THE CONSTRUCTION OF TURNS

AT TALK IN SOCIAL INTERACTION

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A B S T R A C T

Non-verbal cues to turn transitions are often studied in isolation from their linguistic substrate. It is argued that this produces a misunderstanding of the origin and action of 'turn-taking cues', and obscures the relationship of interactional process and switching style.

A series of studies are presented which explore these issues utilising dialogues from three married couples. The pattern of switching styles in the interactions are described together with an examination of patterns of gazing and a content analysis of talk. The role of gaze in the regulation of turn transitions is evaluated with reference to Kendon's (1967) 'look-up' cue. The speed of speaker switching was found to be increased only where 'looking-up' arose in the context of low levels of gaze, with no change of gaze state prior to the look-up cue itself. Relationships between this cue and linguistic features of utterance endings were also noted.

Further examination of this relationship is made through evaluation of the system of turn-yielding and maintaining cues proposed by Duncan (1972). Clause completion was found to be closely associated with the location of turn-taking attempts; other non-verbal cues tended to accompany this feature. Non-verbal behaviours were, however, important in differentiating (linguistically defined) intra- and inter-utterance boundaries.

Relationships between strategy and turn taking style are explored; variations in the frequency and class of interruptions were found in different strategic states. The relationship of switching style to interactional meaning is discussed and the concept of cohesion introduced. This feature,which addresses the textual continuity of talk, was found to be important to the perceived meaning of interruption sequences; the placement of interruptions either within or between boundaries in the speakers talk did not exert a similar influence. Behavioural consequences of cohesion were also evident.

These results are discussed and a model of turn-taking, together with its implications, presented.

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CHAPTER I

INTRODUCTION

Social interactions are both common and commonplace in the experience of almost all individuals, forming the basis for an almost endless variety of transactions. It is perhaps this very quality that has led to their neglect as an area of study; indeed as late as 1969 Argyle was able to refer to a 'new-look' in psychology that took such encounters as an area of concern. It may be possible to understand the roots of this developing interest with reference not only to an increasing dissatisfaction with previous areas of research (ibid) but also in the light of an increasing focus upon the individual that has had a pervasive cultural influence. The desire to understand behaviour which, for most individuals, is unproblematic in its performance, has continuities with phenomenological research (e.g. Shutz 1971) which suggests that common-sense understandings of behaviour inevitably conceal a striking complexity.

It is generally this 'taken-for-granted' quality of our behaviour which allows for the relatively smooth accomplishment of interactions across a variety of settings, aims and purposes. Often it is only when interactions are disrupted by unexpected or contra-normative events that these assumptions begin to be perceived (Berger and Luckman 1966). There is an expectation that encounters should proceed without exposure of their construction. Those individuals who do not achieve this sense of routine accomplishment are construed in current terminology as being socially 'unskilled' (Trower, Bryant and Argyle 1978), a term which itself has evolved from the perception of interaction as a skilled process requiring explication (Argyle and Kendon 1967). Increasingly it has become evident that amongst psychiatric patients there are a substantial proportion of individuals who may be characterised as having a rather poor social performance (Bryant et al 1976). The role of interpersonal factors in the aetiology and maintainance of psychiatric disorder has become a focus not only of research interest (e.g. Hooper et al 1977) but also of therapeutic practice. Thus both marital and family therapy take the form of interaction to be of

central concern in understanding psychopathology (e.g.Minuchin 1974, Satir 1964, Pincus and Dare 1978). More directly the area of 'social skills' training has had enormous impact upon current clinical practice (e.g.Bellack and Hersen 1979), with its emphasis upon the didactic and experiential modification of interaction patterns.

Such an endeavour presupposes that a technology exists for the modification of behaviour - an issue beyond the scope of this thesis - and most importantly that some understanding of the processes to be modified is available. As Trower (1980) notes there is a requirement for a "body of scientifically validated knowledge of normal social behaviour to provide training targets and assessment criteria" (p 327) in order that what is modified is appropriate to the problem of social inadequacy. In the absence of such knowledge clinicians will often "rely upon experience and intuition in deciding what skills should be taught, with the danger that wrong or irrelevant skills may be selected" (ibid). The analysis of social behaviour offers the possibility of providing an account for this purpose.

In attempting this analysis verbal and non-verbal components of behaviour are often distinguished, with the latter components exemplified by extralinguistic features of speech, gaze, gesture, posture and spatial features of interaction. It has been assumed that non-verbal elements have a greater salience in person perception and attitude formation than do verbal factors. Thus Argyle (1978) notes that "non-verbal signals have a far greater impact than verbal ones for assertiveness ... and friendship" (p 551). Such statements seem to be based on the results of experimental manipulations in which disjunctures between verbal and non-verbal behaviours are introduced. These studies tend to show that, given ambiguity, non-verbal signals are more commonly attended to in impression formation (e.g. see Argyle, Salter, Nicholson & Williams 1970, Argyle, Alkema and Gilmour 1972). However the experimental manipulation of channels of information may render more insight into the resolution of these discontinuities than it does into processes of person perception and rules of social interpretation.

This area of work has been influential in diverting the attention of psychologists away from a concern with verbal content. Thus Trower et al (1978) suggest that "non-verbal signals constitute a 'silent' or implicit message which ... operates outside of conscious control, in contrast to verbal language which is explicit and the focus of attention" (p 15).

This 'unconscious' quality is considered to underlie the power of non-verbal signals, and it follows that social skills training programmes place much emphasis on non-verbal behaviour (Argyle op cit) largely due to the special role that such features are considered to play in attitude formation. There is evidence to suggest however that the importance of language in the generation of social encounters has been underestimated. Trower (1980) analysed the social behaviour of two groups of psychiatric patients, one rated as socially skilled and the other as socially unskilled by a panel of judges. Standardised interactions between these patients and experimental collaborators were filmed, and measures of five components of behaviour "chosen for their known importance to social skills" (ibid p 330) were utilised. These were a measure of the duration of speech, the amount of looking at the other, smiling, communicative gestures and posture shifts. Differences in the frequency of these behaviours was observed between the skilled and unskilled groups, with the skilled patients tending to talk for longer, and to look, smile, gesture and shift posture more than the unskilled. In order to understand which of these behavioural components contributed towards the original rating of social skill a step-wise multiple correlation was carried out to find which combination of elements best predicted the criterion of social competence. The direct correlation of the amount of speech with ratings of social skill was 0.62 and 0.73 for the skilled and unskilled groups respectively. Whilst the amount of looking contributed substantially to the multiple correlation for socially skilled individuals (with a direct correlation of 0.45) it contributed little in the case of unskilled subjects (the direct correlation falling in this case to 0.17). Thus in judgements of a lack of skill the amount of talk was "overwhelmingly the single most important element" (ibid p 337).

Similarly Spence (1981) examined the behaviour of delinquent and non-delinquent boys, correlating behavioural measures with the subjective reports of their teachers. The latency of verbal response to elicitations correlated most highly with ratings of 'social skill' , 'employability' and 'friendliness' , followed (as in the Trower study) by the amount of eye contact. Only in assessment of 'social anxiety' did the amount of eye contact and other non-verbal measures (such as postural shifting) emerge as more significant than verbal measures. Bryant et al (1976) compared the behavioural ratings of psychologists (based on a structured interaction task) with overall ratings of social skill, finding high correlations between verbal elements and ratings of social skill. Thus of the seven behavioural elements with reported correlations, the first five relate to verbal features of the interaction (though the range in the size of the correlations was not marked).

Such results sound a cautionary note, since many investigators have assumed that non-verbal features of interaction are primary in impression formation and the management of encounters. Consequently as Kent, Davis and Shapiro (1978) point out, there has been a tendency to "neglect the central role of linguistic communication in social construction processes" (p 13). The analysis of specifically linguistic features of interaction falls more commonly to workers in such fields as applied linguistics (e.g. Coulthard 1977) or ethnomethodology (e.g. Sacks, Schegloff and Jefferson 1974), establishing a distinction in methodology and focus that acts to separate the levels of language use and non-verbal behaviour.

This split may be less than helpful in understanding the operation of these channels, since it can be argued that, with some exceptions, they usually act synergistically. Thus whilst there may be common instance of discontinuity as expressed in the concept of non-verbal leakage (Ekman and Friesen 1969), gross inconsistencies, as expressed in the double bind, might be seen as psychiatrically significant (e.g. see Sluzki and Ransom 1976). However, as Argyle (1969) notes "in general the non-verbal elements should be supportive of the verbal" (p 119). This conjoint action has rarely been explored sequentially within interaction. In part this seems to reflect the nature of linguistic and extra-linguistic data bases.

Language, as a serial phenomenon patterned across times, does not lend itself (in an unreduced form) to the same techniques of analysis as can be applied to the distribution of non-verbal behaviour, which is more discrete, and frequently may be treated as de-contextualised for the purposes of study.(1) In a sense this directs attention towards the components that comprise interaction rather than the process by which such elements are linked and inter-related. Thus features such as looks, nods, gestures or posture shifts have been examined in isolation from the processes by which such units of behaviour are located and assembled into recognisable sequences of interaction.

This sequential process is presumably controlled through the operation of some set of normative constraints which are rule-like in their operation, but which also contain within them procedures for social interpretation. Thus such rules must provide for a set of possible actions at any given moment, selection amongst which provides for interactional strategy, much as syntactic structures act to constrain the range of options available within language whilst not limiting the ideational possibilities of any given 'discourse'. It would seem that the investigation of sequential structures which would act to guide the process of interaction has largely remained within linguistics (e.g. Labov and Fanshell 1977, Mohan 1974, Sinclair and Coulthard 1975). Whilst attention has been drawn within social psychology to the requirement to consider interaction as a sequential structure, little empirical work has addressed itself to this issue.

Perhaps one of the most influential psychological models of interactional process is that advanced by Argyle and Kendon (1967), in which social skill is considered to operate much like a serial motor skill. Thus the individual is considered to act according to rules and under the influence of continuous feedback from the environment, modifying his/her behaviour in the light both of this perceptual input and under the influence of shifting motivations and a hierarchy of goals (see Figure 1).

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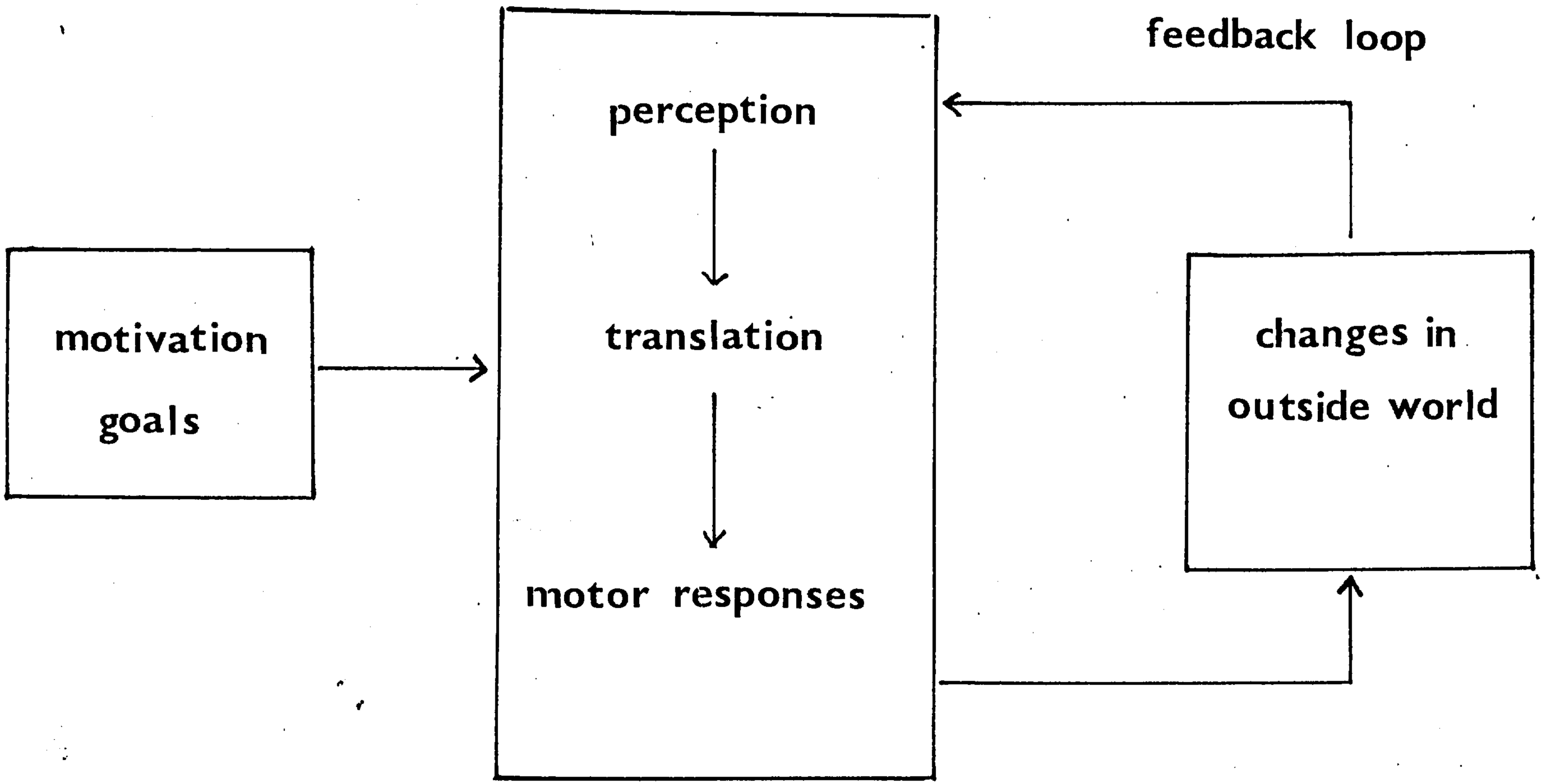
(1) There are clear exceptions to this statement: the work of Scheflen (1964) and others is clearly oriented towards a more 'syntactic' appreciation of non-verbal behaviour.

