Exolinguistics:
the state of the art

(First appeared in ***OMNI*** 6:11 (August, 1984):93.)

Richard Warner
warnerr@home.com

In a recent interview (**Omni**, Nov. 1983), Noam Chomsky expressed his view that humans are unique in their ability to use language. As far as this planet is concerned, few linguists would disagree. But Earth is, after all, a frighteningly small part of the cosmos, and it's not implausible that other organisms Out There somewhere use language. In fact, I rather suspect that they do.

But if so, what are they like? What kinds of weird symbolic systems might they use? What medium of communication (telepathy, pulsed radar emissions, or something else, totally beyond human imagining) do they favor? And how can we, bound to this one small planet and (with a couple of feeble exceptions) its ambient space, possibly imagine anything about it? Well, linguists have learned a lot about the way languages work Down Here. If we apply the 'Principle of Mediocrity'--the assumption that, in the absence of evidence to the contrary, the same rules apply throughout the cosmos--linguistics can make some plausible claims about what a non-human language, used by tool-using, social intelligences, might be like. This enterprise is what I am calling **exolinguistics**.

One claim we can make is that exolanguages will probably use sound as a transmission medium, simply because of sound's special physical properties--it propagates well in almost any fluid (liquid or gas), it goes around corners, and it is easily produced by almost any kind of mechanical energy. On the other hand, we know enough about the physical properties of neural transmission (its extremely weak amplitude, in particular) to virtually rule out the use of telepathy as a reliable channel of communication. In addition, any species using a language will probably also possess the capacity to develop and use tools. This would follow from what we know of our own evolution: judging from fossil evidence, our

species developed the two capacities simultaneously, with each feeding the other.

Most interestingly from the linguistic point of view, an exolanguage will probably share a number of structural similarities with human language. For example, such a system will almost certainly exhibit **compositionality**. This property enables our finite brains to produce an indefinitely large number of messages by using a limited system of rules (a **grammar**) to combine a relatively small number of simple 'chunks' (like sounds) to form larger, more complex units (like words). Different human languages exploit this principle in different ways, but all use it.

A very interesting empirical question is whether human languages, as a class, exploit it in a way different in principle from all exolanguages. Chomsky claims that they do: that exolanguages, used by creatures with different genetic endowments than our own, might be so different that they are unlearnable by human beings. If in fact human language have properties not implicit in the uses to which people put language, he could be right. But there are no uncontroversial examples of such properties.

A critic might say that we know too little to make any confident claims about exolanguage. And, of course, that critic would be correct--we only know one language-using species, after all. But he or she would also be missing the point. At this stage of the inquiry, lacking data, we can only suggest the sorts of questions that more fortunate researchers--those who have actual aliens to work with--might reasonably ask. This has, admittedly, only limited immediate value. But the inquiry has another value for mundane linguistics. By speculating about exolanguage, we gain a perspective on the central questions of linguistics: what is language, what does it mean to know one, and what does language do for us as human beings? If exolinguistics can give us a fresh way of looking at language--we can expand, at least in our minds, the nineteenth century notion of comparative linguistics to a truly cosmic scale--then we might get some fresh, exciting answers to these questions.