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SOME SIGNALS AND RULES FOR TAKING SPEAKING TURNS IN CONVERSATIONS[1]

STARKEY DUNCAN, JR.[2]

University of Chicago

The turn-taking mechanism, whereby participants manage the smooth and appropriate exchange of speaking turns in face-to-face interaction, was studied. Three basic signals for this mechanism are described: (*a*) turn-yielding signals by the speaker, (*b*) attempt-suppressing signals by the speaker, and (*c*) back-channel signals by the auditor. These signals are used and responded to in a relatively structured manner, describable in terms of a set of rules. Behaviors in every communication modality examined—content, syntax, intonation, paralanguage, and body motion—were active as elements of the turn-taking signals.

E. Goffman (personal communication, August 7, 1969) has asked rhetorically how people manage to walk down the street without continually bumping into each other. Part of the answer is that in our culture there are rules for walking down the street and for managing situations in which individuals find themselves on collision courses. Goffman (1963) has suggested some rules for these situations.

Just as it is desirable to avoid bumping into people on the street, it is desirable to avoid in conversations an inordinate amount of simultaneous talking. Beyond considerations of etiquette, it is difficult to maintain adequate mutual comprehensibility when participants in a conversation are talking at the same time.

The fact that participants in a conversation tend to take turns in speaking and listening has been frequently observed and discussed by other investigators. Yngve (1970) has commented that this phenomenon "is nearly the most obvious aspect of conversation [p. 568]." Jaffe and Feldstein (1970) also refer to the saliency of turn taking and the importance of avoiding interruptions. They cite Sullivan (1947), who observed careful turn taking in conversations between chronic mental hospital patients, and Miller (1963), who suggests that turn taking is a language universal. Kendon (1967) deals in detail with the role of gaze direction in turn taking. Schegloff (1968) proposed the "basic rule for conversations: *one party at a time* [p. 1076, italics in original]," and discussed some implications of this rule. Leighton, Stollak, and Ferguson (1971) found more interrupting and simultaneous talking in the interaction of families waiting for psychotherapy than in the interaction of "normal" families.

The question may be asked, again rhetorically, how participants in a conversation can avoid continually bumping into each other in a verbal sense. The thesis of this paper is that there is a regular communication mechanism in our culture for managing the taking of speaking turns in face-to-face interaction (Goffman, 1963). Through this mechanism, participants in an interaction can effect the smooth and appropriate exchange of speaking turns. (The term "turn taking" has been independently suggested by Yngve, 1970, and by Goffman, personal communication, June 5, 1970).

The proposed turn-taking mechanism is mediated through signals composed of clear-cut behavioral cues, considered to be per-

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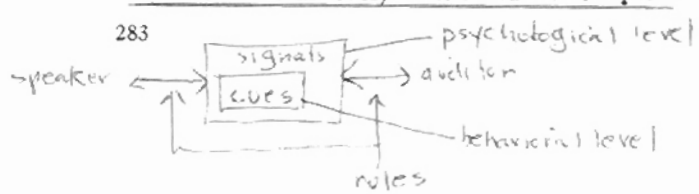
[2] Requests for reprints should be sent to Starkey Duncan, Jr., Department of Psychology, University of Chicago, 5848 South University Avenue, Chicago, Illinois 60637.



ceived as discrete. The turn-taking signals are used and responded to according to rules. Signals, cues, and rules are described in detail below.

Turn taking is considered to be one of a number of communication mechanisms, such as those discussed by Scheflen (1968), operating in face-to-face interaction. These mechanisms serve the function of integrating the performances of the participants in a variety of ways, for example, regulating the pace at which the communication proceeds, and monitoring deviations from appropriate conduct.

Goffman (1955) commented on these integrating mechanisms in general and on turn taking in particular:

> In any society, whenever the physical possibility of spoken interaction arises, it seems that a system of practices, conventions, and procedural rules comes into play which functions as a means of guiding and organizing the flow of messages [p. 226].