FIGURE 1: THE SOCIAL SKILLS MODEL (AFTER ARGYLE & KENDON 1967)



This model clearly stresses the role of rule-structured assembly of a variety of social behaviours; however, the thrust of much research places emphasis on the components of social interaction rather than the process of their placement into meaningful acts (Trower op cit). Addressing this issue requires consideration not only of the orderly construction of the behaviour of one individual, but the inter-dependency of this behaviour with that of co-participants to interaction. Such issues are elided by much of the considerable body of research generated by the social skills model, little of which is directed towards the problem of structure which the model itself raises. An analogy may be drawn with the state of pre-Chomskian linguistics, where in the absence of a guiding rule-system to establish the assembly of componential structures there was a concern with the components themselves, with their description and classification, and with the reduction of a serial process to discrete units (e.g.Carroll 1964, Denes 1963).

To an extent this mode of analysis reflects upon the experimental methodology of the social sciences, and the data base considered appropriate for analysis. The exploration of sequential structures within the constraints of statistical and experimental techniques presents considerable difficulties. Those studies which have attempted to work within such constraints often seem only to achieve a statistical description of patternings rather than resulting in an informative study of the process of interaction. Thus Mishler and Waxler (1975) attempted to extend their earlier (1968) work on interaction in schizophrenic families through a sequential analysis of the orderings of speakers. Whilst this resulted in some information as to the predictability of patterns of speaker turns within these families, there is little information as to the way in which such patterns emerged (see also Brenner and Hjelmquist 1974, Green and Jackson 1976). In response to this difficulty studies have tended more towards quantifiable and discrete features of interaction, with an attendant decontextualisation of behaviours. In contrast workers in what may be broadly regarded as an applied linguistic mode of analysis have been concerned precisely with the sequential structure of conversational interaction, but with the application of a methodology which does not lend itself

to statistical procedures. The choice of a naturalistic mode of dialogue for such studies reflects a relative lack of concern with experimental criteria such as reliability and replicability; in contrast the external validity (Cook and Campbell 1978) of the study seems to provide an organising principle, guiding investigators towards a corpus of naturally-occuring dialogue across a variety of participants and situations.

The separation of verbal and non-verbal elements therefore seems to have a methodological as well as theoretical basis. Through such separation an additional division emerges between a componential analysis of social behaviour and the understanding of how such components are organised through processes of social construction. Within social psychology the neglect of language - particularly of inter-relationships between language and attendant non-verbal behaviours - has tended to reflect a similar lack of attention towards the process by which behaviours are ordered sequentially.(1)

Any attempt to discuss process, however, requires some delineation of an area of study since the concept of social construction demands explication of the serial production of behaviour at any level of action. Thus even the relationship of semantic and pragmatic meaning is complex, as has been indicated by linguistic philosophers (e.g. Austin 1962), and accounting for the relationship of any two utterances presents investigators with difficulties (e.g. Labov 1972, 1977). Such issues are real and substantial, but may be 'glossed' (Garfinkel 1967) in order to attend to different levels of interactional organisation. One approach to investigation is to delineate a level of organisation that permits general psychological statements to be achieved, but which does not operate such a high degree of glossing that much of the process of interactional construction is 'taken for granted'. Such a level would be given by those structural features which are common to all encounters, such as opening and closing encounters (e.g. see Schegloff 1967, Schegloff and Sacks 1974), or achieving topic change (e.g. Sacks 1971). A number of recurrent features may be extracted for potential examination; perhaps one of the most

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(1) This neglect is not universal; a number of psychologists at Oxford have made this process an explicit object of study (e.g. see Clarke 1975, Collett 1977)

important of these is the continuous interchange of speaker roles that takes place between participants.

It is this feature, perhaps more than any other, which marks the achievement of a truly interactive state amongst participants, since it is only through such alternation that a reciprocity of behaviour may be achieved. As a process interactants seem to be sensitive to failures in its achievement, with all the implications of normative procedures that would be implied by such sensitivity (though see Clarke 1977). Thus Bryant et al (1976) found that a failure to provide for such turn transitions was highly correlated with behavioural ratings of a lack of social skill. Chapple and Lindemann (1942) considered that "one of the most characteristic diagnostic factors in schizophrenia is the blocking and latency of response (p 6)" This delay in the turn taking process was also noted experimentally by Matarazzo and Saslow (1961), who suggest that long latencies of response are pathognomonic of schizophrenia. Libet and Lewinsohn (1973) found that subjects diagnosed as depressed showed a similarly long latency of response, suggesting the value of delayed responses in turn taking as a clinical sign(though raising some doubts as to its specificity as a diagnostic aid).

Gross variations in the temporal patterning of turn transitions seem clinically noteable, and thereby are of clear social import. Equally the content of what is said across turns will be important. Thus Piaget (1926) has suggested that childrens speech resembles sets of collective monologues, and whilst more recent research suggests that this may not be an accurate account of their abilities (e.g. Mueller 1972, De Long 1974, 1977), such a description reminds us that it is not sufficient to describe merely the temporal separation of talk as interaction where it occurs without some implication of mutual communicative intent, and the communication of that intent. Talk with others is not generally characterised by egocentric sequences of talk placed side-by-side, but by a continuous interchange of speaker and auditor roles, with feedback as to the success of the communicative endeavour, but no explicit verbal directives as to role change. The achievement of this procedure is fundamental to interaction, yet is simultaneously so commonplace as to be taken for granted. The manner in which

participants to interaction achieve the placement of their talk so as to 'mesh' together represents the structural substrate for their meeting and reflects a basic problem of social co-ordination.

Within an apparently simple and repetitive process are therefore incorporated a number of substantive, methodological and practical concerns. The co-ordination and achievement of orderly turn transitions represents a fundamental process of interaction, presumably governed by social constraints, and open to social interpretation through variations in its performance. Thus the form of speaker switching has formed the object of much attention in studies of family communication and pathology (e.g. Mishler and Waxler 1968) and in studies of attitude formation (e.g. Ferguson 1977). The management of this process will be crucial to the form of encounter resulting.

Such competence cannot, however, be reduced to a facility in the temporal placement of talk, since as suggested above, turn transitions represent points of meshing both in achieving a separation of talk and a continuity of content - without some reference to this latter feature there would be little sense of co-ordination. Reference to the fairly substantial literature in this area suggests that the methodological divisions between social psychological and linguistic approaches tend to distinguish these very areas, such that whilst social psychologists have evidenced considerable concern for the achievement of temporally separate utterances, they have paid little attention to what relationships exist between the utterances of co-participants. A similar but opposite pattern of neglect is generally apparent amongst linguists; thus whilst each set of researchers is (necessarily) concerned with the social construction of turns at talk, there is a sense in which the methodological constraints discussed above intrude to restrict the adequacy of the accounts offered by research in each tradition.

It will be argued in the literature review following this chapter that the restricted focus of each discipline has led to an impoverished understanding of the process of turn construction, and that the importance of this process in the construction of inter-actional meaning has thereby been underestimated. Both linguistic

and non-verbal features of behaviour have been identified as influential in the management of speaker selection and exchange. Attempting to understand their inter-relationships not only promises insight into this process, but also offers a model for the conjunction of aspects of interaction which have frequently been treated as making rather separate contributions to encounters.

CHAPTER II

LITERATURE REVIEW

As has been indicated the study of conversation covers a number of disciplines; in this review some attempt will be made to collate studies with similar concerns.

(1) STUDIES OF THE STRUCTURAL ACHIEVEMENT OF TURN TAKING

The following studies attempt, in the main, to account for the conditions under which speaker change occurs recurrently; as such they are concerned with the synchronisation of the speech flow between interactants. Generally this concern has restricted itself to dyadic interaction, particularly where non-verbal behaviour is examined (e.g. Duncan and Fiske 1977). Whilst certain systems (e.g. Sacks, Schegloff and Jefferson 1974) are intended to be applicable to larger groups, it is generally the case that the dyad has been the focus of most theoretical and research activity.

The major theoretical contributions in this field have been made by the two sets of researchers referenced above; whilst it is the case that a considerable body of work has been completed by others, only these investigators have attempted a systematisation of the turn taking process. Their work however is distinct, and there are no points of contact between the two. Sacks et al focus exclusively on the linguistic 'channel' of speech, whereas Duncan et al are concerned with the non-linguistic vocal and kinesic channels. A recent review of turn-taking (Rosenfeld 1977) suggests that the orderly sequencing of turns is influenced in 'large part' by the signals carried in non-verbal channels. Whilst noting the organising role of linguistic patternings, Rosenfeld also notes the isolation of these two levels of concern (p 293). For the purposes of discussion this artificial separation will be maintained, with a consideration of the role of extra-linguistic control functions preceeding elaboration of linguistic factors in turn taking.

(a) Non-verbal behaviour and the regulation of speaker switching

In a series of studies (Duncan 1972, 1973, 1975, Duncan and Nederehe 1974, Duncan and Fiske 1977, Duncan, Brunner and Fiske 1979) Duncan and his co-workers have presented a model of the turn taking

process that might best be described as a content free, structural system in which a series of signals act to indicate the readiness of both speaker and auditor to maintain or change their respective roles. The data base for Duncan's early work comprised two nineteen minute sections of dyadic interaction. One of these was a psychotherapy interview, and the other a discussion between the therapist from the first interview and a second therapist. A later corpus (Duncan and Fiske 1977) used to validate and replicate the earlier work, was obtained from six five-minute interactions between previously unacquainted graduate students. These interactions were extensively transcribed for their phonemic structure, paralinguistic features and non-verbal behaviour. Adopting a correlative approach, Duncan attempted to isolate those features recurrently associated with turn switches, and by which "each participant indicated his state with regard to the speaking turn " (Duncan 1972 p 285). The identification of a system of 'cues' allows for the specification of conditions under which smooth switching, can occur. In the system these arise as a consequence of three events; firstly the speaker displays an appropriateturn signal, following which the previous auditor switches to the speaker state, claiming the speaking turn, and in a complementary shift the speaker switches to the auditor role, thereby relinquishing the turn (Duncan 1973). This form of transition is in contrast with a simultaneous claiming of the floor, termed 'simultaneous turns' where

> " ... the previous speaker may fail to relinquish the turn after displaying a turn signal, and (after) the auditors subsequent claim of the turn. Or the previous auditor may suddenly interrupt by claiming the turn in the absence of the speaker's turn signal" (1973:33)

The notion of simultaneous turns distinguishes simultaneous speech arising from joint claiming of the turn from that arising as a consequence of auditor behaviour which does not challenge the speakers turn, but seeks to accompany it. These 'back channel' behaviours (Yngve 1970) are most commonly considered to comprise such expression as "Mmmhmm" and brief restatements, and head nods and shakes (Dittman and Llewellyn 1968; Rosenfeld 1977). Yngve (op cit) also includes requests for clarification, sentence completions and sentence completions within this category though

this is an extension with which Duncan and Nederehe (1974) found it difficult to distinguish auditor turn claims from back-channel responses: a clear conceptual and operational distinction seems difficult to achieve. Certain authors such as Kendon (1967) have adopted the criterion of utterance length, treating all utterances longer than five seconds as a turn. Whilst this definition leads to a gain in reliability, it does not satisfy the problem of achieving a clear distinction between turns and back channels, and such criteria as intonation and pitch together with content may be required in assessing the form of listener response (Rosenfeld op cit).

Analysis of Duncan's dialogues suggested that six 'turn-yielding' cues were regularly associated with the presence of an auditor turn claim, and that these ' discrete behavioural cues ... may be displayed singly or together' (Duncan 1972 p 287). The signals thus identified were:

1: Intonation: the presence of intonation at phonemic clause boundaries characterised by a terminal juncture combination other than |22| , where |22| refers to a phonemic clause ending on a sustained intermediate pitch level (Trager and Smith 1957, cited in Duncan 1972).

2: Drawl: the presence of drawl on the final syllable, or on the stressed syllable of a terminal clause, where a terminal clause is defined by either rising or falling intonation.

3: Sociocentric sequence: the presence of one of several stereo-typed expressions, typically following a substantive statement, such as "you know", "but ah" (etc).

4: Pitch/loudness: a drop in paralinguistic pitch or loudness in conjunction with one of the sociocentric sequences; when used these expressions typically followed a terminal clause, but did not often share the same paralanguage.

5: Syntax: the completion of a grammatical clause containing a subject-predicate combination.

