come back and tell you that the lot is 75 feet wide and 200 feet long. Now build a road along the 200 foot length of this lot in a way to suggest that this is a lot that has one of its borders along a road in some future housing development, and ask somebody to go out and measure the lot. This time you will be told that the lot is 200 feet wide and 75 feet deep. Putting the road alongside of the lot will have served to designate one border of that lot as its "front", and when an object to be measured has a front/back orientation in space, the word "wide" is used in measuring the left-to-right extent along its front, and the word used for indicating the measurement of its front-to-back distance is the word "deep". This is true of three-dimensional objects as well as areas of land, so that, for example, a table that measures three feet by five feet will be described as three feet wide and five feet long, while a desk having the same dimensions will be described as five feet wide and three feet deep.

The word "deep" has a second use as well. Where the "salient" or "base line" extremity along the top/bottom axis of an object is its bottom, we say that the object is so many units "high" or "tall" (depending on certain shape criteria), but where the base line vertical extremity is the top of an object, we speak of its top-to-bottom dimension as being so many units "deep". A building is "high" or "tall", a pond or well is "deep". For certain kinds of objects it is uncertain what the base line is, and so we don't know whether it's "high" or "deep". One example is a drawer. Some people will describe the top-to-bottom dimension of a drawer as its height, others as its depth. To these latter, the question "How deep is your desk drawer?" is ambiguous, because one could be speaking about the measurement from its top to its bottom, or the distance from front to back. The word "deep", then, has these two functions. (There is a third, too, which I will only mention in passing. Something is said to be "deep in X" if X can be a large bounded area and the location is far from the boundary, as in "deep in the

forest".) In any case, the word "deep" is appropriate only if what is measured is the dimension of an enclosure.

In Bierwisch's terms, the adjectives "high", "long", "wide", and "deep" are used only for indicating measurements along salient dimensions. Where a dimension is not salient, the adjective needed is "thick". To give some of Bierwisch's examples, a board has two "salient" dimensions, and if one of these is greater than the other, we say that the board is wide, long and thick by so many units each, the dimension indicated as "thick" being nonsalient. A door has a left-to-right dimension or a width, a top-to-bottom dimension or a height, and one nonsalient dimension, its thickness. While a board is long, wide and thick, a door is high, wide and thick. A drawer has a left-to-right dimension, its width, a top-to-bottom dimension, its height, and a salient front-to-back dimension, its depth. A drawer, on the German pattern at least, is high, wide and deep. The word "deep" is used for the front-to-back distance of an area or of a stationary storage object; for an object which moves, on the other hand, the front-to-back distance is its length. Thus an automobile has a left-to-right dimension, its width, a top-to-bottom dimension, its height, and a front-to-back dimension, its length. Reviewing: an automobile is long, wide and high; a drawer is high, wide and deep; a door is high, wide and thick; and a board is long, wide and thick.

So far I have mentioned only static concepts associated with space. Many spatial notions are associated with movement, and it is to that that I would like to turn now. The kind of movement that will concern me has to do with "locomotion": an object changing its location through time. In characterizing an instance of locomotion, we can indicate the position of the object at an earlier point in time, the position of the object at a later point in time, and we can in some way characterize the path that connects these two locations. If we follow the tradition of identifying the point of origin as the Source and the destination as the Goal, and if we consider the dimensionality distinctions that I mentioned earlier, we can see, as has been pointed out many times, that the three-way distinction which we found for expressions of simple location involving English prepositions, namely expressions with "at", "on", and "in", are paralleled with Source and Goal expressions too. If we take X as the point of origin of movement, then "from X", "off of X", and "out of X" are the three Source expressions which impute to X, respectively, no particular dimensionality, the property of being or having a surface, and the property of being or having an interior. Paralleling these distinctions in Goal-of-motion phrases we find "to X", "onto X", and "into X". David Bennett has pointed out that when the Path of a movement is indicated by a salient intermediate location, the three-way dimensionality distinction holds there, too. "Via", Bennett claims, is the path-indicating preposition with no presuppositions about the dimensionality of the object named by the following noun,

"over" and "through" are the prepositions that have associated with them notions of surface and interiority respectively. [David C. Bennett, "Some observations concerning the locative-directional distinction," mimeo. (1970).]

