A STOCHASTIC MODEL OF SPEAKER SWITCHING IN NATURAL DIALOGUE

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Presented at the Conference on Verbal Behavior, New York City, September 1965. This research was supported in part by the following grants from the National Institute of Mental Health: MH-04571-05 to The William Alanson White Institute, and a General Research Support Grant to College of Physicians & Surgeons of Columbia University.

One of the most obvious and therefore neglected features of ordinary dialogue is its gross temporal pattern. People in unemotional conversation rarely talk simultaneously. Vocal activity oscillates periodically from one participant to the other and then back again. We shall henceforth refer to this phenomenon as speaker switching. The vocalization of one speaker suppresses that of the other almost completely, and such reciprocity is analogous to the phenomenon of "territoriality". It partitions the time continuum into the action domains of the respective speakers. The phenomenon is popularly recognized in metaphor when we say that a speaker "has the floor." Linguists have used the switching demarcation to define an "utterance unit" as "those chunks of talk that are marked off by a shift of speaker" (Fries, 1952). It has also been suggested that the phenomenon may represent a genuine language universal (Miller, 1963).

Informal observation will also verify that the boundaries of these "utterance territories" in the time domain are often blurred. That is, there is rarely a sharp transition from the vocalization of one participant to that of the other. A switch generally occurs only after an intervening pause, suggesting that an interval of silence is required to transform a listener into a speaker. This bridge of silence at the switching point is in a sense a "no-man's land" (or else joint property), lying between the activity domains of the two speakers. One would surmise that such a switching pause largely represents a reaction time for the subsequent speaker, and that its onset would have been a clear "end of message" signal on the part of the preceding speaker.

Closer examination of an utterance also reveals brief silences, usually shorter than switching pauses, which break the sound pattern into