6: Gesture: the termination of any hand gesticulation used during a speaking turn, or the relaxation of a tensed hand position during a turn, but excluding self and object adaptors (Ekman and Friesen 1969)

Duncan examined the probability of a turn-taking attempt at the end of units of speech, the boundaries of which were defined by the end of a phonemic clause marked by the display of one or more of the above 'turn-yielding' cues, and/or the display of one of the following characteristics:

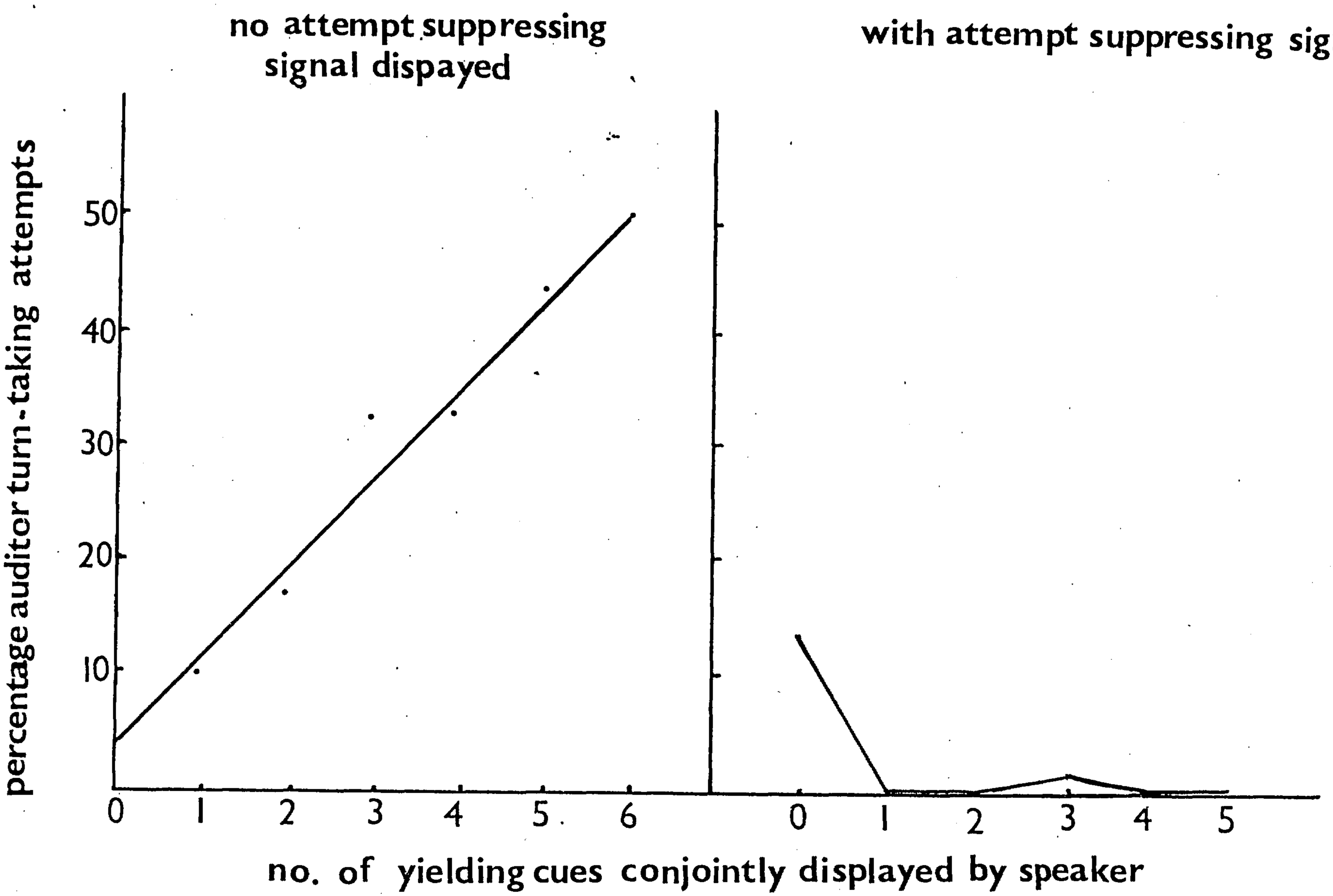
1: An unfilled pause
2: Turning of the speakers head towards the auditor
3: A drop in paralinguistic pitch and/or loudness, either across the entire clause or its final syllable
4: In one of his subjects the relaxation of the foot from a marked dorsal flexion.

Duncan found that the correlation between the number of turn-yielding cues displayed and the percentage of turn-taking attempts was 0.96 (1972 p 289) where this display arose in the absence of the 'speaker gesticulation signal'. This cue, constituted by one or both of the speakers hands being engaged in gesticulation (again excluding self or object adaptors) reduced the probability of turn taking attempts in the presence of turn-yielding cues almost to zero. Where no cues were displayed the rate of turn-claims was almost as frequent whether the speaker gesticulation was present or absent, and in almost all cases the resulting switch was accompanied by simultaneous speech (see Figure 2).

It is important to note that the six yielding cues are considered as independent, contributing to a linear and incremental relationship between the number of cues displayed and the probability of an auditor turn claim. Thus Duncan (1975 p 305) states that "no unique combination of cues and no single cue indispensible to the cue clusters could be found in displays prior to auditor responses".

A further set of signals are identified as indicating the intent of the speaker and auditor either to continue in the speaker role or to initiate a turn, with some interplay between the cues. These signals seem to elaborate the more direct turn-allocatory cues described above. Duncan suggests that an inter-relationship between these signals exists, and this may be described (in a highly schematised fashion) as follows. The 'speaker within turn' signal was found to precede 88.8% of vocal and visual back channel responses arising at or immediately after the boundaries of units of analysis defined above. This signal consists of two cues: a shift in head

FIGURE 2: AUDITOR TURN-TAKING ATTEMPTS IN RESPONSE TO THE DISPLAY OF YIELDING CUES AND ATTEMPT SUPPRESSING SIGNALS (AFTER DUNCAN 1972)



direction towards the partner, and/or the completion of a grammatical clause.

Once having elicited such a response (which in some sense might be seen to require some indication of the status of the speaker role) the 'speaker continuation signal' is displayed to reduce any potential ambiguity. This cue comprises a shift in head direction away from the auditor, and seems to arise most frequently in response to the display of the speaker within turn signal, or to a back channel response from the auditor arising immediately prior to the boundary of the units of speech described on page 14 of this review. The display of this behaviour seems therefore to mark the initiation of a new unit of speech.

Finally a 'speaker-state' signal is proposed to distinguish between auditor back channel responses, and turn claims (Duncan and Nederehe 1974), and marks the point at which a participant shifts from the auditor to the speaker state. In earlier work (Duncan and Nederehe op cit) this signal was held to comprise four cues, of which only the first two listed below were found to be operative in the later replication studies (Duncan and Fiske 1977). These cues are:

(1) Shift of head direction away from the speaker
and/or (2) Initiation of a gesture, excluding self and object adaptors
and/or (3) Audible inhalation
and/or (4) Paralinguistic overloudness.

In both sets of studies a high percentage of turn beginnings were marked by one or more of these behaviours, whilst few back channel interjections were initiated in this way. By assigning values of +1 to each of the speaker state signals and -1 to each turn yielding one, Duncan and Nederehe (op cit) were able to 'predict' the outcome of simultaneous speech; the participant with the greater sum took the floor in 18 of 19 occasions examined.

Duncan's work comprises a major and complex contribution which rests on a lengthy and technical analysis of dialogue. It is perhaps for this reason that no complete replication of his work has been attempted, a factor which makes interpretation of the generality of his system difficult. The correlative methodology adopted suggests that recurrent but idiosyncratic features (as arise in the definition of speech units, see page 14) have the potential for inclusion. More

significantly however such a research design cannot speak to the intentionality of speaker 'cues'. Grice (1957) suggests a distinction between natural and non-natural meaning, in which only the latter term denotes some intentional transmission of information, such as would be implied in such phrases as the 'activation of turn cues' (see Duncan and Fiske op cit p 198 and elsewhere). The association of a particular behaviour with turn endings does not necessarily indicate that that behaviour is intended to play a turn allocatory role by the speaker. This important point will be considered elsewhere in this thesis (see particularly Chapter 6); for now its methodological and substantive implications are merely noted.

Close examination of Duncan's data, as presented in his studies, suggests that certain claims of the system are unjustified. Beattie (1981 A) notes that the high correlation of 0.96 between the number of turn yielding cues and the probability of a turn taking attempt presented in the 1972 paper is based on the single auditor response to the two occasions on which six cues were displayed. This data point is clearly unreliable, and were no auditor response to have arisen the above correlation would have fallen to 0.21. Further it is difficult to account for any presentation of six cues, since strictly speaking socio-centric phrases cannot complete a grammatical clause, and therefore both events should not be present at turn endings. It would seem that this cue is intended to be assigned either to the preceeding or subsequent clause; this therefore introduces some confusion into the definitional independence of the cues.

Examination of the frequency of multiple yielding cue displays suggests that the display of five or six cues is very rare; indeed in replicating their work Duncan and Fiske (1977 p 192) found no instances of displays of six cues, and only 4% of all speech units contained more than three cues. The linear relationship between cue display and turn-taking attempts therefore seems unreliable, since it is only at lower levels of cue display that the data base seems firm, yet it is by virtue of higher levels of cue clustering that the strong linear relationship obtains.

Whilst Duncan claims that no distinct cue combination was apparent within his data, Beattie (op cit) in an examination of turn transitions within six dyadic conversations found that 61% of all switches were associated with syntactic clause completion, and that 95% of these switches were accompanied by terminal intonation patterns. The close inter-relationship of these cues, together with their frequency, would seriously undermine the claims made for the independence and linear additivity of the yielding signals. The importance of syntactic features implied by this result might also focus attention on the role of linguistic rather than extra-linguistic factors in organising turn transitions, a proposition which receives attention in Chapters 5, 6 and 7 in this thesis.

Studies which attempt to systematically investigate the deficiencies noted above have not been carried out, and rather few partial or direct replications of Duncan's work have been attempted. Those that have been reported seem more concerned to challenge specific aspects of the theoretical position advanced by Duncan than to consider the adequacy of his formulation. La France (1974) examined ten minutes of dyadic interaction between black speakers. Certain differences in behaviours associated with turn transitions were noted, particularly

1) The use of parenthetical comments following the completion of a grammatical clause

2) The use of other-directed gaze by the speaker immediately prior to and during the turn transition (see Kendon 1967 , and discussed below)

3) The use of a more specific set of intonation patterns in which only a $\lfloor 2 \quad 1 \rfloor$ pattern was associated with turn transitions.

In addition to these specific features a clearer patterning of auditor behaviour was apparent in which body movements signalled the imminence of a turn transition. This result suggests that cultural differences in turn allocatory mechanisms are likely, and also stresses the problem of generality arising from experimental designs utilising small samples. The contribution made by this study

is, however, limited by the absence of statistical evidence, a lack common to a number of reports in this area.

Wiemann (cited in Wiemann and Knapp 1975) examined the incidence of turn regulatory behaviours at turn boundaries in nine dyads in which previously unacquainted students interacted. From these encounters 72 'interaction sequences' (undefined in the text) were extracted. Wiemann found clausal completion to be the most frequent behaviour at the point of turn switching (arising in 93% of switches), followed by interrogative requests and 'buffers' (a class which seems to correspond with Duncan's socio-centric sequences). In common with La France he found that speakers increased the amount of time spent looking at the other as the end of the turn approached; no other non-verbal cues were identified.

Wiemann also suggests that a number of 'turn-requesting' behaviours are available to auditors, such that an auditor turn claim might arise without violation of the speaker turn. These are (in order of frequency) simultaneous talking, buffers, reinforcers, interogative requests and stutter starts; non-verbal turn requesting behaviour consisted of other-directed gaze and head nods. The first and last of the verbal behaviours seem to be more the consequence of turn claims rather than requests for the floor, and the remaining items seem to be semantic categories of turn beginnings. Of the non-verbal behaviours gaze aversion might be predicted at the start of turns (Kendon 1967, Rutter and Stephenson 1978), whilst head nods are more usually categorised as back channel behaviours (Dittman and Llewellyn 1968, Yngve 1970). The description of these behaviours as 'turn-requesting' therefore seems dubious.

Kendon (1972) has suggested that immediately prior to initiating talk 'speech preparatory movements' may be observed. Kendon considers these to be a reflection of cognitive planning, observing that the larger the speech unit being planned the greater the preparatory shifting. Thus he suggests that "the positioning of the head limb or body can clearly serve as an advance warning of what is to come, and may be part of the system of floor apportionment signals which assist in regulating exchanges" (ibid p 207). This proposal is congruent with that advanced by Duncan and Nederehe.

GAZE AND THE REGULATION OF TURN SWITCHING

Gaze behaviour in interaction has been the subject of considerable research activity (Argyle and Cook 1976), and its role in the regulation of speaker switching has received considerable attention. One of the first workers to investigate this relationship was Kendon (1967), who examined six five-minute extracts from dyadic interactions between previously unacquainted individuals. Of particular concern was the latency of turn switching consequent upon the gaze behaviour of the speaker. Where he/she ended his/her utterance with gaze, 70% of listener responses followed without a pause; in the absence of gaze only 30% of utterances followed immediately. In addition Kendon also found that speakers tended to look up at the end of their utterances, and to avert gaze during hesitation pauses within speech (1). In contrast listeners seemed to look at the speaker during speech, looking away at the point of turn transfer (as is consonant with Duncan's speaker state signal).

This pattern has also been reported by Neilson (1962) and Wiemann (1973). Rutter, Stephenson, Ayling and White (1978) in an examination of gaze state at the end of utterances, found that the speaker did tend to look at the auditor at the end of utterances, but that this pattern was more evident where strangers conversed than was the case with friends. In addition where a competitive task was engaged in there was more looking at turn switches than when co-operative tasks were carried out. This suggests that the patterning of gaze observed by Kendon is sensitive to a number of external influences, and may not be consistent.