The case-like notions that we have need of for descriptions of instances of locomotion, then, all seem to require an understanding of the same dimensionality distinctions which we found necessary for expressions of simple location. One might very well wish to take the prepositions of Location, Source, Path, and Goal, which have no dimensionality presuppositions associated with them, and regard them as expressing the basic static and dynamic positional notions; and regard all such other notions as surface, interior, front, back, top, bottom, etc., as belonging to a separate system of semantic concepts associated with the space-semantics of words naming locations and objects. Taking this point of view, we can regard the locational and directional notions associated with "at", "from", "via", and "to", as being basic, regarding all other locative or directional concepts as being conceptually more complex. For example, "in X", is, by this analysis, to be analyzed as meaning "at a place which is inside X"; "into X" can be analyzed as "to a place which is inside X"; "through X" can be analyzed as "via a place which is inside X"; and "out of X" can be analyzed as "from a place which is inside X". Something like this is essentially what Jeffrey Gruber, Geoffrey Leech, and David Bennett have proposed. The grammatical process of lexical insertion will then be analyzed as depending on a number of pre-lexical transformations of the sort which combine prepositions with prepositions, prepositions with semantic representations of extremities, surfaces, and parts of objects, or which combine some of these with particular predicators.

There are in English many directional complements of the preposition phrase type which have the same form as the underlying locative complement. This is true of the complements of the Path and Goal type, but it is not true of Source complements, because it seems that Source complements are essentially always marked with a Source-indicating preposition. An expression like "behind the sofa" can appear in a purely Locative expression, as in "He left his slippers behind the sofa"; it can occur as a Goal expression, as in "The cat ran behind the sofa"; it can occur as a Path expression, as in "The cat ran behind the sofa out the window".

Our examples with "behind" showed that there are Goal complements which have the same form as the corresponding Locative expression. The next thing to consider is the case of a Locative expression which has the form of a Goal or Path expression. The function of these expressions is that of indicating the location of an object by making use of two reference objects, one of them possibly implicit. A way of looking at these expressions is that they indicate the location of objects as the destination of possible journeys or movements. Thus, if I say "The cemetery is beyond the chapel from the post office", you can think of the location of the cemetery as the destination of a journey, a more

or less straight line journey to be sure, which began at the post office and went past the chapel. Similarly, if I said "Fred lives past the cemetery", one might interpret what I have said as meaning that if one makes a straight line journey from some implicit starting point and goes via the cemetery, one will come to Fred's house.

The notion of a straight line journey, which I called on for explaining the locative use of directional phrases, presupposes an understanding of maintaining a constant direction. The most typical way of maintaining a constant direction involves having standard orientation points provided for the users of the language by physical features of the environment. In many communities the points of the compass are used for this, of course, but in localities that have particularly noticeable physical features that do not orient themselves by the compass, terms that refer to these features take on a greater importance in indicating direction of movement than the cardinal directions themselves. That this can be so even in an English-speaking community will be obvious to anyone who has tried to read a newspaper in Honolulu.

Digression: To the extent that standard orientation points have great social or mythic importance in the community, the participants in the culture experience distress whenever they are not sure of their location with respect to these orientation points. This is the experience of being disoriented, and I assume that it should be of greater interest to a psychologist than to a linguist, but it might be interesting to remark that, according to Hallowell, the Ojibwa Indians experienced distress when they lost track of their orientation in space, but had no particular concern about what day it was. An American, by comparison, can become quite uncomfortable if he does not know whether it is Tuesday or Sunday, but can live comfortable for days on end without ever knowing whether he is facing north or south.

In this lecture I have reviewed a number of the concepts involving space which have some relevance to semantic and pragmatic facts about the vocabulary of natural languages. In my next lecture I will do the same for concepts of time. In some ways, time is conceptually simpler than space, since it only has one dimension and is unidirectional. But there are complications enough there too, as you will see.