The notion that a set of rules operates to integrate the turn-taking behavior of participants in a conversation is supported by Jaffe and Feldstein (1970), who also studied temporal patterns of speech and silence in dyadic conversations. Although they limited their data to the information provided by a "pair of voice-actuated relays which treat any sound above threshold as equivalent [p. 113]," their findings suggested to them

> further interactional rules that govern the matching of speech rates of the participants, the prohibition of interruption, and the requirement for properly timed signals that acknowledge understanding and confirm the continued attention of the listener [p. 6].

SOURCE OF DATA

Interviews

The results to be reported were based on meticulous transcriptions of speech and body motion behaviors during the first 19 minutes of two dyadic interviews, as recorded on videotape.

The first interview was a preliminary interview held at the Counseling and Psychotherapy Research Center at the University of Chicago. This preliminary interview is part of the routine intake procedure at the Counseling and Psychotherapy Research Center, and the client was a regular applicant for therapy. A preliminary interview was chosen for intensive transcription of communication behaviors because within a rather compressed period of time a wide variety of types of interaction may be encountered, from simple information giving, such as address, etc., to more emotionally laden discussion of the client's reasons for applying for therapy. At the same time, there is a strong intrinsic motivation for the interview, namely, an application for therapy, thereby avoiding the more artificial experimental situation in which unacquainted subjects are brought together and asked to discuss anything which might be of mutual interest.

The client was in her early twenties, working as a secretary, and had not completed college. The therapist-interviewer was a 40-year-old-male, an experienced therapist, who had been doing preliminary interviews for many years.

The second interview was between the therapist who participated in the first interview, and a second male therapist, also 40 years old. The two therapists were good friends and had known each other for about 10 years. Their interaction was relaxed and lively. The topic in this case was another client whom the first therapist had seen in a preliminary interview, and whom the second therapist had at that time seen in therapy for two interviews.

The preliminary interview is designated at Interview 1, and the second, peer interaction, is designated as Interview 2. The client is designated as Participant A; the preliminary interviewer, B; and the second therapist, C. Thus, the participants in Interview 1 were A and B, and the participants in Interview 2 were B and C.

Videotaping

To videotape the interactions, the camera was placed so that both participants in each interaction were fully visible from head to foot on the tape at all times. No zoom techniques or other special focusing effects were used. A single camera was set up in full view of the participants. The camera and tape were left running prior to the participants' entry into the room and were not touched again until after the interview.

Despite the fact that a wide-angle lens was used, the camera was necessarily at such distance from the participants that more subtle details of facial expressions were not discriminable on the videotape. Less subtle expressions, such as broad smiles and grimaces, were readily discernable. In contrast, very small movements of the hands and fingers, for example, were clearly evident on the tapes, so that fine discriminations of these movements could be made and were on the transcription. A high-quality monophonic, audiotrack was obtained on the videotape.

Transcription

For this study, the principal requirements for the transcription were those of maximum behavioral breadth and of continuity (no breaks or interruptions). Maximum breadth is desirable in analysis because it is not yet known which behavioral cues are the primary mediators of any given communication function. Continuity of transcription permits

the complete analysis of sequences of events: the basic concern of this study.

In terms of size, two 19-minute transcriptions of interaction are simultaneously very small and very large, depending upon one's perspective. From the point of view of the wealth of communication engaged in each day by an individual, the transcriptions are quite brief. On the other hand, these transcriptions are believed to be unique in their breadth and duration. As described below, there was a detailed transcription of English segmental and suprasegmental phonemes, paralanguage, and body motion of both participants in the two interviews. The time involved in making the two transcriptions was great, involving the better part of 2 academic years.

Phonemes

Segmental phonemes. Transcription of segmental phonemes, which describe the way syllables are pronounced within the framework of the English sound system, followed the scheme developed by Trager and Smith (1957). The segmental phonemes were the least important components of the study.