Whilst it would seem that there is broad agreement that under certain conditions speaker gaze increases at utterance boundaries, there is less evidence to support its regulatory role. Duncan (1972) did not find gaze to differentiate smooth exchanges from simultaneous claimings of the turn. Whilst suggesting that gaze does not act as a direct regulator of switching, Duncan, Brunner and Fiske (1979) propose that it may act to facilitate turn taking in the presence of turn-yielding cues. Thus these workers found that the auditor was 3.6 times as likely to take a turn if the speaker

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(1) see review section in Chapter 5

was gazing.

Beattie (1978 A) examined the role of gaze in facilitating speaker switching utilising rather more quantitative measurements of gaze than Kendon (who merely dichotomised his switches into immediate and delayed) and considering variations in gaze across the utterance and prior to the turn ending. Three patterns were considered: a) where the speaker had been looking at the listener for more than one second prior to the end of the utterance (G1) b) where the speaker looked at the listener for less than one second prior to this point (G2) and c) where no gaze was present (G3). Contrary to expectations derived from Kendon's work, Beattie found that utterances ending with extended gaze (G1) were associated with the longest switching pauses. Examination of the syntactic structure of the utterances suggested that incomplete utterances (defined by the absence of turn yielding cues (Duncan 1972)) were associated with the shortest switching pauses where gaze was present. This result is interpreted by Beattie in terms of the interruption-like quality of such switches, which arise through the interjection of speech into what could be considered technically as an unfilled pause. Fluent cycles of speech are associated with the presence of gaze, and during such cycles unfilled pauses within speech tend to be shorter and less frequent (Kendon 1967). Since most successful floor switches arise during unfilled pauses (as defined on a post hoc basis) (Jaffe and Feldstein 1970) smooth switches during gaze would be faster than during gaze aversion. In this way Beattie asserts that the significant relationship between gaze and the duration of switching pauses does not arise through any floor apportionment functions associated with this behaviour.

Whilst Beattie did take note of the level of gaze prior to the turn switch, no study has attempted to replicate perhaps the most interesting implication of Kendon's work, which suggests that it is the <u>change</u> in gaze state that acts to facilitate turn switching. This claim is very different from the proposition that it is merely the presence or absence of gaze across the turn ending that influences switching pauses, which would suggest a monitoring

rather than a signalling function. This distinction is important, yet does not seem to be made in studies claiming to replicate Kendon's work (e.g. see Rutter and Stephenson 1978 p 17). This issue receives further attention in chapter 5 of this thesis.

The studies above have attempted to understand the role of gaze through contrasting its presence and absence in naturalistic conditions. An alternative research strategy has been to examine the consequences of its removal using a variety of techniques to preclude vision. Whilst such a procedure might seem to introduce an artificial constraint, such studies should be informative as to the role gaze might play in synchronising dialogue through any changes in the overall frequency of smooth switches and interruptions, and particularly through the finer-grained changes in the structure of dialogue that could be construed as compensating for the missing visual channel.

Cook and Lalljee (1972) compared face to face encounters with conversations that took place over an intercom link. Only two measures differentiated these conditions, there being fewer interruptions and shorter utterances in the audio only condition. There was no evidence of a breakdown in the flow of conversation and in an interpretation which has a rather post hoc flavour Rutter and Stephenson (1977) suggest that the role of visual communication is to enable participants to "converse spontaneously and interrupt freely by ... (sending and receiving) non-verbal signals which maintain the interaction and prevent the breakdown which interruption might otherwise threaten" (p 29). Such an interpretation would propose a monitoring but not a turn regulatory function for vision. This proposal receives some support from research by these workers (ibid) in which dyads interacted either face-to-face or via an audio link. As found by Cook and Lalljee there was more simultaneous speech in the face-to-face condition; in contrast a higher 'speech disturbance' rate was found in the audio condition. Williams (1978) in an extension of this work demonstrated that interruptions were more frequent in face-to-face interactions than was the case in either an audio-only condition, or where subjects interacted via a video link.

This would suggest that some quality such as physical presence might account for the results obtained, presumably through the greater ease with which co-ordination can be achieved face-to-face.

Overall there are few clear indications of speech disruption in audio only conditions, nor is the efficiency of switching influenced by such constraints. Thus no differences in the latency of the speaker switching pause seems to result from the deprivation of gaze (Butterworth, Hine and Brady 1977, Rutter and Stephenson op cit).

It should be reiterated that were the signalling function of gaze to be mediated through a change in gaze state, its absolute removal would not speak to its functioning in interaction. Thus whilst the above studies suggest a monitoring function for gaze, they neither confirm nor disconfirm its regulatory capacity.

Rather few studies report compensatory verbal substitutes for visual cues in audio-only conditions. Moscovici and Plon (1966) cited in Rutter and Stephenson (1977) found that subjects asked to converse back-to-back spoke in a more formal style than those who met face-to-face, but where subjects conversed across a table separated by a screen no such effect was found. This suggests that interference with vision was responsible for the result. Kasl and Mahl (1965) found that the ratio of filled to unfilled pauses rose when subjects spoke to an experimenter outside the room; the conditions of the study suggest, however, that this result might relate to subjects anxiety. Beattie and Barnard (1979) studied a corpus of directory enquiry calls, contrasting these with a corpus of unrelated face-to-face interactions. Whilst the validity of such a comparison might be questioned, their results suggest that the filled pause ratio was increased in audio-only conditions. This result is interpreted in terms of Maclay and Osgood's (1959) suggestion that filled pauses act as verbal signals aimed at inhibiting potential interruptions.

The lack of supportive evidence for changes in speech style with restrictions in vision, and the corresponding replicability

of a higher interruption rate in face-to-face interaction, suggest that the role of vision in interaction may be to permit a greater degree of 'disfluency' as a consequence of the availability of non-verbal cues for the regulation of speaker switching. Certainly no specific regulatory role can be ascribed to the simple presence or absence of speaker gaze, though it may act in a facilitatory fashion to increase the probability of turn taking in the presence of other cues (Duncan et al 1979). Its role as a cue to turn yielding is not clear; the lack of direct replication of Kendon's 'look-up' cue is noteable, and permits little comment on this issue. Some further caution might also be warranted in considering that gaze is not compensated for in audio-only conditions. No study has examined the variation in paralinguistic cues between vision and no-vision conditions, and the contention that the filled pause ratio is increased in telephone dialogues requires further investigation.

RELATIONSHIPS BETWEEN SPEAKER PAUSES AND TURN TAKING

The majority of speaker transitions arise at pauses within speech (Rosenfeld 1977), and a number of researchers have noted the relationship between such pauses and listener back-channel behaviour. (Duncan and Fiske 1977, Dittman and Llewelyn 1967). Two forms of pauses have been identified, and differing roles ascribed to them. MacLay and Osgood (1959) considered that the role of both the filled and unfilled pause was to create time for speech planning, but that the filled pause played a particular role in defending the turn. (1) Whilst the cognitive function of these features has received some confirmation (Rochester 1973) their social functioning seems less clear.

The floor holding role of filled pauses has been investigated by a number of workers; Cook and Lalljee (1970) asked subjects to listen to utterances which were either grammatically complete or incomplete, and which either ended with a filled pause or, in effect, an unfilled pause. Subjects were required

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(1) see also discussion above

to indicate when they thought they would reply to an utterance, and the 'switching latency' examined. Contrary to the hypothesis under test, this was shorter where a filled pause terminated the utterance, and longer if it was grammatically incomplete. Ball (1975) utilised a similar patterning of utterances to Cook and Lalljee, but generated them in a naturalistic setting. Subjects were asked to interview the experimenter on a series of prepared topics to which answers were given in a natural manner, whilst systematically varying the factors of grammatical completion and filled pause rates. The shortest switch latencies followed grammatically complete utterances with no filled pauses; between the remaining three combinations of these factors there were no significant differences. However, collapsing data so as to contrast utterances with and without filled pauses suggested that this characteristic did indeed delay subjects responses. The contrast between Cook and Lalljee's and Ball's data may relate to the setting of the utterances, since it is not clear that an explicit focus on responding is equivalent to the (presumably) less conscious process of turn switching.

An alternative research strategy has been to examine the increase in production of filled-pauses that should (given their proposed function) result from an increased 'threat' from a conversational partner. Lalljee and Cook (1969) observed subjects interacting with a confederate who interrupted at a high rate, but did not find any increase in the rate of filled pauses. A further study (Lalljee and Cook 1974) examined the production of filled pauses in monologues and interaction, finding no increase where subjects answered questions alone, where they were requested to monologue in the presence of an experimenter, or interacted with him. Both this and the previous study may have failed to confirm their hypothesis through the availability of alternative strategies; no attempt was made to monitor any additional compensatory actions in the kinesic channel, or (in the latter study) to examine the comparability of the experimenters construal of an increasing level of competition for the floor with the perceptions of subjects.

The availability of the kinesic channel for attempt-suppression suggests that quantitative changes in subjects speech style would not necessarily be expected in face-to-face interaction. Beattie (1977) has found evidence that rather than producing more filled pauses, subjects varied the temporal patterning of these features. Thus the most frequent locus for interruptions was found to be at unfilled pauses rather than during speech. A comparision of the mean delay before interruption (given by the length of these unfilled pauses) with the latency of production of a filler word within an unfilled pause (hence creating a filled pause) showed a positive correlation. This suggested that interruption pressure was responded to by a more rapid conversion of unfilled to filled pauses. Additionally Beattie found that the probability of an interruption following a filled pause was less than that following an unfilled pause of equal length, though this result only held over a short period ($<$600 msec) subsequent to the pauses. This result provides some cautious evidence for the putative role of filled pauses in maintaining the floor. Quite clearly however their role is localised; the efficacy of kinesic channels in performing a floor apportionment role suggests that these devices can not be considered to play more than a marginal role.

RELATIONSHIPS BETWEEN SPEAKER BEHAVIOUR AND AUDITOR RESPONSES

The work of Duncan has been extensively reviewed; within his system the speaker within turn signal, comprising syntactic clause completion and the turning of the speakers head towards the auditor additively predicted the probability of a back channel response. Dittman and Llewellyn (1967) similarly found that listener responses cluster at the junctures between phonemic clauses. Further study (Dittman and Llewellyn 1968) suggests that verbal and non-verbal back-channels are differentially distributed with respect to these points. Within their sample visual and vocal back channels [1] tended to arise together more frequently than would be expected from chance combinations of

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(1) see definitions on page 12

their individual occurrences; a similar result was found by Gunnell and Rosenfeld (1971). Where conjoint display arose at the same juncture there was a tendency for the visual back channel to precede the verbal response such that head nods were more often produced before, and verbal back channels after, the juncture. This result may relate to the likelihood that verbal responses in a pre-boundary position would be more likely to disrupt the utterance of the speaker. Duncan's work suggests that a back-channel response arising prior to the juncture is more likely to evoke a 'speaker continuation signal'. Whilst his data is not decomposed to distinguish verbal and visual back-channels (see Duncan and Fiske 1977 p 226) this would suggest that speakers are more sensitive to pre-boundary listener responses, since post-boundary pauses alone did not induce this listener response.

Rosenfeld (1972) and Dittman and Llewellyn (op cit) also found that particular speaker behaviours elicited visual or vocal back channels. In an analysis of head nodding Rosenfeld found that most of the occurrences of visual back channels that preceded the juncture were themselves preceded by a range of speaker behaviours such as a filled pause accompanied by hand gesticulation or a head movement, or a phrase whose content was redundant with the preceding talk. Dittman and Llewellyn found that head nods were elicited by socio-centric sequences. The function of back channels at these points seemed to be attentional; the above authors suggest that conjoint display is more likely to indicate understanding or agreement. Thus this dual response was more likely to arise where the speaker asked a question but before the listener replied, or after the speaker answered a question previously asked by the listener. Rosenfeld and Hanks (cited in Rosenfeld 1977) found that judges asked to take the role of the speaker and to rate listener responses for the degree to which they showed 'attention', 'understanding' or 'agreement' identified conjoint displays of verbal and visual listener responses as 'agreement', whereas head nodding alone in a pre-juncture position was perceived as 'understanding'. Attention was construed through a forward leaning of the auditor prior to the juncture together with

a post-boundary verbal response. Whilst this study constrained the range of response its results, along with those considered above, suggest that back channel responses can have distinctive configurations indicating different forms of feed-back to the speaker.

The effects of listener responses on speakers have not been extensively researched. The probability of a speaker continuation signal following either visual or verbal back channels has been noted above. Further elaboration of the forms of feedback available to listeners is suggested by Birdwhistell (1970) who differentiates functional classes of head nods in terms of their number and frequency, and placement with respect to the speakers talk. Thus longer lasting single nods were associated with speech disruption and the justification of a prior substantive point, whereas double head nods modified the vocalization rate of the speaker either up or down, or led to an elaboration of the previous speech. Weiner et al (1972) suggest that the raised eyebrow or frown of a listener generally results in reiteration or correction of current talk. This research is highly suggestive, but the observational methodology employed restricts the generality with which its conclusions can be applied. However it does suggest a fine-grained system of visual and verbal back channel responses with a range of meanings and consequences for the interaction. The degree to which such patterns are universal is not clear; the paucity of research in this area makes interpretation difficult beyond the conclusion that speaker talk is modifiable through these behaviours.

