

QUESTIONS - RIO DE JANEIRO

1. Live questions 18/11/96

1. **Why have you stopped using the term 'syntax'?**

Well, I haven't really stopped using it, using the term syntax. Sometimes, I try avoiding it because the term is ambiguous. It used to have several different meanings, so in its really technical sense, the sense it has in the formal sciences, mathematics, and so on, there syntax has to do with the properties of symbolic expressions and the way they relate to one another. That's syntax. In that usage all of phonology is syntax. In my opinion at least just about everything that's called semantics is syntax. It has to do with something that's going on inside your head. With internal representations that are symbolic objects and the way they interact and so on. You get to true phonetics when you go outside the head. So the people who work on speech analysis or production in the engineering department. They work on what happens between the head and the air, the things happening out there. And the people who would be working on true semantics would be talking about the relation between what's in the head and what's out there in the world that people are talking about. Almost no one works on that. That's a very hard problem. What people work on is the relation between what's in the head and the way it's interpreted. So when people in semantics talk about books, they are not talking about those physical objects but these funny things that have the property that you and I can take the same one out of the library even when they're different. But that's something imposed by the mind, so they're really studying basically what's in the head. So that's the technical sense of syntax. It's also used in a narrower sense, which is used for that part of the syntax that excludes the whole sound system, the phonological component, and sometimes it's used in other ways. But it's only because of the ambiguity that I sometimes try to avoid it.

2. **A respeito do léxico, quais aspectos estão relacionados aos traços descritivos e quais aspectos têm relação com traços explanatórios?**

That distinction can't really be made for features. Features are just things. Really like lip closure or referring to an artifact. These are the elementary things out of which languages are constituted. You can think of them like elementary particles in physics, they're there and you want to know how they work, how they interact with one another. You want to do

that whether your purpose is description or whether your purpose is explanation. These are not sharply distinct categories, so any sort of description is some kind of an explanation any time you describe something for example if somebody who likes flowers talks about how they're arranged in that this one looks like that one and they have the same color and so on what's called natural history. That's a kind of explanation because any kind of organization of phenomena is imposing some structure on it. On the other hand it's a very shallow explanation. You get to deeper explanation if, say, molecular biology ever reaches the point - it's far from it today - suppose someday it reaches the point where it can account for the fact that this flower has a certain color or a certain kind of stem or something like that. Well, that would be a deeper explanation, and you could go to even deeper explanations, so that you might try to get to that in terms of chemistry or in terms of theories of elementary particles. Explanations can always go deeper. But in the study of language there is a technical usage, and that's the one I mentioned. Descriptive adequacy is the property that a theory of a language has. Like if someone writes a grammar of Portuguese we'll say that it's descriptively adequate to the extent that it gets the facts straight. Explanatory adequacy is a property of theories of language, not of theories of a particular language. So a general theory of language, what's called universal grammar sometimes meets the condition of explanatory adequacy to the extent that it automatically provides a descriptively adequate grammar of Portuguese, given the data available to a Portuguese three-year old. If it can make that transition, takes the data available to the child and computes away and turns it into a descriptively adequate grammar of Portuguese, that would meet the condition of explanatory adequacy. The idea is that the principles of the theory, within the boundary conditions, would be explaining the properties of Portuguese on the basis of the data of Portuguese provided to the child. In a sense is like a model of the acquisition of language. The child hears the data, the mind starts computing away, and out comes knowledge of Portuguese, the descriptively adequate grammar. But every feature enters into both description and explanation. There are just different ways of looking at the use of the features. So we can't really distinguish among the feature those that are descriptive from those that are explanatory. They just don't break down that way.

3. O trabalho descritivo sobre a sintaxe tem alguma utilidade para lançar luz sobre o que é uma explicação? Nesse caso, o modelo assim chamado modelo GB é ainda o melhor para propósitos descritivos?

