Letters

Language Unexplained

The relationship between language skills and biological development shows that language learning is dependent on the effects of physical maturation. It is also true that normal children universally learn the language that their parents speak. Children acquire the rules of grammar (syntax) and vocabulary necessary to communicate adequately within their social setting. Because of this Lenneberg has postulated that man has a unique, biologically endowed system for language learning ("On explaining language," 9 May, p. 635).

It might also be postulated that man has a highly complex information gathering, storing, and retrieval system which can be used for problem solution and problem generation. It may be conceived of as the common property of man, monkey, dolphin, and so forth, to generate learning sets (*1*) which can operate in many sense and response modes. Language generation and decoding are therefore examples of mankind's ability to solve complex problems, use rules, and respond to complex perceptual patterns which he shares with other organisms.

It is unfortunate that a biological approach to language learning should ignore a large body of literature which demonstrates that more experience with language skills can improve intelligence scores and academic performance and that environments deficient in early language experience can be detrimental to later language development (*2*).

PAUL W. DIXON
Department of Psychology,
University of Hawaii,
Hilo Campus, Hilo, Hawaii 96720

References

1. H. F. Harlow, *Psychol. Rev.* **56**, 51 (1949).
2. W. Fowler, *Psychol. Bull.* **59**, 116 (1962).

Dixon's is the predominant view of American psychology on language. It maintains that language learning is merely another example of the acquisition of learning sets, and the implication here is that the generation of learning sets is a well understood "property," constant over the animal kingdom, and easily measured (as if it were weight or water content). However, I take issue with this assumption. A rhesus monkey forms a learning set when faced with one series of tests but appears as unintelligent as a guinea pig when faced with another series. The formation of learning sets has a prerequisite: the task must be suitable to the specific abilities of the species that we are testing. If our aim is to show growth of "general problem-solving ability" in different species, we must adjust the setting to each type of animal; that is, we must use different types of problems, different sorts of stimuli, accept different types of responses, and use different criteria for learning. My claim for language is that it constitutes a task in which a specific problem is posed, involving specific stimuli, calling for specific responses, and using specific criteria for accomplishment. Only man has the abilities to cope with these particular specificities. If we wish, we may give the same label to this accomplishment as to those observed in animals put into special apparatus; but this will not alter the objective differences between language in man and discrimination behavior in other animals. Consider also that there is no single criterion that can be used to identify species. This means that evolution is characterized by constant change of direction. There is not a single property that changes regularly in magnitude as we move from one species to the next (not even complexity, however defined). Because of this constant change, I doubt that the "generation of learning sets" is a monolithic property common to man and all animals.

No doubt one can suppress language as one can suppress any other aspect of ontogeny; nor is there any argument that the performance on IQ tests improves with improved language abilities. This is necessarily so because IQ tests use language as a vehicle. Biology is not concerned with either of these phenomena. It is concerned exclusively with the underlying capacities for language, and this is the reason that the literature Dixon refers to has not been mentioned in my article.

ERIC H. LENNEBERG
Department of Psychology,
Cornell University, Ithaca,
New York 14850

Talk Time

Verbal communications are shaped by many events and may fluctuate qualitatively or quantitatively on the basis of time. Only those directors of federal projects who are located in the eastern time zone have temporal correspondence with Washington, D.C. Theoretically, there is a "temporal gap" between geographically remote project directors and officials in Washington who hold important decision-making powers. Assuming a standard 8-hour day, 40-hour week, and 12:00 to 1:00 lunch period, the West Coast project director has but 3 hours daily "talk time," and of 240 working days per year, he loses 150 of the available "talk" days! Certain questions arise: (i) Does time differential (TD) magnify alienation between local and Washington-based agency officials? (ii) Does it create a geographic selection factor relative to awarding of grants? (iii) Does the unavailability of top Washington officials contribute to deviations from established guidelines (possibly a positive event)? (iv) Does TD preclude development of effective nationwide systems of information exchange? (v) Is much time now lost waiting for "time windows"? (vi) Since distance is irrelevant in the jet age, would time zones be an effective way of organizing regions for government operations? (vii) Does TD encourage travel, hence absenteeism?

In view of the foregoing, some schedule changes appear in order. In Wash-