LINGUISTIC STUDIES OF THE TURN TAKING PROCESS

Previous sections have dealt with non-verbal accompaniments to the process of turn taking; in this section theories which attempt to account for this process through language use are considered. As will become apparent there are few points of contact between these different approaches; not only does this result in a mutual impoverishment of approach, but more seriously there is an

incompatability of theoretical positions. The major theoretical contribution made by Duncan suggests that the turn-taking process may be accounted for through non-verbal cues of a discrete and independent nature; further none of these cues are proposed to carry greater weight than any other, nor are any recurrent cue clusters proposed. The overwhelming reliance on linguistic features in the work to be described is at variance with this position not only in ascribing a linguistic base to turn allocational processes, but also, by virtue of this fact, challenging the lack of cue-clustering by stressing the role of language in speaker switching.

The work of Sacks, Schegloff and Jefferson (1974, and henceforth referred to as SSJ) stands alongside that of Duncan as being one of the only attempts to sytematise a theory of turn taking. SSJ present a series of observations as to the temporal structure of talk,[1] attempting to account for this structure through their theory. These observations are that:

1: Speaker change recurs, or at least occurs
2: Overwhelmingly one party talks at a time
3: Occurrences of more than one speaker at a time are common but brief
4: Transitions from one turn to the next with no gap and no overlap are common; together with transitions characterised by a slight gap or slight overlap they make up the vast majority of turn transitions (SSJ op cit 700-701)

The data base which these workers utilise in order to account for this patterning consists of tape recordings of a variety of naturalistic conversations such as telephone calls and coffee room encounters transcribed with great attention to the temporal placement of utterances, but with rather less focus on paralinguistic features. No statistical evidence is presented; rather SSJ present a series of exemplifications of features they consider important. Whilst this allows for considerable illumination of certain points, evidence as to the reliability of their observations and the frequency of their occurrence is not available.

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(1) It should be noted that the theory is not specifically addressed to dyadic interaction, but is intended to be generally applicable to groups of any number.

Two basic components are proposed by which turns at talk are firstly recognisable as such, and secondly allocated - the 'turn constructional' and 'turn allocational' components respectively. In constructing a turn various syntactic units may be employed, and these turn constructional units may consist of a word, a phrase, a clause or a sentence. By virtue of these units an auditor can make a projection of the unit type being generated, and, it is proposed, anticipate its end point. This projective ability is crucial to the turn-allocational system. It is considered that a speaker is initially entitled to one such unit, and that the boundary points described by their endings are suitable loci for a speaker switch. They are therefore described as 'transition relevent' locations, and the " ... transfer of the turn is co-ordinated by reference to such transition relevant places, which any unit type instance will reach" (ibid p 703).

The allocation of turns is achieved through three techniques, the 'preference' for which is hierarchically arranged. Thus the current speaker may choose the next speaker by using in his talk a 'current speaker selects next' technique, such as an addressed question ("John, what is the time?"). If this option is not used, other participants may self-select by beginning utterances of their own, the first person to speak up acquiring the turn. Finally if none of these occurs, the previous speaker may continue into another turn.

A number of 'repair mechanisms' are described which come into operation when the system described above fails to co-ordinate participants. The most usual problem is multiple starts during self selection, repaired by the cessation of speech by all bar one interactant.

In elaborating the operation of the system SSJ have recourse to a variety of linguistic usages that organise the placement of talk by virtue of interactants' knowledge of the way language 'works'. Linguistic philosophy has noted the ability of language to initiate action, a theme elaborated principally by Austin (1962) and his successors. The form and function of language in interaction is not equivalent; as Sinclair and

Coulthard (1975) point out:

> " ... a native speaker who interpreted 'is the mint sauce over there' or 'can you tell me the time' as yes/no questions ... would find the world a bewildering place".

It is this 'common sense' knowledge about the pragmatics of language use that SSJ exploit in their theorisation, and which roots much of their work within the context of discourse analysis. The phenomenon of speaker exchange exemplifies this feature of their work, in proposing that speakers begin or attempt to begin their next turn around possible transition relevant locations rather than discontinuously throughout dialogue. Such points are considered to be 'projectable' by virtue of the listeners knowledge of the possible unit types under construction. Thus SSJ give the following examples (SSJ p 721):

A: An' the fact is I - is I just thought it was so kind of stupid
B: [I didn't even say anything [when I came home
B: [Y- [Eh -

and

A: I saw 'em last night [at ehmm school
B: [they're a riot

SSJ argue that auditors are sensitive to, and able to project, such 'possible completion points' both through language use and intonation. The lack of definitional rigour, however, makes such a statement problematic, since is it implausable to assume that any unit type will be projectable to a transition relevant location. Thus some contextual component would presumably be required in order to account for the conditions under which one word, or one sentence might be perceived as satisfying the criteria for completion. Some similar criterion would be required for auditors to projectively identify the unit-type being generated; quite clearly without such constraints there could be no end to the number of transition relevant locations within an utterance. It is perhaps the very flexibility of the system, described in a decontextualised and idealised manner, that makes interpretation difficult. SSJ cannot account for the actualisation of one transition relevant location over another, and whilst some reference is made to intonation as a guide

to completion the system as described seems to rely on a shifting set of criteria bound together largely by the readers own linguistic intuitions.

Inspection of the examples of transition relevant locations offered by SSJ suggests that these are most often constituted by clausal boundaries; as such these instances would correspond to the turn-yielding cue of clausal completion identified by Duncan. Their favoured position in the SSJ system raises difficulties for the independence of the cues within the turn-yielding model, but does conform to the findings of a number of workers that syntactic completion is associated with turn transitions (see page 17 of this review).

An important feature of the concept of transition relevance is its ability to account for the location of interruption points. Jefferson (1973) suggests that where overlaps in speech arise they may be seen to reflect the projection of transition relevant points, as in

A: You've been down here before [havenche
B: [yeah (adapted from SSJ P707)

The placement of turn transfers at transition relevant locations allows for a minimal overlap, since they are points where a current speaker can or should exit. Such placement can be shown to demand a high degree of skill in the prediction of temporal patterning, as in

A: The guy who doesn't run the race doesn't win it, but then he doesn't [lose it
B: [lose it (Adapted from Jefferson 1973)

These examples highlight a major theoretical difference between SSJ and Duncan, since they provide for a regularisation of simultaneous turns, and further indicate that their production is the product of considerable precision. Whilst not elaborated explicitly, the SSJ model suggests that in the absence of speaker selection sequencing is achieved through auditor self-selection utilising linguistic intuitions as to possible completion points within language.

A major difficulty within this system concerns the ability of co-interactants to recognise when the completion of a unit type is not intended as a turn ending. Quite clearly it cannot be appropriate to interject at all transition relevant locations, since such loci arise with a high frequency. Similarly no information is contained within the description of listener self-selection by which speakers could indicate their intention or desire to continue speaking.

Within the Duncan schema completion points are signalled through (primarily) non-verbal cues which are treated as equivalent in their informational power. The 'yielding' cues which constitute the core of the model place the control of temporal patterning with the speaker, and display a theoretically primary concern with the achievement of smooth switching as a consequence. Whilst this emphasis permits some explication of such features as turn maintenance and exchange, it places interruptions into a category of erroneous interchanges for which the system can offer little internally consistent account.

Each model is capable therefore of providing insights into the mechanisms of speaker exchange, yet neither is a sufficient account of the process. Both seem to have operated from a restricted data base, and through this to have achieved differing vantages on the same phenomenon. The possibility that a synthesis between models may be achieved by consideration of both linguistic and non-verbal behaviours is considered in Chapters 5 and 6.

STUDIES OF INTERRUPTIONS

The studies reviewed to this point have focussed upon the regular relationship of speaker and auditor speech patternings, but have done so (with some exceptions) in the context of utterance sequences unmarked by the presence of simultaneous turns. As Clancy (1972) notes, interruptions and simultaneous speech are common in spontaneous dialogue, and whilst for some workers interruptions are "a waste of time and effort" which participants should avoid "unless ... they are chiefly interested in irritating one another" (Power and

Dal Martello 1981) other workers have made them a specific focus of study.

a) The resolution of simultaneous turns

Duncan and Nederehe (1974) propose that simultaneous turns are resolved through the balance of cues displayed in the speaker state signal and the number of turn yielding cues displayed. This work has been reviewed above, and would suggest that interruptions arising at junctures within speech are more likely to result in a turn transition. No direct replication of this study appears to have been conducted.

Meltzer, Morris and Hayes (1971) suggest that the vocal amplitude of speech permits prediction of the outcome of simultaneous turns. Using a corpus of naturalistic speech they found that simultaneous turns where the current speaker raised his/her voice were more likely to be successfully 'defended'. No such effect was found for the auditor, suggesting that some floor-holding rights accrue to the current speaker. A qualification to this result was that vocal amplitude only permitted prediction of outcome over periods of simultaneous speech lasting less than three seconds. In a more experimental test of this hypothesis Morris (1971) had subjects interact through an audio link, and artificially manipulated the apparent amplitude of each participant during simultaneous speech. Similar results were obtained to those discussed above suggesting that amplitude, rather than linguistic factors, was responsible for the effect. Again the effectiveness of amplitude as a predictor was circumscribed to three seconds; Morris suggests that this allows little time for encoding and decoding of speech, and that therefore such factors are of little importance to the process of resolution. However, neither of these studies examined the conditions under which a defending rise in amplitude occurred. It may be the case that where interruptions arise in the absence of yielding cues, and therefore between junctures, speakers are more likely to defend the turn. Since such points will, by definition, arise within the speech flow a vocal defence might be more appropriate than where simultaneous speech arises within junctures. Further research

is required to elucidate the conditions under which this phenomenon operates and its relationship to other variables within the turn taking system.

b) Temporal characteristics of interruptions

Whilst most investigators distinguish between simultaneous speech and simultaneous turns (see Duncan 1972), finer distinctions between interruption types are not usual. Ferguson (1976) has suggested that at least four interruption types may be distinguished on the basis of behavioural and linguistic differences. Utilising a corpus of fifteen dyadic interactions between one main subject and fifteen acquaintances, the following classes were identified: (1)

(a) Overlaps - where simultaneous speech is present and the initiator of simultaneous speech takes the floor, but with no break in the continuity of the first speakers output, such that he/she reaches completion

(b) Simple interruptions - where there is simultaneous speech, and the initiator of simultaneous speech takes the floor, but the continuity of the first speakers utterance is broken.

(c) Silent interruptions - where there is no simultaneous speech, but the second speaker takes the floor, leaving the first speakers utterance incomplete.

(d) Butting-in interruptions - here there is simultaneous speech, but the initiator of such speech does not take the floor. Such interruptions are distinguished from interjections (or back channel comments) by the break in continuity of the interruption.

Ferguson (op cit) found that overlaps were the most common form of interruption, followed by simple and silent interruptions; only 10% of all interruptions were butting-in interruptions. The classes of interruption could be distinguished on the basis of their initiation points in speech; overlapped interruptions appeared to be a consequence of the anticipation of transition relevant locations, whilst simple interruptions seemed to be a response to such

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(1) Examples of these interruption types are given in Chapter 6 of this thesis.

places, and were more likely, for example, to arise in the presence of conjunctions linking clauses. It may be noted, however, that Ferguson did not explicitly locate transition relevant points, performing her analysis on the basis of the category of words most frequently present at interruption points.

In a study of the behavioural characteristics associated with dominance using the corpus referred to above Ferguson (1977) found that the classes of interruption were differentially distributed in individuals ranked high in this characteristic. A behavioural ranking measure and a questionnaire were used to assess the dominance of the participants; each of these measures gave a differing pattern of correlations (as might be expected from studies of behavioural and actuarial assessment methods (see Mischel 1969)). An increased use of overlapped interruptions and a decreased use of silent interruptions seemed to be present in dominant individuals. This would suggest that the temporal patterning of interruptions are not random, but bear a relationship to the speech and personal style of the interrupter. Two important implications may be drawn from this study. Whilst Ferguson's work requires replication, it does suggest that all instances of simultaneous turns are not equivalent in their interactional meaning. Where investigators have attempted to understand psychopathology through an analysis of the temporal structure of talk (e.g. Mishler and Waxler 1968, Farina 1960) such a distinction may be necessary in order to reduce error variance attributable to the combination of distinctive categories. A second issue concerns the status of differential placement of interruptions within a theoretical understanding of speaker switching, since within the Duncan scheme interruptions are understood as being external to the regulatory factors governing turn allocation. It is difficult to account, therefore, either for the appearance of interruptions as a regular phenomenon or for their differential temporal patterning other than by recourse to post hoc argument or relegation of these instances to errors. Crucially differential placement suggests an 'intentional' positioning of talk, whereby an interaction between purpose (dominance) and style is achieved. The SSJ model seems more suited to an understanding

of this phenomenon, since it would seem that, whilst not explicitly examined, the interruption classes may be organised with respect to transition relevant locations. Ferguson (op cit p 300) notes that:

> "Examination of the points (in the other speakers utterances) at which overlappers initiate simultaneous speech suggests that these speakers may be anticipating either possible completion points within utterances or at the ends of utterances".