Well, just on terminology, what is called the GB model is exactly what I was referring to as the principles and parameters model. It was called, I've been fighting for fifteen years without success to get people to stop calling it the GB model. GB stands for the words Government and Binding, and it's called the GB model because it arose out of a series of seminars and discussions that I was giving in Pisa, and a book came out of it called *Lectures on Government and Binding*, and therefore it came to be called Government and Binding theory, GB theory but that's only because most of the discussion had to do with those two topics. Could have just as well been called Case theory and Theta-theory, you see, that's just an accident, and it doesn't mean anything. I just think it's a bad term, but everyone uses it, so I guess that battle is lost. But it's just as well to have it called a principles and parameters model, and in my current view, government doesn't even exist. And binding is not internal to language as I assumed then, but sort of an interpretative system.

Then comes the second question, is descriptive work in syntax useful to shed light on explanation? Well, it's unavoidable. You can't explain phenomena unless you have some description of the phenomena. So, for example, if you are a theoretical chemist, someone has to tell you what the data are. It's not like mathematics, where you sort of make up the whole system. There's something out there. And you have to figure out how it works. And the experimental sciences try to give some data as to how it works. Now, the experimental sciences aren't separated from the theoretical sciences. I mean an experimental physicist knows what to look for, because there is some question that's raised in the theoretical science. So, for example, this Mars rocket that misfired had some experimental devices on it which were going to ask specific questions that were posed by theorists. And the same ought to be true here. If linguistics advances enough that will become obvious. The people that are doing descriptive work, they're more on the experimental side of the common endeavor, and the people who are sitting at their desks trying to figure out how these impossible things can be explained, they're in the more theoretical side of the endeavor. To ask whether descriptive work would be useful for explanation would be like asking whether experiments in physics are useful for theory in physics. Well, they are central. You can't proceed without them. As to what the best model is for descriptive purposes, that's a bit like the question what are the best experimental methods in chemistry or in biology. And that is the way it is, I mean, experimental sciences are hard to feel. You have to use the devices that are available, you are oriented towards the questions that seem important,

and there's no answer to the question what's the best experimental method. In fact that's a creative decision. And the same is true when one is doing serious descriptive work on a language. If you take Portuguese or one of the indigenous languages of Brazil you can be interested in studying it for many different reasons. Maybe your interest is preserving the language because its speakers are dying out. Ok that is very important. Maybe your interest is helping to make the culture of the community available to the people who live in it. Very important human task. If your interest is trying to contribute to the general theory of language you would probably ask different questions and do a different kind of work. But there is no answer to what is the right way to do it. There are many right ways depending on what question you happen to be working on.

4. Se a morfologia tem os seus próprios primitivos, que aparentemente não são motivados pelo sistema articulatório perceptual, em que medida a morfologia é um subcomponente do componente fonológico em vez de ser um nível sintático de representação?

Well, these are at the moment pretty live research topics and people rightly disagree on what they think the answers are. These are questions that are being investigated. But when we talk about morphology there is a distinction that has to be made. Take Latin and Chinese and think of the morphological systems. In Latin you have an expression for the cases. So you have nominative case, genitive case, accusative case, and so on. And you have inflection on the verb, so the verbs are marked as to their number and their gender and their person and the nouns fall into different declensions. All this stuff you learn at school. That is the expression of the morphology in Latin. Suppose you are studying Chinese. Well, the expression of the morphology is zero. The morphology is never expressed. So case is never marked and none of these others distinctions are ever marked. If you do pure superficial descriptive morphology you want to hear what the sounds are. They look completely different. One of the rather very interesting conclusions that has been reached in the last fifteen years or so - this was originally suggested in a famous letter that was never published that was written by Jean Roget Vergnaud - is that you could explain a lot of the phenomena that we were trying to account for if you assumed that English had the Latin case system, except that you didn't pronounce it. So the mind hears it but the ear doesn't hear it. It's all sort of going on but it doesn't happen to be coming out of the mouth. Because there are a lot of consequences to what the cases are. Whether something is nominative or accusative has all kinds of effects and

if a word is in a position where it can't have a case all sorts of things happen like the sense doesn't work or something. Pursuing that idea, as many people immediately started to do, it seemed to turn out that the case systems, even richer ones than Latin, are probably universal. That is, probably the mind is always hearing them. It is just that some are coming out of the mouth in different ways in different languages. In Chinese, at one extreme, they aren't coming out at all. In Sanskrit or Finnish which are at the other extreme they are coming out quite a lot. If you look at a richer array of languages like say the aboriginal languages of New Guinea you get very complex systems that make Sanskrit or Latin look very mild. But probably all of this is basically the same. And it's just coming out of the mouth differently.