Suprasegmental phonemes. The suprasegmental phonemes are commonly referred to as intonation. They include the phenomena of stress, pitch, and juncture.

The Trager-Smith scheme for transcribing suprasegmental phonemes was used, with minor modifications identical to those described in previous studies by the present author (Duncan, Rosenberg, & Finkelstein, 1969; Duncan & Rosenthal, 1968).

Three terminal junctures—rising, falling, and sustained—were transcribed in accordance with the Trager-Smith system. These junctures are composed of contours of pitch, intensity, and duration occurring on the final syllable of phonemic clauses.

The point of departure for all subsequent analysis in this study was the phonemic clause (Trager & Smith, 1957). A phonemic clause is a phonological unit, defined by Trager and Smith as containing one and only one primary stress and one terminal juncture. Transcribing primary stresses and terminal junctures automatically identifies the phonemic clauses in a corpus.

Paralanguage

Paralanguage refers to the wide variety of vocal behaviors that occur in speech but that are not part of the sound system of language, as traditionally conceived. Comprehensive catalogs of paralinguistic behaviors have been compiled by Trager (1958), Crystal and Quirk (1964), and Crystal (1969). Any one speaker will probably use only a small fraction of the total behaviors available. The following list, which uses Trager's (1958) terminology, includes only those behaviors that play a part in the turn-taking signals: (*a*) intensity (overloud–oversoft); (*b*) pitch height (overhigh–overlow); and (*c*) extent (drawl–clipping of individual syllables). The terms in parentheses define the anchor point for each behavioral continuum. A wide variety of paralinguistic behaviors was actually encountered in the two dyads and included in the transcriptions.

Body Motion

In contrast to paralanguage, there was no available transcription system for body motion which could be readily applied to our videotapes. This situation led to a transcribing method based on the behaviors actually found in each interview. The transcription system for the first interview was created by first making an inventory of the movements used by the two participants and then assigning either arbitrary or descriptive labels to these movements. This system was then applied to the second interview, after expanding it to include new movements observed in the second interview.

While there is no pretense that the resulting transcription system is able to encompass all movements occurring in this culture, every attempt was made to include all movements observed in the dyads under study. The transcription was in this sense comprehensive. Included were (*a*) head gestures and movements (nodding, turning, pointing, shaking, etc.) and direction of head orientation; (*b*) shoulder movements (e.g., shrugs); (*c*) facial expressions, such as could be clearly seen; (*d*) hand gestures and movements of all sorts (each hand transcribed independently); (*e*) foot movements (each foot independently); (*f*) leg movements; (*g*) postures and posture shifts; and (*h*) use of artifacts, such as pipe, kleenex, papers, and clipboard.

Coordination of Body Motion and Speech Transcriptions

Speech syllables were used to locate all transcribed events. Thus, the movements of both participants in an interview were located with respect to the syllables emitted by the participant who happened to be speaking at the time, or to the pause between two syllables.

THE TURN-TAKING MECHANISM

The variables for the turn-taking mechanism were formulated as signals by which each participant indicated his state with regard to the speaking turn. Given the display or absence of a given turn-taking signal by one participant, rules delimit the appropriate responses by the other participant.

The rules and signals, considered together, establish empirical expectations with respect to turn-taking activities at any given moment in a conversation, assuming that the participants in the conversations under analysis are rule abiding for the most part. Data relevant to evaluating the turn-taking mechanisms are presented in the Results section.

Definitions

Definitions of "speaker," "auditor," and "simultaneous turns" are required to begin. A *speaker* is a participant in a conversation who claims the speaking turn at any given moment. An *auditor* (Kendon, 1967) is a participant who does not claim the speaking turn at any given moment.

In general, with the help of the turn-taking mechanism, the turn need not be disputed in the course of the conversation. However, when both participants claim the speaking turn at the same time, then the state of *simultaneous turns* obtains in the conversation and the turn-taking mechanism may be said to have broken down, or perhaps to have been discarded, for the duration of that state.