The SSJ model would explicitly predict such organisation, whereas such anticipatory responding is not understandable through Duncan's schema. Thus the turn allocational properties of transition relevant locations have been discussed above, and a model of auditor self selection would permit an understanding of Ferguson's data. Even were it to be the case (as may be likely) that turn yielding cues are present at transition relevant locations there is no possibility of understanding the manipulation of interruption points within the Duncan system. The possibility that switching style and strategy are inter-related offers a link between the structure of dialogue and its content, and a greater understanding of variations in temporal patterning; through this insight into the operation of the turn-taking process itself may be achieved. This issue is elaborated and investigated in Chapters 7 and 8 of this thesis.

c) <u>The detection and perception of interruptions</u>

Whilst there has been considerable research aimed at investigating speaker switching, there have been few studies in which naive observers are asked for their understandings of speech style. Ferguson requested fifteen subjects to listen to ten minutes of dialogue, and to indicate the points at which they heard an 'interruption' (defined as an unfinished sentence with broken off intonation) and 'simultaneous speech' by pressing buttons. Comparison of the transcript with the pattern of button presses suggested that the interruption classes (as defined above, p.35) were responded to differentially. Break-in interruptions were noted, on average, on 70% of their appearances. In contrast silent

interruptions were responded to at a rate of 30%, with comparable figures for overlaps and simple interruptions of approximately 50%. The high false-positive detection rate suggests that these figures may be unreliable and this, together with the low frequency of some classes of interruptions in this study precludes detailed conclusions. A contrast between all interruptions and back channel comments suggests, however, that this distinction is clearly recognised by observers, and that break-in interruptions are perceived as more 'interruption-like' than are other classes of interjection. Subjects commented that they found the demand to attend to structural features of the dialogue difficult, being distracted by the content. Whilst the patterning of results suggests that they were nonetheless partially successful in this task, it does raise some question as to the inter-relationship of these two factors. Given a high false-positive pattern of responses it is surprising that certain classes of interruption were not detected at more than a 50% rate, suggesting that the perception of interruptions is not immediately guided by those features utilised by analysts of discourse.

Argyle (1976 p 65) asked observers to rate the 'appropriateness' of interruptions in which the point of interruption was varied. Raters judged that interruptions arising at the boundaries of sentential clauses were most appropriate in utterances of any length, and at clausal boundaries in short utterances. The relationship between such judgements of appropriateness and perceptions of interruption may be important. Thus if features such as 'broken off intonation' or 'interruption across clausal boundary' are utilised as an index of interjections by conversationalists it might be suggested that under certain circumstances interruptions (as technically defined) might be treated as smooth switches (as interactionally defined). Clancy (1972) has noted the tendency for most interruptions to pass the listener by unnoticed, a problem also found in attempting to transcribe dialogue. Clancy attempts to distinguish different classes of interruption on the basis of the relationship between the content of the interrupting and interrupted utterance. This suggests that the content of talk, as well as its extra-linguistic characteristics, influences the perception of

interruptions. A more complex classification of interjections than one based solely on temporal patterning might be required in order to match the interactional reading of switch types with those used by researchers. This point has some theoretical (as well as methodological) importance, in that it questions the orientation of interactants towards smooth switching, and places greater emphasis towards recognition of acceptable and unacceptable variations in switching style. This issue is explored in Chapter 8 of this thesis.

NON VERBAL BEHAVIOUR AND SPEECH

The studies of non-verbal behaviour presented to this point have been concerned with the relationship of gesture to the process of turn allocation. In this section research which considers the relationship of gesture to speech will be reviewed.

A number of workers have suggested that the patterning of gestural activity across an interaction is structured into hierarchical units, in a similar manner to the ordering of syntactic structure (Birdwhistell 1970). Scheflen (1964) has proposed that gestural accompaniments to speech may be organised in this manner, with the smallest unit - the 'point' - being equivalent to the point of view an interactant might take in a discussion. This level is characterised by localised shifts of individual body parts, such as the hands or head; in the higher-order unit of the 'position' gross body shifts involving the co-ordination of more than one body part are apparent. The position is considered to correspond to the 'point of view' an interactant expresses, and might therefore be equivalent to the maintenance of a topic. At a highest level comes the 'presentation', the sum total of one persons positionings during an interaction. This scheme, whilst highly suggestive, contains a number of difficulties, since the precise relationship of gestural activity to speech is not specified, nor are the categories of the point and position elucidated adequately enough for their operationalisation (see Butterworth 1978).

Kendon (1972) has investigated the organisation of body movements in a brief section of interaction, suggesting a clustering similar to that of Scheflen. At the lowest level, which corresponded (approximately) to the production of sentential clauses, changes in body movement were restricted to the same limb. Kendon suggests that sentential units are combined to form 'locution clusters' within which particular approaches to a topic are contained. Corresponding to this level are more gross body movements, such that the segmentation of the locution cluster is marked by shifting of the trunk. For higher level units, such as changes of role (to listening) or for the total level of discourse major changes in body posture were apparent. The larger the speech unit the greater the shifting, and Kendon suggests that such movements are a reflection of speech planning. In considering the timing of gestural shifting, he distinguishes between speech preparatory and speech accompanying movements; speech preparatory movements arose prior to talk, and the larger the size of unit, the earlier and more extensive the movement.

The placement of changes in body movements seems to relate to syntactic structures suggesting a close relationship between speech and gesture. Dittman and Llewellyn (1969) found that gestures were more likely to be initiated at what they termed 'start positions' within speech, such as the first words of phonemic clauses, syntactic clauses and after pauses within clauses. These movements would appear to be 'speech accompanying', and whilst Dittman and Llewellyn concur with Kendon in viewing them as associated with the encoding of speech, they do not report speech preparatory movement. Lindenfield (1971) found that body movements tended to arise in coincidence with syntactic structure. The reliability of this finding is made less certain by Lindenfield's (1974) later failure to replicate this result, although the finding that gestural activity increased with greater syntactic complexity would confirm the relationship of this behaviour to encoding.

In considering the relationship of gestural activity to such features as topic change there is rather less quantitative research; the work of Kendon and Scheflen demonstrates particular instances of correlated kinesic and verbal activity without indicating the frequency with which such patterns arise. Erikson (1975) examined shifts of posture during counselling interviews using different raters for the kinesic and verbal content of the dialogues. Shifts of posture tended to arise in conjunction with the beginning and end of segments of speech marked by changes in content and style.

Bull and Brown (1977) classified utterances produced in six videotaped dyadic interactions into four categories of statements (which introduced new information), questions, answers and responses (speech which is either supportive or repetitious). They hypothesised that the ordering of this list, reflecting the degree to which new information is introduced into the dialogue, should correspond to the probability of a change in gesture. Changes in posture were more frequently associated with the introduction of statements, with no differences amongst the remaining classes of utterance. Whilst this result is not directly supportive of Scheflen's or Kendon's position, it does suggest that the novelty of information introduced may relate to postural change. Some caution is introduced however by the low frequency of the question and answer categories which, whilst not specified, is noted.

In an extension of this work Thomas and Bull (1981) replicated this form of analysis using a larger data base, finding no relationship of body-part movement to utterance type, but suggesting that the raising of the head is associated with asking questions, and head aversion characteristic of answering. The authors suggest that such a pattern conforms to that proposed by Kendon (1967) in which looking at the other is associated with offering the floor and looking away with initiating speech; however such a claim can only raise questions as to the location at which shifts in posture were examined. The above suggestion would imply that such shifts were located at any point in the utterance, thereby indicating that their relationship may be subsequent to, rather than anticipatory

of the content of the utterance. Since both Scheflen and Kendon propose that speech related movements relate to encoding, the observed movements might be less clearly interpretable than is claimed.

The studies reviewed in this section would suggest that a close relationship between non-verbal behaviour and speech is apparent, in which the encoding and planning of talk, and the size of the planning unit, influence the presence and form of the gestural activity. However the inter-relationships of discourse and non-verbal behaviour are rarely examined for their social functioning. Goodwin (undated memo) presents a number of examples of talk where the patterning of non-verbal behaviour, whilst understandable in terms of encoding problems, also serves to 'hold' the utterance together. Thus

A: <u>Y'know and they was coming</u> er <u>about two</u> minutes

each each er <u>between each of them</u> (etc)
↑ (HAND GESTURING) ↑

(underlined talk indicates gaze directed to the auditor)

In this example eye gaze is withheld at points where (it would seem) lexical search is occuring, and during which gestural activity appears (see also McNeill 1975). The appearance of what can be interpreted as a speaker gesticulation signal (Duncan 1972) at this point raises a point of ambiguity concerning this behaviour. If, as would appear to be the case, gestural activity arises as a consequence of encoding complexity, it is difficult to appreciate how it might also be employed in a <u>direct</u> sense as a turn regulatory signal. The close relationship between linguistic and non-verbal behaviour which seems apparent suggests that the identification of particular instances of recurrent gestural activity as having a turn-allocatory function <u>in isolation</u> from its linguistic substrate seems unlikely. This issue is further discussed and elaborated in Chapter 6.

STUDIES OF DISCOURSE

Whilst the previous section has addressed itself to patternings of behaviour above the level of the utterance, much of the research presented in this review has considered the utterance as a unit to be placed in sequence with another of its kind. At an interactional level it is quite clear that these sequences are organised into a coherent whole (with admittedly greater or lesser degree of success). The problem of how such structuring is achieved is the province of discourse analysis, and the major theoretical contributions will be discussed below.

In reviewing the work of Sacks, Schegloff and Jefferson (1974) note was made that one option within the turn allocational system was for the current speaker to select next. This may be achieved through the use of an 'adjacency pair' format, a class comprised of two utterances produced successively by different speakers. The first pair part establishes as 'conditional relevance' for the second, and by its production makes any failure to respond noticeable. Examples of such pairings would be question-answer formats, formalised rituals such as greeting-greeting, complaints and justifications and summons-answer sequences (Schegloff 1967, Nosfinger 1975). Through the adjacency pairing the current speaker may select a next speaker or merely establish conditions for self-selection, as in

A: Ben, do you want some coffee?
Ben: Well, alright, I'll have some

or

A: Does anybody want some coffee? (adapted from SSJ p 703)

Thus through the use of speaker selection techniques to construct turn transitions recognisable through verbal content some link is offered to the building of text through restrictions on the range of possible 'next utterances'. This offers a mode of discourse analysis through consideration of these proximal constraints. Whilst it may be that no answer is forthcoming to a question, the conditional relevence established through the first pair part produces a 'structured absence' through which a failure to respond becomes noticeable.

Utilising this basic format, a series of elaborations of structuring have been proposed. Schegloff (1972) suggests that deviations from the linear structure implied by the above account may be created through embedding of adjacency pairs. Thus

A: Do you know John's address?
  B: Which John is that?
  A: John Brown
B: Oh yes, its (etc)

(modified after Schegloff 1972)

In this 'insertion sequence' the embedding is comprised of an adjacency pair. Alternate forms of embedding, such as the 'side sequence' (Jefferson 1972) are possible, where the content of talk is suspended to allow for the clarification of a point as in:

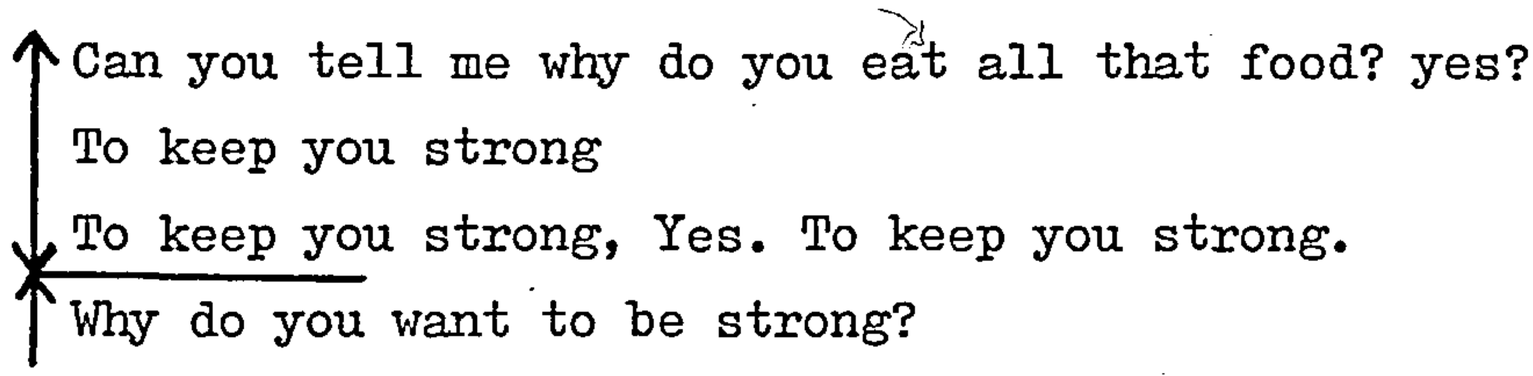
statement: A: And a good-looking girl comes to you and asks, you know
misapprehension: B: Girl asks you to ... ?
clarification: A: Well its happened a lot of times
termination: B: Ok OK go ahead
continuation: A: so he says 'no' (etc)

(adapted from Jefferson 1972)

Here the inset speech represents the side sequence, with a continuation from speech following. It may be noted that the local structuring apparent in the adjacency pair becomes less clear in this example, and rather than using a projective form of tie these utterances seem to be connected through their 'coherence' to previous talk. Thus the use of pronouns and adverbs (such as 'too' and 'as well') together with contrastive stress act to produce a cohesive sequence, a feature which will be considered further below.

In attempting to apply this form of analysis to a complete dialogue, rather than instancing particular stretches of talk, it rapidly becomes clear that many utterance sequences do not exemplify the characteristics of adjacency pairings, and that an understanding of much of the sequencing of talk would need to proceed on a post hoc basis.