Coming back to the question, is morphology part of the articulatory perceptual system or part of the syntax, well it is really both. Depends which part of the morphology you are looking at. If you are looking at the part which the mind is always hearing and it is involved in the computation, well, then, it is part of the syntactic system in a narrow sense. Whether it ever relates to the articulatory perceptual system, there languages vary. So they spell it out differently. And in fact it seems to turn out that a good deal of what appears to be the variety among languages is a consequence of the way it is spelled out. When things are spelled out in sounds that has a lot of effects on how the syntactic phenomena work out. Actually, this is something that was noticed hundreds of years ago back in the earliest days of the seventeenth century. People realized that the languages that have more explicit realized that the languages that have more explicit inflections, say, Latin, where you pronounce a lot of these things, are different from languages with less inflection, say, English, in that they have much freer order of words. So the word order in Latin is much more free than the word order in English. In English it is pretty rigid, in Chinese it is very rigid, in Latin it is fairly free. Spanish and Portuguese sort of in the middle. And it was noticed of what was called richness of inflection relates to freedom of word order. It is intuitively obvious why this should be the case. The pronounced cases express relationships. So even if the words are not next to each other you would know that they are related because of things you see in the inflection. When you get to languages that don't pronounce these things you have lost it. There are some languages like for example some of the American Indian languages, Navajo is a well studied example, where it seems that all the syntax just involves features, inflectional features which sometimes come out as inflections, and the nouns are all in the outside so you sort of do all the computation just with rather abstract features like number and tense and

case and so on and then the nouns that are in the outside and the pronounced part is rich enough so you know which noun goes with which thing on the inside. That is a kind of extreme variation. But morphology is turning out to be a very interesting topic because of things like these and also because of the things I've mentioned that it seems to be the case and if it is true it will be an interesting discovery that the semantically uninterpreted morphological features are there only in order to implement the displacement property which is needed for other reasons. If that turns out to be true, it will be pretty interesting.

5. A gramática gerativa tomou alguma contribuição das pesquisas de Piaget com relação à linguagem? Como o senhor vê hoje a posição de Jean Piaget com relação à dicotomia linguagem e estrutura cognitiva? Fale um pouco sobre a sua discussão com Piaget nesse sentido.

There is some lasting contributions of Piaget's work whatever people ultimately decide about his particular theories. He opened up new ways of experimenting with children's knowledge. So he developed a lot of experimental ideas about what you could study with children and what you might look for when you are studying what children know about things. That was very important and it has led to very important work and in a way you could say that a good deal of contemporary experimental psychology, cognitive psychology, having to do with children's knowledge and conceptual development has its origins in the descriptive work that Piaget did years ago and which then worked in to modern cognitive psychology. So that's unquestionable.

On the other hand, if you look at the actual theories that Piaget proposed, especially his ideas about what was asked about here, his ideas about the relation between language and cognitive structures, they haven't stood the test of time very well. Piaget had two central ideas. One is that cognitive development goes through various stages, so a one-year-old can do certain kinds of things, and a four-year old other kinds and a ten-year old different kinds of things. And that at each of these stages there are some sorts of structural operations that are possible. And the stages differ and that different structures are available. That's the first idea.

The second idea is that at each stage the mind is uniform. So it's just the same operations that are available for everything. So a seven-year old uses the same operations for language and for recognizing objects in the

visual space, for example.