The term "simultaneous turns" is used here instead of the more usual term "simultaneous talking" because there will be certain circumstances, described below, in which talking by the auditor, even simultaneously with the speaker, does not imply a claim for the speaking turn. Therefore, the two terms should be differentiated.

When simultaneous turns occurs, the auditor attempts to take his turn, and the original speaker continues with his turn. The turn-taking mechanism is not designated to explain how the state of simultaneous turns is resolved, that is, which one of the two speakers will continue and which one will fall silent. Meltzer, Morris, and Hayes (1971) reported some interesting findings, based on techniques of "social psychophysics [p. 401]," on one mode of resolution.

Just as both participants may become speakers, claiming simultaneous turns, both participants may also become auditors, not claiming a turn. In this case, the obvious result is silence for the duration of that mutual state. The phenomenon—apparent avoidance of the turn by both participants—was not observed in the two interviews analyzed for this study and thus will not be discussed in this paper.

Turn Yielding

Rule

The auditor may take his speaking turn when the speaker gives a turn-yielding signal. Under proper operation of the turn-taking mechanism, if the auditor acts to take his turn in response to a yielding signal by the speaker, the speaker will immediately yield his turn.

A state of simultaneous turns can be created in two ways: (*a*) if the auditor attempts to take his speaking turn in the absence of a turn-yielding signal by the speaker or (*b*) if the speaker displays a yielding signal, and the auditor acts to take his turn, and the original speaker then continues to claim his speaking turn. Neither of these sequences of events will occur in an interaction when the participants are adhering to the turn-taking mechanism.

The auditor is not obliged to take his speaking turn in response to a regular turn-yielding signal by the speaker. The auditor may alternatively communicate in the back channel (Yngve, 1970) or remain silent. (Portions of the back channel are briefly described below.)

Signal

A turn-yielding signal for a speaker is described as the display of at least one of a set of six discrete behavioral cues. These cues may be displayed either singly or together. When displayed together, they may occur either simultaneously or in tight sequences.

The six turn-yielding cues are listed below.

1. Intonation: the use of any pitch level–terminal junction combination other than *2 2|* at the end of a phonemic clause. Following the Trager-Smith (1957) notation, the *2* refers to an intermediate pitch level, neither high (*3*) nor low (*1*). The single bar juncture "|" at the end of the clause refers to a sustention of the pitch at the level previously indicated. Thus, *2 2|* refers to a phonemic clause ending on an intermediate pitch level, which is sustained, neither rising nor falling, at the juncture between clauses.

A frequent pattern of phonemic clauses in American English is a series of *2 2|* clauses, which terminates in a final clause with a rising or falling pitch level–juncture combination. Any of these rising or falling combinations qualifies as a regular turn-yielding cue. A phonemic clause containing one of these

rising or falling combinations is referred to as a "terminal clause."

2. Paralanguage: Drawl: drawl on the final syllable or on the stressed syllable of a terminal clause.

3. Body motion: the termination of any hand gesticulation (Kendon, 1967) used during a speaking turn or the relaxation of a tensed hand position (e.g., a fist) during a turn.

To account for the gesticulations observed in the two interviews, it is sufficient to define gesticulations as those hand movements generally away from the body, which commonly accompany, and which appear to bear a direct relationship to, speech.

Specifically excluded from the definition of gesticulation are self-adaptors and object adaptors (Ekman & Friesen, 1969). Self-adaptors involving the hands are movements in which the hand comes in contact with one's own body, often with the appearance of grooming. Examples would be rubbing the chin, scratching the cheek, smoothing the hair, brushing off the pants leg, picking lint (real or imaginary) from the socks, etc. Such self-adaptors are very frequent for many individuals both while they are speakers and while they are auditors. For present purposes, the definition of object adaptors is construed more narrowly than in Ekman and Friesen's definition. Movements considered to be object adaptors in the first interview were those movements having to do with Participant B's maintaining his pipe, and some movements in which the paper on his clipboard was wrinkled. Highly similar behaviors, termed "self-manipulatory gestures," were also studied by Rosenfeld (1966).