Sinclair and Coulthard (1975) attempted to analyse the relationships between utterances in the language used by teachers and their pupils in classroom interaction. In order to achieve this they proposed a model based on a series of hierarchically organised levels of analysis, with higher levels incorporating those below. The highest rank is the lesson, or whole interaction. At the next level comes the transaction, corresponding to the topic under discussion. Transactions are comprised of sets of exchanges, which are themselves made up of two or more utterances. 'Exchanges', in their turn, are made up of moves which are sentential in length, and finally 'acts' correspond to clauses. Within this structure a series of rules govern the interpretation of eliciting, responding and feedback sequences such that an entire corpus is understandable and regulated through the system. Whilst the details of this model are too complex to discuss in the present context, Sinclair and Coulthard suggest that when considered within this system there is no level of analysis corresponding to the utterance. It would rather seem to be the case that the boundaries of exchanges, which link any two utterances, are placed within them, as in



(from Sinclair & Coulthard op cit)

Following the elicitation sequence, which corresponds to an adjacency pairing, the linking between units is provided by the cohesive tieing of the teacher's second utterance through repetition (Halliday and Hassan 1976).

Thus in the Sinclair and Coulthard scheme utterances form a linked discourse by virtue of the lack of coincidence between speaking turns and textual boundaries. However within their system no explicit attempt is made to explicate the manner in which this linking is achieved, since it is quite clear that simple repetition is not a usual or unitary method of linking.

Two areas of research within linguistics are of direct relevance to this problem, concerned with the explication of ties between utterances derived from semantic and intonational resources.

Prior to considering lexical or semantic coherence it is important to note the contribution of intonation to the interpretation of utterances. The placement of accent so as to contrast differing parts of a phrase is well known to produce different readings of the same lexical items, as in:

John hit the boy, and then Jim hit him

This sentence can be rendered so as to produce different combinations of actions. Further than this, however, it is argued that intonation provides for a meaning in context. Gunter (1974) and Brazil (1976) argue that stress is placed on certain items so as to indicate what aspects of the utterance are taken for granted, and which portions introduce new information. Thus Brazil (op cit p 182) notes that two patterns of intonation - a fall and a fall-rise - may significantly alter the form of utterance that might have proceeded these examples:

1) A hundred degrees CENtigrade // is the boiling point of WATer

2) A hundred degrees CENtigrade // is the boiling point of WATer

↘ = fall

↘↗ = fall-rise

Version number one gives the impression that the temperature at which water boils is in question, whereas the second example seems to treat the second clause as problematic. Thus whilst the meaning of the utterance remains constant, the assumptions made by the speaker do not. The first version might be relevant to questions regarding the boiling point of water, whilst the second might be a corrective to someone who had asserted that mercury boiled at this temperature. Gunter (op cit p 80) suggests that the intonational contours of speech are

> "... not a product of the internal facts of the sentence with which it figures, but (are) context signals that bind the response to the context. Such context signals make dialogue possible".

This suggests that local constraints on dialogue act as sometimes optional and sometimes obligatory ties between utterances, and that these ties act to cohere dialogue.

Halliday and Hassan (1976) have derived a detailed system of lexical and semantic tieing devices in an attempt to elaborate a text-grammar which will describe inter-sentential relationships. Logical relationships between utterances may be indicated through items indicating parallelism, or through the use of contrastive features such as 'and' 'but' 'to' and 'also'. Additional devices such as ellipsis isolate focal information, and anaphoric reference indicates what is already known through the use of referents from previous talk. The term 'cohesion' is coined by Halliday and Hassan to indicate these logical relationships.

A re-examination of the example offered by Sinclair and Coulthard, and given on page 44, suggests that coherence is a powerful tool for the linking of discourse. Thus re-writing the dialogue gives:-

T1	Can you tell me why you eat all that food? Yes?
P1	To keep you strong
T2 (i)	To keep you strong. Yes. To keep you strong
(ii)	Why do you want to be strong?

It can be seen that T1-P1 form an adjacency pairing, and T1-P1-T2(i) an exchange structure. Within T1-P1 there is therefore a conditional relevancy which establishes its structure, whereas it is not until T2(ii) that a further structuring device of this kind is utilised. However, an examination of the coherence within this extract indicates that it is governed by a massive degree of ellipsis which operates to tie all four sections of talk, as indicated in the diagram. Thus not only is it the case that each successive utterance is thereby tied to the previous turn at talk, but it is also clear that the teachers second utterance (T2(i)) is tied to his first, thereby introducing a multiply embedded chaining.

Vuchinich (1977) has employed the concept of cohesion to explore the proposition that interactants are sensitive to the presence of this feature in dialogue, and particularly between utterances. Vuchinich suggests that where a turn at talk is not sufficiently cohesive with the previous discourse, then that turn will have an observably disruptive effect on the conversation. Cohesion is defined in this study as the presence of at least one type of 'unit relationship between turns or phrases' (ibid p 231), a definition which, in practice, seems to apply to inter-utterance relationships. The forms of relationship formally described are those of ellipsis, conjunction, presupposition, repetition, pronominalization and anaphoric reference. In practice Vuchinich utilised operational definitions in which the relationships were given by the offering of an account or explanation of events raised by the first speaker, the furnishing of a consequence, or the attempt to provide a match to the first item of talk.

Assuming a normative requirement to structure dialogue cohesively, Vuchinich examined 52 dyadic interactions between a confederate and experimental subjects, into which non-cohesive utterances of varying forms were interjected, as in:

A: I worked really hard my second semester, and my finals came up, and I freaked out ... I'm still a little tense ... it hasn't worn off

B: Yeah I know, the university, they really want your money you know

A: They sure do

B: Monopoly is a really fun game

(2.2 second gap)

A: Why do you bring that up?

(Abridged from Vuchinich 1977)

The results of this procedure were that subjects were significantly more likely to question the placement of non-cohesive items, and showed a highly significant increase in the switching

latency following such turns.

A second set of utterances within this study utilised the form of unit relationships improperly, such that their cohesion was more apparent than real, as in:

A: Well unless you're not a member, if you're a member of TM people do simply because its such a high price to get in there, its like 35 dollars

B: Its like water polo

(2.0 second pause)

A: Why is it expensive?

(Vuchinich op cit)

In this misuse of the unit type of 'matching current to previous talk' it is evident that a similar pattern of responding arises; the effects noted above for clear examples of non-cohesive utterances were replicated. Whilst the dialogues generated within this study were clearly not naturalistic, their bizarre quality is in itself suggestive of an expectation for coherence.

The presence of cohesion between utterances suggests that at a textual level sequencing boundaries arise with some frequency within utterances. This raises some problem for conversational analysts interested both in the temporal patterning and textual features of dialogue, since

" ... although the boundary of a sequence relevent unit and the boundary of a speaking turn commonly coincide, this must be seen as analytically incidental. We are still required to decide which concern will be primary: the organisation of turns per se or, the sequencing of interaction"

(Goffman 1976, p 271)

Whilst Goffman suggests that this issue is theoretically addressable, it seems more likely to be an empirical question, and one of considerable significance. The disjuncture between

these two levels of analysis is mirrored by that extant between conversational analysis, who tend to focus on one level to the exclusion of the other. The specific issue of the inter-relationship of cohesion and temporal structure is addressed in Chapter 8, but the broad issue raised by the existence of different areas of study may be considered here in concluding this review.

Within the province of studies concerned with the influence of non-verbal behaviour in the regulation of speaker switching there is a theoretical preference for the concept of speaker-directed switching in which cues with a specifically turn-allocatory function are displayed. In this review it has been argued that there may be a conceptual distinction to be drawn between the production of signals with the intent that they be 'read' as turn allocatory, and their production as a part of the segmentation of speech, thus emerging as a recurrent and associated feature of speech production. This distinction has profound implications for the construction of temporal patternings, in that the latter formulation re-directs attention to the role of the auditor in the achievement of speaker switching. The close association of non-verbal behaviour and speech demonstrated in a number of studies suggests that a re-examination of the relationship between 'turn-yielding' cues and linguistic features would be fruitful in casting light on the intentionality of such non-verbal behaviour.

A second, and related, area of interest concerns the appearance of interruptions within speech, a phenomenon that can only be understood as the consequence of a mis-placed turn-transition by a speaker-directed turn-system. Systems based on linguistic structuring, in contrast, view interruptions as an organised phenomenon through the regularity they display in their temporal placement. There has been little study of the conditions governing the use of interjections in speech, though variations in the form of interruption employed seem to relate to the characteristics and concerns of interactants.

Two major issues emerge. Firstly it is clear that within the literature on speaker switching there are identifiable schools of thought focussing on differing aspects of the same interactional data to construct their models. Ethnomethodologists consider linguistic aspects of speaker switches and - given the lack of explicit directives to turn-taking within speech - tend to focus upon the listeners' role in regulating turn-transitions. Social psychologists have largely examined non-verbal cues in isolation from their linguistic context, a process which may orient attention to their signalling function by virtue of this decontextualisation. Neither model provides a full explanation of the achievement of temporal patterning. The speaker-cued model cannot account for interruptions as a regular feature of talk; the SSJ model cannot describe the conditions under which turn taking may be inhibited or the mechanisms by which speakers may retain the floor. It would seem important therefore to attempt a synthesis between these accounts through a simultaneous consideration both of the language and non-verbal cues utilised by participants in order to bridge the lacunae within each system.

Such a model would necessarily be concerned with the construction of a range of orderly turn taking patterns incorporating both interruptions and smooth switches. The location of interruptions as regular phenomena focusses attention on the ways in which temporal structure contributes to the process of interaction. This second issue therefore emerges from the first, and whereas the first might be concerned with how differing patterns of turn-taking are achieved the second raises the question of why such variability is present.

In this research conversations between married couples were chosen for study. These dialogues are therefore representative of a class of interaction which is rarely studied. The management of encounters between individuals in long-term and stable relationships is of interest not only in the light of the relative lack of information as to their structure, but also for the contrast between the interactions of strangers and intimates.

The former class of subjects are most often studied whilst engaged in the process of acquaintance, or involved in tasks of high imposed structure. Whilst these situations are of interest in their own right, it is important to consider individuals in whom this process of social negotiation is completed, and where their conversations are of personal relevence. Dialogues which conform to these criteria might therefore be representative of less ritualised and hence more naturalistic forms of talk.

CHAPTER 3

METHOD

Subject recruitment and procedure

The conversations on which the analyses in this study were performed were collected as part of a study of marital interaction conducted by the author. In this study two groups of couples were seen. The first were a group seeking treatment from a marital and sexual guidance clinic, which formed part of a psychiatric out-patient service. A second (control) group was recruited through house-to-house enquiries following an initial contact letter explaining the nature of the research.(1) Of 87 households contacted in this manner 21 agreed to participate, a 24% response rate. These subjects are unlikely to be a representative sample of married couples; the rather demanding nature of the study is likely to have disuaded many potential participants, and the nature of volunteer subjects makes it likely that the couples would differ from a representative sample along a number of psycho-social dimensions such as social class, intelligence and sociability (e.g. see Rosnow and Rosenthal 1976)

Couples were invited to attend the psychology department, where they were met by ADR, and taken to the room where their interactions would be filmed. A number of steps were taken to reduce the obvious stress induced by introducing lay individuals to a filming room within a psychology department. The room itself was somewhat unusually shaped, being five-sided; this reduced the impact of a one-way mirror placed in one of the walls. The room was furnished with easy chairs and colourful posters. The only evidence of recording equipment in the room were small microphones placed on tables between the chairs.

On arrival the couple sat and talked to ADR over a cup of coffee. During this time the general nature of the study was discussed; and they were told that the focus of interest was on the sorts of difficulties that arose in marriage in general, and in their own marriage in particular. In this fashion the two interactions that ensued were presented as vehicles for eliciting ideas

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(1) See Appendix 1.

as to these difficulties, rather than being objects of study in their own right. Following this, the room itself was described, and the nature and purpose of the one-way screen pointed-out. The couple were informed that both video and audio recordings of their interactions would be taken and (although they had previously been informed that this would be the case) their consent for this was obtained. After answering any specific questions, the topic of their first interaction was introduced. The couple were told that they would be asked to listen to, and subsequently discuss, a tape of a couple undergoing therapy. This recording was obtained through the same psychiatric unit from which clinical couples were obtained, and comprised a role-play of conjoint marital therapy conducted by four marital therapists. The tape was produced for teaching purposes as a video presentation, and in this form had been widely judged as a convincing presentation of a rather inarticulate and unhappy couple - 'Bill and Linda'. An audio recording was taken from the video sound track, and subsequently a ten minute portion of the tape was chosen for use in the study. The criterion for its use was, most basically, that it should be clearly audible, and more importantly, that it should present a wide range of problems of a general nature. Two clinical psychologists asked to assess the chosen portion for this quality agreed as to its usefulness, and judged it a realistic presentation.

After informing the couples that they would be listening to a tape of a therapy session, they were asked to read an explanatory sheet (see Appendix 2). This gave details of the couple they were about to listen to, and asked them to discuss the

"... ways in which the couples problems could have arisen, and perhaps the ways in which they could overcome their problems. (You should) also consider ways in which the type of issues the couple bring up are similar to those that you yourselves might have come across, either in your own marriage or in those of your friends or acquaintances".

After they had read the instruction sheet the couple were told that this was not a problem solving exercise; "there are no right or wrong answers, and there are no particular facts or issues that I'm looking for you to bring up. This is essentially a time when you can talk together about yourselves and your marriage, and it may be that there are things on the tape that remind you of issues in your own or friends marriage. If there is anything you feel you want to discuss you should go on and discuss it; you shouldn't feel that you have to get on and discuss the tape completely. This is a time when you can explore any issues that you wish to."

They were then told that the tape would be set running, and that when it ended they would be left to talk together for around twenty minutes. ADR then left the room, and began recording the subsequent interactions.