Those are the two basic ideas. Neither of them seems even remotely close to the truth. The idea of the uniformity at particular levels, I don't think that anybody believes that anymore, you can hardly find anyone who believes that. It looks as if the mind is what is called "modular". Meaning has many different sub-systems, which means it's like everything else in the universe. I mean you cannot find a complex organism, even an amoeba, which doesn't have sub-systems that just work in different ways. If you look at the part of the human body apart from the brain, so, below the neck, of course it consists of different sub-systems. So the circulatory system works differently from the kidney, which works differently from the liver, and the immune system is another kind of system, and so on. Any complicated system will have sub-parts that just do different things. And it would be an amazing miracle if the most complicated object in the universe, namely the human brain, were somehow homogeneous, and had just one way of doing everything. There's nothing known like that in the organic world, and it's certainly not true of the brain either. So, there are special subsystems which work for different things. By now even something is known about their neurology but certainly their properties are very different. The visual system and the language system work in completely different ways. They are alike at some level, but that is the level of cellular biology, where they are also like the kidney. But there isn't going to be any seery of mental organs, any more than there's a seery of physical organs. They are what they are, they fall together at the level of cellular biology and then whatever general principles there are in biochemistry apply to all of them.

So that idea has just, really, collapsed. That idea, incidentally, was shared with behaviorism. So, Piaget and B. F. Skinner were really at opposite extremes in psychology in those years, but they both agreed that the mind is uniform, just one homogeneous thing, with general mechanisms for doing everything. From a biological point of view that would be almost inconceivable, and everything we know indicates that it's wrong.

What about the stages? Well, it's certainly true that a ten year old knows different things from a one-year-old, but what's happened over the years is that as people have developed more sophisticated ways of studying what a child knows it turns out that the things that were assumed to, that Piaget and others thought were acquired later are actually there very early. And in fact the better the experiments become the earlier it turns out to be there. So, the

stages have basically collapsed. If you do the experiments properly the kinds of things he was looking for you can find at the earlier stages. In fact, almost as early as you can begin to do experiments. By now there are very good techniques for experimenting with very young infants, a few days old, even a few minutes old. Some very surprising things are coming out.

On the other hand, there was a logical problem in Piaget's theory, which the Geneva School was never willing to face. People kept asking them about, if you read that conference you see that it keeps coming up over and over, but they never faced it. The logical problem was the following. Let's assume Piaget's theory. Let's suppose it's right. How do you get from one stage to the next? So, take a child in the stage before conservation. So, you have a tall pitcher of water and you pour it into a big wide one, and if the child knows about conservation it will know that there's the same amount of water in both. But in the pre-conservation stage, according to the theory, the child will think that there's more water in the tall one than in the low one. Actually, as I said, that turns out not to be true when you do the experiments properly, but suppose it were true. How would the child get from the pre-conservation stage to the conservation stage? Something has to happen to make that transition occur. Well, what could happen? One possibility is the child got more information. But that's inconsistent with Piaget's theory, because if the child had gotten more information in the earlier stage than the stage would have been earlier, and it wouldn't be a stage. It would just be a matter of how much information the child had. So, it's not from the external environment. It's supposed to be some internal change that's taking place. Well, how does an internal change take place? Well, there's only one way we know of, outside of miracles. It's in the genes, somewhere. In the genes we can have even maturation, that takes place late in life, but it's still genetically programmed. I mean, puberty, for example, takes place well after birth. But it takes place because of something in the genetic program. In fact, even death is programmed. You are designed in such a way so that you die at a certain time, roughly. It may vary, but it is within a certain range. And that's part of the genetic program. So, any form of maturation that takes place, any transition from one stage to another is somewhere represented in the genes. Human infants acquire binocular vision - using both your eyes to see something - at about four months. Well, that's change from one stage to another, but everyone assumes it's part of the genetic instructions. Nobody knows what it is, but you just take for granted that that's what it is. Well, let's hook in the mental side of the thing that's called innatism. Which is just being rational, as far as I can see. But innatism was considered a great sin in

the Geneva school. You can't be an innatist. But now you've eliminated all hope. You can't have genetically determined maturation, you can't have information from the environment, so the transition from one stage to another is a miracle. Obviously, that can't be right. The Geneva School never faced this.