4. Sociocentric sequences: the appearance of one of several stereotyped expressions, typically following a substantive statement. Examples are "but uh," "or something," or "you know." The three participants varied in the particular expressions used and in the frequency of their use. They were most common for the client. They were generally preceded by other yielding cues, and were often accompanied by a marked paralinguistic "trailing off" effect. The term sociocentric sequences was coined by Bernstein (1962), who commented on these expressions in another context. These expressions do not add substantive information to the speech content that they follow. Instances in which the auditor proceeded to take his speaking turn during the completion of a sociocentric sequence are not considered as a state of simultaneous turns in the conversation. Rather, such an act is considered to be an instance of permissible simultaneous talking.

5. Paralanguage: Pitch/loudness: a drop in paralinguistic pitch and/or loudness in conjunction with one of the sociocentric sequences described above. When used, these expressions typically followed a terminal clause but did not often share the same paralanguage.

6. Syntax: the completion of a grammatical clause, involving a subject–predicate combination.

Attempt-Suppressing Signal

Rule

An attempt-suppressing signal displayed by the speaker maintains the turn for him, regardless of the number of yielding cues concurrently being displayed. Auditors almost never attempted to take their turn when this signal was being displayed.

Signal

The attempt-suppressing signal consists of one or both of the speaker's hands being engaged in gesticulation. Self- and object adaptors do not operate as attempt-suppressing signals. Dropping of the gesticulating hand or hands into a rest position, as on the arm of a chair, constitutes a turn-yielding cue (see 3 described above). It should be noted that much speech is not accompanied by gesticulation, and therefore neither the attempt-suppressing signal nor its coordinate yielding cue would be applicable for that speech.

Back-Channel Communication

Rule

The term "back channel" was introduced in the context of turn taking by Yngve (1970) to cover such messages as "mm-hmm" and head nods from the auditor. In this sense, the term is roughly equivalent to

Kendon's (1967) "accompaniment behavior" and Dittmann and Llewellyn's (1968) "listener response."

For the purposes of this study, it is sufficient to point out that a back-channel communication does not constitute a turn or a claim for a turn. To the contrary, it appears that, when a speaker is displaying a turn-yielding signal, the back channel is often used by the auditor to avoid taking his speaking turn. In this sense, taking a turn and communicating in the back channel may be considered to be contrasting tacks an auditor, faced with a yielding signal, may take.

It is important to note that, because back-channel signals do not constitute a turn or a claim for a turn, their display by the auditor simultaneously with the speaker's speech is not considered to be a state of simultaneous turns in the dyad.

Signal

It is suspected that back-channel communication comprises a large and complex set of signals, which at present may not be well understood. These signals may participate in a variety of communication functions, including the regulation of speaking turns. It is proposed that "back channel" be expanded to refer to this broader class of signals, as it is progressively documented.

In addition to the back-channel signals such as "mm-hmm," "yeah," and head nods mentioned above, the following back-channel signals were observed in our interviews: (*a*) sentence completions, in which the auditor completed a sentence that the speaker had begun (independently reported by Yngve, 1970); (*b*) brief requests for clarification; and (*c*) restatement in a few words of an immediately preceding thought expressed by the speaker.

Unit of Analysis

In order to subdivide the interviews, a unit of analysis was chosen which in size lay between the phonemic clause and the speaking turn. Every cue display and every instance of smooth exchange of turns or simultaneous turns occurring in the interviews was located with respect to these units. As with the yielding signal, the unit was defined in terms of the display of at least one of a number of behaviors in syntax, intonation, paralanguage, and body motion.

Specifically, boundaries of the units were defined as being (*a*) at the ends of phonemic clauses (*b*) which additionally were marked by the display of one or more of the floor-yielding cues described above, and/or by the display of one or more of the following cues.