There's a kind of side comment that might be made. That has to do in part with the tradition of European higher education, which is very hierarchical. Not in the hard sciences, like in physics. In physics you couldn't even exist if you were like that, so in the physics it's like everywhere else. But when you move outside the hard science, the European system of education which was carried over to Latin America, as you know, unfortunately for Latin America, is a very hierarchical system. The Professor is some kind of a god and people copy down what the professor says, and then you tell somebody else. Well, there's never going to be any progress that way. I mean, it's inconceivable. The way progress comes about is when students get up and tell you you are wrong. You made a mistake, so you start thinking about it and you find out it's a mistake. Like Jean Roger Vergnaud who I mentioned was a former student of mine. So, he wrote me a letter saying: look, you made a mistake, there's a much better way to do it. Ok, that's the way progress is made. And in the sciences this is just taken for granted. No one even raises a question. But in the humanities and psychology and the social sciences it's not true to anything like the same extent. So it's possible to have very serious errors which just perpetuate for ever, because nobody ever asks a question, you know. "Le patron" said something, so you don't question. And that's what happened, in this case. I think there are some lessons there about education generally. But anyway: that was an impossible situation, and it couldn't last. And to summarize: the particular theories that Piaget developed are not really tenable, I don't think, you can't really accept them and I don't think people working in the field do accept them. On the other hand the kind of investigation that he pioneered, that he developed, they turned out to be very fruitful.

6. Se o léxico é parte da gramática, porque dizer que a semântica está na interface e não dentro da gramática? E as informações pragmáticas codificadas na língua, também não estariam na gramática?

Well, let's look in the way the system is in the head. There's a language faculty in there, somewhere. More or less the way your kidney is inside your body. The kidney has to interact with other systems, so the kidney has

to interact with the circulatory system, has to interact with the digestive system, and so on. So, some things are in the kidney, if you look at it there's a system, some things are inside it, and some are outside it, but it's interacting with all the other organs. Now when you really think about an organ seriously, the kidney example is rather misleading, because a lot of the organs of the body you can't remove. I mean you can remove the kidney from the body and it's still there, maybe it doesn't work very well but it's still there. On the other hand you can't remove the circulatory system from the body and still have a body. The circulatory system is everywhere. To remove the circulatory system you have to remove every cell, so you can't remove the circulatory system. You can't remove the immune system, that's just a part of the cells, but it's still a system. And the immune system interacts with other systems.

The language system is that part of the whole mental apparatus that is producing expressions of a language, is producing expressions like my last sentence which had a certain sound and a certain meaning. If the language system was just sitting there alone, with nothing else interacting with it, you wouldn't even know you had a language. Like may be for example apes actually have the language organ but they just don't have any system that accesses it, so may be its churning away somewhere there but they can't do anything with it. That's not true, but you could imagine it being true. Humans have other systems, like the articulatory system and the systems by which we organize our experience, let's say, our visual experience. And these systems have some kind of access to the language system. That's how we use language to convey our thoughts. We can externalize them through the sensory motor articulatory apparatus and someone else can pick up the noises in the air from their perceptual apparatus and we have a mode of organizing thought which enables us to think thoughts that we can convey to others who then can think more or less the same thoughts. Because the language interacts with their systems.

Now, what's in the language and what's outside it? Well a typical expression with articulation, that's what's in the language. So take the semantics. Is it at the interface or is it in the lexicon? Well, the systems of thought have to know what the linguistic expression means. And I have a way of thinking about the world. Say, I look out I see the world organized in a certain fashion and my mode of organizing that visual impression has to be able to interact with the expression produced by my language which says "there are people in the room". I had to do that. So, the semantics has to be at the interface. I mean, otherwise I could never think. My expression would

never have a thought associated with it. Is the semantics in the lexicon? Well, the lexicon has the features, that is, the properties that are going to be interpreted at the interface. So that if I say "book", let's say, the lexicon contains those features which at the thought level, at the interface level, will be understood. And it will understand not only those features but also the way they are organized. So a sentence is a complex organization of things, and at the semantics side of that will have to be interpreted, and not only the features, but the way they're arranged, and their connections, and so on. The semantics is in the lexicon in the sense that the elements are there, but it's also at the interface because that's where they are interpreted. The same is true of the sound system. The word "book", there's got to be something about the word to tell me that in English it's going to come out good and in Portuguese it's going to come out - pardon my pronunciation - it's going to come out "livre" or something like that. Something about the word has to tell me that those two concepts come out differently. And that's the phonetics properties from the lexicon. Now, suppose somebody asks, "Are the phonetic properties in the lexicon or at the interface with the articulatory organs?" Well, both. There's something in the lexicon which is going to tell the articulatory organs "do so and so". And it's going to tell the perceptual system: "Do so and so with what you hear". So it's in both places.

With regard to the pragmatic properties, the pragmatics has to do with the way in which the language system is used. To do this, it's going to have to know what the properties of the language system are. You can't tell how a hammer is used unless you know what it is. You have to know you can't use it as a tooth-pick, let's say. Because you have to know what it is to know how to use it. And language is kind of a tool, in some sense. And the way it is used, which pragmatics tries to study, depends on its phonetics, on its syntax and on its semantics. All of those properties enter into the way the language is used. So pragmatics is some part of the mind that knows how to use things that have particular sound, meaning and form. Well, the study of that is pragmatics, and it's coded in in the same way. It's kind of a step removed from the syntax, more than the semantics is, because it uses the semantic interpretations. So it uses the thought processes to talk about how to ask a question, let's say, or how you talk to someone. You talk to different people in different ways, so pragmatics deals with those questions. But it uses all of this.

Is pragmatics codified in the internal system? Well, you know, that's a question for discovery. You can't stipulate this. It is the way it is. May be so,

may be not. So may be the ways you talk to different people is codified in the formal system. Actually, in some languages we know that it is partially true. So, for example, take the Japanese, where there are a lot of ritualized ways of talking to people depending on how they stand relative to you in a hierarchy of authority. We do this in every language, but in Japanese it's highly formalized. You talk differently to someone who is above you than to somebody who is below you. In Portuguese you have that too, don't you? O senhor and você. So, that's a way to expressing these differences, you see, you talk to a child in one way, and to the President of the university in another way. In Japanese it's highly formalized, and there are little particles, kind of inflections, called honorifics, and you put them in places, depending on your relationship to the person you are talking to. There, part of the pragmatics, meaning, how you talk to people, is formalized. It's marked internally. How much more is marked, we don't know. It's certainly true of different styles of speech including pronunciation, it's certainly in there, somewhere. Even the pitch of the voice differs. So people typically speak to a child with a higher- pitched voice. When you talk to your own child the pitch of your voice goes up.

Languages differ strikingly in characteristic pitch. I have a daughter who is bilingual in Spanish and English. Even if I don't hear what's she is saying I can tell which language she is talking in just by the pitch of her voice. If she is talking Spanish the pitch of her voice is higher, in Nicaraguan Spanish, at least, because women there tend to speak in a higher pitch than they do in the United States, and she just kind of automatically switches up and back. So something is coded in the actual language system that is related to complicated social arrangements and so on. OK so it's there. But these are things you have to discover, you can't make pronouncement about it.

2. E-Mail Questions¹

1. Does non-verbal thought exist? In what moment does it translate into language?

There is no scientific knowledge about these questions. What we know is derived from introspection, intuition, and other such sources. Your guess is as good as anyone else's. My own guess is that there is nonverbal thought. Ordinary experience is hard to understand on any other basis. To take only

¹ The e-mail questions, attached to the text, were asked at the end of the conference, and answered by the lecturer via e-mail.

one example, it is a common experience to say something and realize that it is not what one meant, so there must be something that one “meant” but didn’t say. Sometimes it takes a number of trials before what one meant is captured; sometimes it never happens, and we know it. It seems, then, that we are thinking something nonverbally and trying to capture it in words.

The concepts themselves are so obscure that it is hard to formulate a question that can be seriously investigated. For example, what is thought? Some day, perhaps the issues will be clarified. But for now, it is mostly mystery.