1. Unfilled pause: an appreciable unfilled pause following the phonemic clause.

2. Head direction: turning of the speaker's head toward the auditor. This cue is identical to the speaker's part of the gaze-direction pattern discovered by Kendon (1967).

3. Paralanguage: a drop in paralinguistic pitch and/or loudness in conjunction with a phonemic clause, either across the entire clause or across its final syllable or syllables.

4. Body motion (for Participant A only): a relaxation of the foot from a marked dorsal flexion. (Throughout the interview the client's legs were stretched out in front of her and were crossed at the ankle.) From time to time one or both feet would be flexed dorsally, such that they assumed a nearly perpendicular angle to the floor. Their falling, as a result of relaxing the flexion, was the cue.

Each of these behaviors appeared to play a part in the speaker's segmenting of his communication and in the timing and placement of the auditor's turn-taking and back-channel responses.

RESULTS

The rules for turn yielding and attempt suppressing lead to the expectations that (*a*) the occurrence of simultaneous turns will be associated primarily with the auditor's turn-taking attempts when zero yielding cues (i.e., the absence of a yielding signal) are being displayed by the speaker, and (*b*) display of the attempt-suppressing signal by the speaker will sharply reduce the auditor's turn-taking attempts in response to yielding cues. In addition, auditor attempts to take the floor appeared to vary as a function of number of yielding cues conjointly displayed. Data analyses are presented relevant to these three empirical issues.

Table 1, on which the analyses were based, presents the data, summed over the two interviews, for auditor turn-taking attempts and

TABLE 1

AUDITOR TURN-TAKING ATTEMPTS AND RESULTING SIMULTANEOUS TURNS AS A FUNCTION OF NUMBER OF TURN-YIELDING CUES DISPLAYED AND THE DISPLAY OF THE ATTEMPT-SUPPRESSING SIGNAL

Speaker yielding cue display		Auditor turn-taking attempt			Simultaneous turns resulting from auditor attempt		
	(A)	(B)	(C)		(D)	(E)	
N conjointly displayed	Frequency of display	*N*	*P*[a]	*SD*[b]	*N*	*P*[c]	*SD*[b]
No attempt-suppressing signal displayed							
0	52	5	.10	.04	5	1.00	.00
1	123	12	.10	.03	2	.17	.11
2	146	25	.17	.03	2	.08	.05
3	89	29	.33	.05	2	.07	.05
4	47	15	.32	.07	0	.00	.00
5	9	4	.44	.17	0	.00	.00
6	2	1	.50	.35	0	.00	.00
Σ	468	91			11		
Attempt-suppressing signal displayed							
0	56	7	.13	.04	7	1.00	.00
1	109	0	.00	.00			
2	138	0	.00	.00			
3	105	2	.02	.01	1	.50	.35
4	6	0	.00	.00			
5	3	0	.00	.00			
Σ	417	9			8		

[a] column B/column A.

[b] Standard error of the proportion $= \sqrt{\frac{PQ}{N}}$.

[c] column D/column B.

resulting simultaneous turns, in terms of (*a*) the number of turn-yielding cues conjointly displayed and (*b*) the display or absence of the attempt-suppressing signal. Percentages of auditor attempts in response to a given number of cues were calculated as the number of attempts divided by the number of displays of those cues. Percentages of simultaneous turns were calculated by dividing the number of simultaneous turns by the number of attempts.

The relationship between the display of zero yielding cues by the speaker and the occurrence of simultaneous turns resulting from a turn-taking attempt by the auditor may be tested by applying chi-square to Table 2, a 2×2 contingency table derived from Table 1 ($\chi^2 = 52.31$, corrected for continuity, $df = 1$. When $df = 1$, a chi-square of 10.8 has an associated probability of .001).