2. How do you understand the relation between language processing and memory?

Language processing requires access to language knowledge, but of course much more. It may involve special processing strategies that are not strictly speaking part of the language (in the narrow sense of I-language). And it requires a memory. There are many examples of processing breakdowns as a result of memory structure and limitations, the classic example being multiple center-embedding. So the relation is that processing requires memory, and it remains a topic for research to find out what that memory is, how it is used, whether it is specific to language, and so on.

3. What is the position of the lexicon in the minimalist program? And what is the importance of syntactical information that the lexicon sends to the grammar?

The issue is far from settled. My own assumption is that the lexicon has a rather traditional flavor: it is “the list of exceptions”, in traditional terms. For the word “book”, for example, the lexical entry will indicate its phonological and semantic properties, with their arbitrary association. Any properties that are predictable by general rule will not be in the lexicon. Same with other items.

But that is only my view. Others disagree, for example, my colleagues Morris Halle and Alec Marantz, who have been developing a theory of “late insertion” and “distributed morphology” that has no lexicon in the sense just indicated; rather, several distinct systems that provide the lexical information at different points in the computation. Personally, I am not convinced that real empirical issues have been presented, but that is probably

a minority opinion.

Either way, the lexical entries must provide all properties that are used by the computational system, which converts them ultimately to interface representations. The features accessed by the non-phonological part of the computational system are what are called “formal features”. There are many interesting questions about these, some of which I discussed in my talk. But remember, these are open questions, and there is ample room for debate and exploration.

4. What is your evaluation of sign languages, that is, the structure of languages based on the visual-gestual channel?

The evidence seems to be very compelling that sign languages involve the same “language organ” that is used for spoken language. Of course, there are also differences; the sensorimotor systems allow different options. The inquiry into these matters in the past few years has been very revealing, and I am sure there is much more to be discovered.

5. Is there a proof that all native speakers really possess the same level of competence in their language?

In empirical inquiry, the word “proof” is out of place. There are proofs only in mathematics. So what we should be asking is whether there is evidence that everyone possesses the same level of competence. But there is a problem with this formulation too. The notion “level of competence” is undefined, and in fact, seems to be an amalgam of two quite distinct notions of “competence”.

There is a technical sense of the term, in which it is used to refer to a state of the language faculty. It is just another way of referring to I-language, or the state of having a specific I-language. In this sense of the term, we cannot speak of “level of competence”.

There is also an informal sense of the term “competence”, in which it used to mean something like ability. There is no doubt that people differ greatly in their ability to use the resources of the language — some are poets, others are not. But even here, the notion “level of competence” is out of place. There are too many dimensions. A great poet may lack the competence for ordinary conversation, for example. In brief, the question requires a good

deal of clarification before it can be dealt with seriously. Too many factors enter into it, and they have to be sorted out.

6. Why did you say that there is no X-bar level?

On minimalist assumptions, we would expect that X-bar theory should not exist, because it violates what is sometimes called “the inclusiveness condition”: the condition that the computation should not introduce features that are not already present in the lexicon, but should be restricted to the assembling and rearranging of features of the lexicon. That would surely be “better design”. Whether the expectation is fulfilled, however, is another matter. I think perhaps it is, for reasons I have discussed in several papers: *Bare Phrase Structure*, and chapter 4 of the collection, *The Minimalist Program*. But many outstanding linguists disagree, and they could well be right. It is an open question how well language satisfies principles of “good design” — that is, to what extent the minimalist intuitions are correct.

7. Why is not binding internal to the theory?

Same as 6. If binding theory is internal to the computation, then indices or something similar are required, violating the inclusiveness condition. There are some empirical arguments in chapter 1 of “Minimalist Program” attempting to show that we can sustain the preferable assumption that binding theory is external. And there are some arguments in chapter 3, towards the end, arguing further that we can even extend descriptive and explanatory adequacy by assuming better design, in this sense. But again, it is an open and controversial question.

8. If I quite understood, government does not exist, c-command is an unnatural condition, the bar levels should be erased and the old PS rules eliminated. Does it mean that there is no structural organization of the sentences? How should I deal with the ambiguity of the sentence “flying planes can be dangerous?”