When no attempt-suppressing signal was displayed, the correlation between number of yielding cues displayed and percentage of auditor turn-taking attempts was .96 ($df = 4$). This correlation accounts for 92% of the variance. The analysis of variance for the regression is presented in Table 3. The *F* value for the analysis was 50.53. (When $df = 1/4$, an *F* value of 21.2 is significant at the .01 level of significance.) The data points and the regression line are plotted in the left half of Figure 1. It should be noted that the data point for the display of six cues was not included in the regression because there were only two such cases, thereby giving a relatively unreliable estimate for that point. It happens, however, that the data point falls precisely on the regression line, as may be seen in Figure 1.

The results on auditor attempts were sharply different when the speaker was dis-

TABLE 2

SMOOTH EXCHANGES OF TURNS AND SIMULTANEOUS TURNS RESULTING FROM AUDITOR'S TURN-TAKING ATTEMPTS IN RESPONSE TO THE SPEAKER'S DISPLAY OF ZERO YIELDING CUES AND OF ≥1 YIELDING CUES

No. yielding cues displayed	Smooth exchange of turns	Simultaneous turns
0	0	12
≥1	81	7

Note.—N = 100.

TABLE 3

PERCENTAGE OF AUDITOR TURN-TAKING ATTEMPTS IN RESPONSE TO NUMBER OF YIELDING CUES DISPLAYED: ANALYSIS OF VARIANCE FOR THE REGRESSION

Source of variation	*df*	*SS*	*MS*	*F*
Attributable to regression	1	.09367	.09367	50.53
Deviation from regression	4	.00741	.00185	
Total	5	.10109		

playing an attempt-suppressing signal along with his yielding cues. Data on auditor attempts in the presence of a suppressing signal are presented in the lower half of Table 1 and in the right half of Figure 1. With the exception of the display of zero yielding cues, the auditor attempt curve was virtually flat at 0%, with no increase of turn-taking attempts as the number of yielding cues increases.

DISCUSSION

The results reflect strong regularities in interview behaviors with respect to turn taking. It should be borne in mind that the data presented here were generated through the coordinated action of two individuals. As an integrating mechanism, turn taking appears capable of being remarkably successful in dyadic conversations.

The chance of simultaneous turns was sharply decreased when the auditor attempted to take his turn after the display of a yielding signal by the speaker. As more yielding cues were conjointly displayed, the probability of a turn-taking attempt by the auditor increased in a strictly linear fashion.

On the other hand, the display of an attempt-suppressing signal essentially eliminated the auditor's tendency to take his turn, regardless of the number of yielding cues concomitantly displayed. Because the auditor's attempts were so thoroughly suppressed by the signal, it was not possible to infer from the data the likelihood of simultaneous turns resulting from turn-taking responses to the suppressing signal.

It should be noted that the display of any number of yielding cues by the speaker, in the absence of a suppressing signal, did not automatically result in an attempt by the auditor. At best, the probability of an auditor attempt appears to be about .50. Thus, the auditor retains considerable discretion over his responses.

Either the speaker or the auditor may disregard the turn-taking mechanism, so that a state of simultaneous turns is produced. In the present data the occurrence of auditor turn-

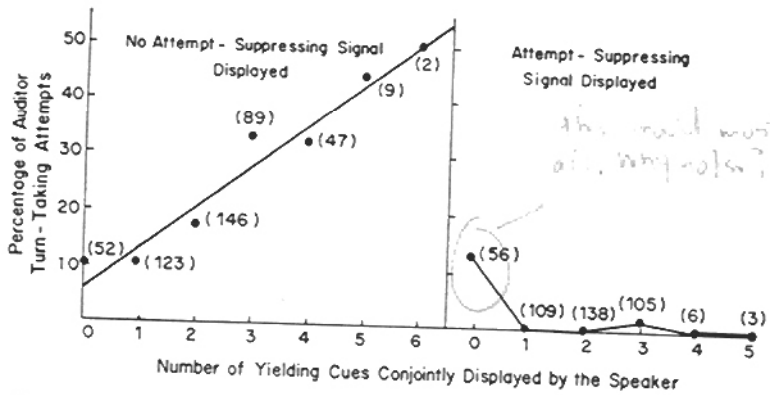


FIG. 1. Auditor's turn-taking attempts in response to the display of yielding cues and attempt-suppressing signals (*n*s are shown in parentheses).