On minimalist assumptions, government, the bar-levels and PS rules should not exist. These assumptions may or may not be correct. As for c-command, it has always seemed highly unnatural, but as Samuel Epstein has pointed out, it becomes quite natural on minimalist assumptions, if we take literally the derivational approach. On this view, c-command is the relation that holds between X and the parts of Y when X is merged with Y

(and conversely, between Y and the parts of X). It is therefore a relation that is induced in a very natural way by the computation itself.

Of course, this is not quite traditional c-command. Thus if X is merged non-cyclically — i.e., it is merged with Y that is part of a larger structure Z — then there is no c-command relation between X and the parts of Z that are outside of Y. That fact has been used as an argument to show that merger must be cyclic (which means that Move-alpha also must be cyclic). The proposal was worked out first by Hisa Kitahara (a graduate student of Epstein's at Harvard) if my memory is correct, and is discussed in his doctoral thesis, some papers, and a forthcoming book. But even if we assume all of this, we do not conclude that there is no structural organization of sentences. Rather, there is structural organization, but it does not involve categories other than the lexical items and the syntactic objects constructed from them by Merge and Attract. In the case of “flying planes can be dangerous”, there are no nodes NP or VP, etc., but the structural organization is there, as required, stated simply in terms of the categorial features of the lexical items and their combinations. The details are worked out in the papers cited earlier (*Bare Phrase Structure*, chap. 4 of *The Minimalist Program*).

9. The analytical representations of Universal Grammar (Language Faculty) have been becoming, in the model, each time more abstract. Would it not be too much to expect that principles so much abstract could explain (restrict) all the observable linguistic patterns? Would there not be a kind of “gap” between these two levels? If it is so, without taking into account the contribution of other factors (socio-historical, usage etc.) on linguistic behavior, how is it possible to make secure assertions about the power of determination (restriction) of the language faculty on linguistic behavior?

If I understand correctly, there are two questions here: (1) Is it “too much to expect” that principles of the kind postulated will account for the possible structures of language? (2) “How is it possible to make secure assertions” about the way the language faculty determines linguistic behavior?

The only way to answer question (1) is by pursuing the inquiry into universal grammar (UG). I agree that it would be extremely surprising if UG turned out to have the properties of “good design” that motivate the minimalist program. To put it figuratively, it amounts to something like the claim that language is more like a snowflake than the neck of a giraffe, looked at in

evolutionary terms. That would be very surprising, no doubt, therefore very interesting insofar as it is true.

As for question (2), it is not possible to make secure assertions about these matters. The normal “creative aspect of language use” lies well beyond any inquiry of the kind that we call “science”. The same is true of the use of the visual system, the motor system, and so on. We may be able to say some things about what people are likely to do or say under particular circumstances. For example, you could have predicted that I would not answer this question with a report on today’s weather in Boston. But I know of nothing serious to say about these matters. That remains true if we take into account socio-historical and other factors.

10. In Brazilian Portuguese, subject - verb inversion is in general not allowed. However, it does yield grammatical results, both in declaratives and interrogatives, when the verb is an unaccusative. Given the minimalist program, can a given class of verbs be “marked” in any way as to **ALLOW** for the subject to have its case checked covertly? (this is not obligatory, since both subject-verb and verb-subject orders are possible with unaccusative verbs). Subject-verb inversion is ungrammatical, as a rule, with all other verbs, with the subject checking its case overtly in [spec,tp] (or[spec, agrp]). Note that Belletti’s (1988) proposal, partitive case, is not applicable here.

The question can only be answered by a closer look at the facts. The description here, if I understand it, takes Brazilian Portuguese to be essentially like French in these respects (and, virtually, English, except that in English the object of an unaccusative is actually extraposed, I think, for reasons I cannot discuss here — they are in “chapter 5”, still unwritten). If so, then there would be no reason to assume mechanisms richer than those of chapter 4, hence no special marking for verbs beyond [+/-accusative]. But perhaps I did not understand the point.