taking attempts when zero yielding cues were being displayed may be straightforwardly interpreted as an interruption of the speaker. On those six occasions on which simultaneous turns were associated with the display of yielding cues by the speaker, the blame may be laid to him for not properly yielding when he had so signaled.

This study was based on two behaviorally inclusive transcriptions of dyadic face-to-face interaction. The emphasis on inclusiveness required joint consideration of the linguistic, paralinguistic, and body motion components of face-to-face interaction, as opposed to focusing exclusively on any one or two of these modalities. As mentioned above, this behavioral inclusiveness is desirable at this stage of our understanding of face-to-face interaction because it is not known a priori which behaviors in the stream of communication are the important cues for any given communication function.

A primary obstacle to research of this type is the laboriousness of making fine-grained transcriptions of multiple interaction behaviors. Despite the difficulty of the task, these detailed comprehensive transcriptions are valuable for their potential contribution to the discovery and documentation of various communication functions. It is important at this stage of research to be able to specify, quite accurately, what happens where in interactions. Considering the wealth of transcribed data on languages throughout the world, the raw transcribed data available on face-to-face interaction in its broader aspect are deplorably scant.

Once important signals are identified for any given communication function, further research on that function can proceed at a much more rapid pace. In Scheflen's (1966) words, the signals become "*recognizable at a glance and recordable with a stroke* [p. 277, original italics]." Accordingly, work is presently underway to transcribe the turn-taking signals (and a few other potentially significant behaviors) for brief sections of additional interviews. In this manner it is possible to capitalize on existing knowledge of turn taking, both to extend our understanding of it and to validate further our original findings.

The findings on the turn-yielding signal provide an example of the usefulness of behaviorally comprehensive research. The cues comprising this signal were found in every communication modality examined: content, syntax, intonation, paralanguage, and body motion.

The behavioral breadth in the yielding signal provides it with the desirable property of flexibility. No single communication modality is required in order to display a signal. The yielding signal may also be said to possess the property of generality, in that the cues for the signal are formulated in terms of general properties of behaviors, rather than specific acts. For example, it is not a specific intonation pattern that served as a cue, but simply any deviation from the 2 2| pattern; not a specific gesticulation, but cessation of the gesture, or relaxation of a tensed hand position; not a specific paralinguistic pattern, but a drop from the preceding pattern in pitch and/or loudness, and so on.

Further research is underway on various aspects of the turn-taking mechanism using our transcriptions. The distribution and functions of the impressively large and complex class of back-channel signals are being investigated. The notion of floor-requesting signals by the auditor, suggested by Yngve (1970), is being explored, including the possibility that there may in some sense be an ongoing negotiation for the floor by speaker and auditor.

By positing three types of signals and as many rules, a turn-taking mechanism can be described which accounts for extensive portions of the turn-taking behavior in the two interviews under examination. The overall strength of the results underscores the potential of further research on the rule-governed aspects of behavior.

The rules for turn taking were designed to be applicable across a wide range of individual styles and communication contexts. There is room for appreciable variation in their use. For example, variation may be found in the use of (*a*) the attempt-suppressing signal, (*b*) back-channel communications in lieu of turn-taking attempts, (*c*) the number of simultaneous turns created either by the speaker or by the auditor, and (*d*) the num-

ber of turn-yielding signals composed of large numbers of cues. If such variations actually exist, they may be related to other variables of interest. These variations in the use of basic structural elements of conversations may be the source of many of the subtle effects which, while difficult to specify explicitly, often have telling consequences on impression formation and on the developmental course of interactions.

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