After this talk - referred to henceforth as the "Bill and Linda" discussions, ADR re-entered the room and discussed with the couple how they felt about the proceedings. A period of around one hour was then taken up with a structured interview of each partner independently. This interview was designed to elicit areas of potential conflict and stress within the marriage. Whilst one partner was being interviewed, the other was taken to a separate room, and given questionnaires to fill-in regarding their perceptions of the marriage and the marital partner.

At the conclusion of each interview it was explained that we were interested in exploring the ways in which the couple handled conflict, and each partner was asked if there were any particular issues that they felt it would be rewarding to discuss together. Since the orientation of the interview was towards a close examination of important areas of life together (such as the quality of attention and affection each partner received, their satisfaction with sex, and their allocation of marital duties and household tasks), a problem was generally identified fairly quickly. On bringing the couple together again, one issue was agreed upon as a focus for a further interaction. It was emphasised that this was, again, a period for exploration, and that the couple should merely talk things over -

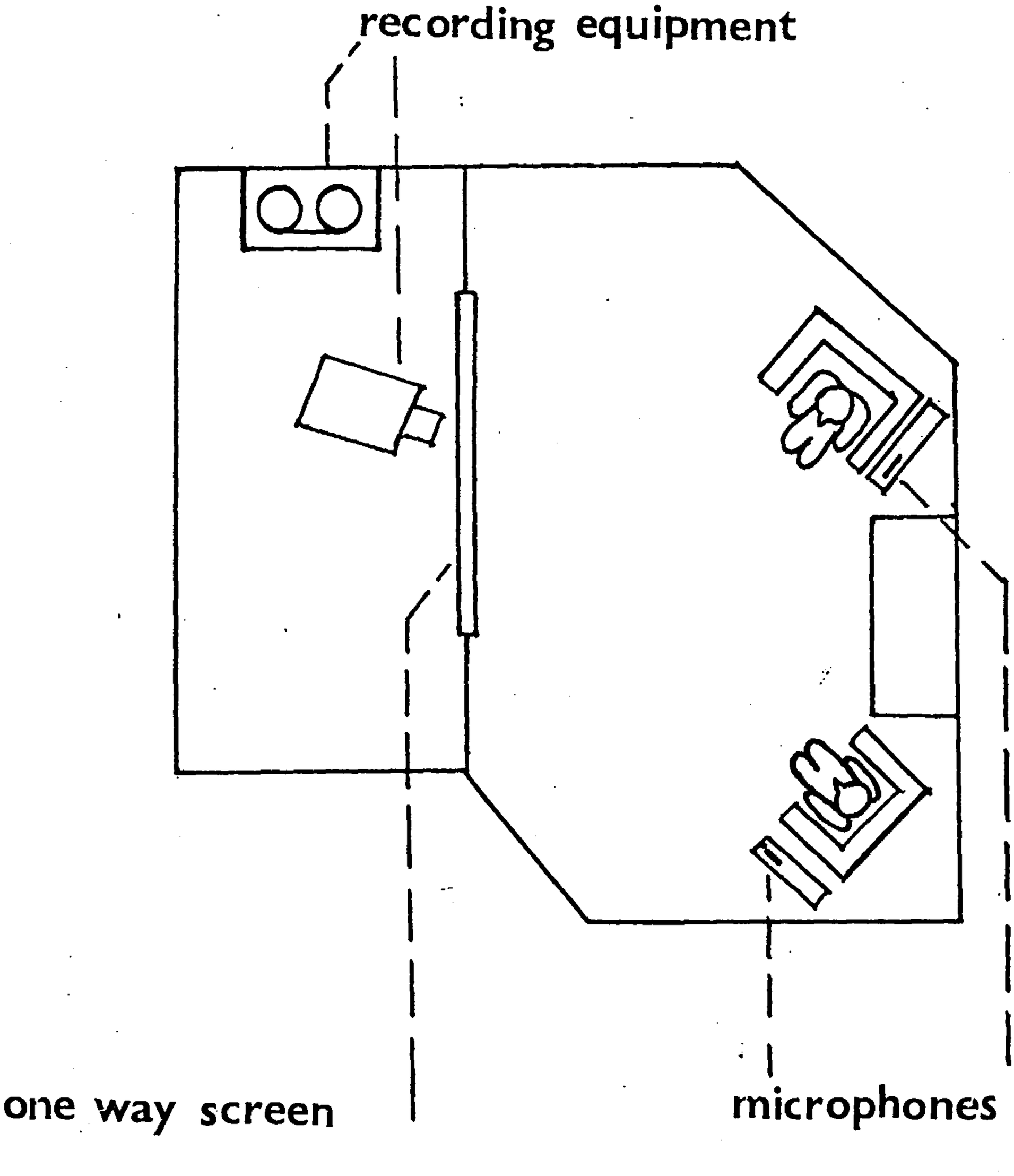
"I don't expect you to come to any conclusion in the time we have available, but I do think you will find the session useful as a period for exploring the various issues involved". Thus, again, the apparent focus of study was not on the ways in which talk is managed, but on the handling of some higher level aspect of talk - discussing a conflict. ADR left the room and the couple were left to discuss the issue for 20-30 minutes. This conversation will be referred to henceforth as the 'conflict' discussion.

The procedure produced two dialogues, both of which are of immediate interest to the couple, and both of which involve talk about issues central to their everyday lives. The conversations which result appear relaxed and informal. Follow-up questions during the de-briefing session at the end of the procedure indicated that most couples felt uneasy about talking to begin with, but became relaxed rapidly after a few minutes. A number of couples stated that they forgot that they were being filmed, and indeed some mentioned that 'it was like talking in your own front room'. Whilst this may be an exaggeration, it can be claimed that the interactions obtained represent a corpus of talk which approaches naturalistic interaction - that is talk unconstrained by the embarrassment of an unfamiliar task, situation or undue self-awareness resulting from filming.

Full video recordings of the interactions were made using a video camera fitted with a wide-angle lens together with a Sony AV3620CE video recorder. A VEL 'Tape Code' timer was used to mix a continuous time display onto the screen. In order to obtain a clear sound record a stereo audio recording of the interactions was made using a Sony TC377 audio tape recorder.

As may be seen from the diagram of the recording situation (Figure 3), one partner was filmed from a position just off head on, whilst the other is viewed almost from the side.

FIGURE 3: L A Y O U T O F R E C O R D I N G R O O M



The couples and their conversations

Of the couples seen three were selected for intensive study. Their selection was based on the following criteria. Firstly they came from the 'happily married' group so as to preclude any unusual conversational styles. Secondly in all of these couples the distribution of talking time seemed about equal, and an impression was given of a content and mature relationship. Lastly their encounters seemed to be relaxed and free from any indications of discomfort due to their awareness of filming. Details of the couples and the concerns they focussed on are given below.

The W's

This couple were in their mid-twenties, and could be described as 'professional' people. The husband trained as a dentist, and met his wife when she worked as an assistant for him. They have recently had a baby, as a result of which the wife now works part-time in a school. The husband worked as a "research dentist", offering treatment as well as researching for a Ph.D. This imposed strains on the marriage, since he was rarely in the position of having very much free time. In addition the arrival of the baby placed the couple under financial pressure. In order to overcome this difficulty the husband worked some of his free evenings, offering private treatment. The central issue for the 'conflict' discussion was Mr. W's work load and commitments - since this reduced the amount of contact he had with his wife - and Mrs.W's unhappiness with the stresses of the new baby. These related back to her husband's work (since he was rarely available to baby sit, and share in the care of the baby) and her frustration at having to do a part time job (because of financial difficulties) when she would rather be a 'full time mother'.

The L's

In this couple Mr.L is in his thirties, and his wife in her mid-twenties. Both partners work, he as a carpet-layer, she as an office worker. Mrs.L. felt that her organising abilities were abused by her husband, since it was she who undertook many of the secretarial duties for her husband's work. Mr.L on the other hand,perceived this arrangement as satisfactory, since he saw Mrs.L as possessing many of the skills necessary to the efficient operation of his job, and which he felt himself to lack. His 'dependency' on her seemed to lie at the core of a number of their difficulties, and formed the substance of their conflict discussion.

The C's

This couple are in their late twenties, and both partners are teachers. The husband came from a working-class background, whereas the wife was from a middle-class home. Much of their conflict discussion centred on the problems that this difference in background imposed, since although Mr.C was someone who had 'out-grown his roots', he and his wife still had a lot of contact with his family. The husband tended to minimise the problems that his wife encountered when they visited his parents, but did seem ambivalent as to his own feelings towards them. Thus the conflict discussion took the form of an exploration of both partners attitudes towards their respective families.

In all of the studies to be reported observations are based upon the two interactions from each couple, giving a total of six conversations. From each encounter approximately 10-15 minutes of talk was selected from the mid-portion of the interactions, after at least 5 minutes of conversation had elapsed. These extracts were transcribed by ADR using the stereo audio recording of the interactions. This transcript recorded:

(a) the content of talk from each partner, including all repetitions, false starts, filled pauses and

(b) the precise placement of each participant's speech in relation to the other. Thus the location of all interruptions and back channel interjections (defined in Chapter 4) were recorded with respect to the speech flow of the partner.

The difficulty of accurate transcription resulted in the production of a number of drafts, each a check on the accuracy of the previous record. This process acted as a form of reliability testing; no replication transcript was made by another worker. The transcrips were compared with the tapes on numerous occasions in the course of the research; only minor modifications were necessary, suggesting the accuracy of the procedure.

CHAPTER 4

BEHAVIOURAL CHARACTERISTICS OF THE DIALOGUES

This chapter not only aims to present some of the basic data from which substantive studies follow, but also to describe some of the important behavioural characteristics of the dialogues. The meshing of interactants' turns at talk, the patterning of gaze - as an important non-verbal regulator of encounters (Argyle and Cook 1976) - and the content of the dialogues are considered. There therefore follows:

1: An analysis of the temporal structure of the participants' exchanges with reference both to the patterns of switching style in each of two conversations and across couples

2: An examination of the gaze patterns present across the dialogues with particular reference to any co-variation of this behaviour with respect to speaker-auditor roles and the sex of participants.

3: A content analysis of the talk in the dialogues.

(A) FORM OF SPEAKER SWITCH UTILISED IN THE DIALOGUES [1]

Each utterance was classified as a smooth speaker switch or as an interruption according to the following criteria.

SMOOTH SPEAKER SWITCHES were defined as an exchange of the speaker role where (a) there was no simultaneous speech and (b) the utterance being terminated was complete in every sense - syntactically, intonationally and ideationally (thus the turn ending was marked by at least one turn yielding cue from the Duncan schema (Duncan 1972))

1: From Table 1 it can be seen that each couple and dialogue contribute approximately equal numbers of utterances to the total corpus, though the length of each extract varies. It should be noted that at earlier stages of the research a slightly smaller corpus was utilised, and the figures given in

TABLE 1 : LENGTH OF EXTRACTS AND NUMBER OF UTTERANCES EXAMINED IN EACH DIALOGUE AND FOR EACH COUPLE

COUPLE	BILL & LINDA		CONFLICT	
	LENGTH EXTRACT	NO.UTTERANCES	LENGTH EXTRACT	NO. UTTERANCES
the W's	14 mins 33 secs	117	15 mins 16 secs	155
the L's	11 mins 2 secs	111	17 mins 33 secs	121
the C's	9 mins 49 secs	95	9 mins 19 secs	123

INTERRUPTIONS were defined according to the schema developed by Ferguson (1975). This scheme identifies four classes of interruption - Overlaps (OV), simple Interruptions (I), Silent Interruptions (SI) and Butting-in Interruptions (BI). These classes are defined as follows:

Overlaps - In this form of interruption "simultaneous speech is present and the initiator of simultaneous speech takes the floor. However, there is no apparent break in continuity in the first speakers utterance" (ibid p 296). The first speaker therefore goes on to complete his/her utterance, as in:

(The W's conflict; W12-W13; the wife is detailing the work she has done that day)[2]

W ... I tidied the bathroom, I put the baby to bed
H Yeah er and what // did I do
W You don't get enough practice that's your problem

Simple interruptions - In this non-fluency, both simultaneous speech and a break in the continuity of the first speakers utterance are present, as in:

(The W's conflict: W41-H41; discussing 'going out')

H Yeah in other words // what you're saying is
W It's being able to spend an hour in the pub (etc)

---

1 (cont'd)

this table represents the extended data base. Within each study some indication will be given of the size of corpus employed in order to avoid confusion over discrepant numbers.

2: SYMBOLS USED:

// point of interruption
underlining indicates simultaneous speech

Silent Interruptions are defined as a speaker switch where there is no simultaneous speech, but where the first speakers utterance is incomplete. Thus:

(The W's conflict, W20-H20)

W See you you //
H All right well what about work and the domestic situation ...

Butting-in Interruptions are defined as an "interruption or break in verbal continuity in one speakers output ... simultaneous speech is present ... but the initiator of simultaneous speech does not take the floor. Instead he/she breaks off before completing his/her utterance" (ibid p 297). Thus:

(The W's conflict; continuing the example given above for simple interruption)

W It's being able to spend an hour in the pub or //
going or going
H It's like going out
W for a walk without feeling you ought to be sitting down working (etc)

In addition to these categories a sub-division of the category of Overlaps was identified in which the period of simultaneous speech covers only the final word of the first speakers talk. These are defined as:

Precision-placed Overlaps (P/OV) Thus:

(The W's conflict; Wife is complaining about doing housework whilst her husband reads newspapers)

W ... that's when I resent having to wash the wi//ndows
H When do I have time to read Rolling Stone dear?

Whilst simultaneous talk is present at the endings of such interruptions, and the first speakers utterance is completed (thereby placing such exchanges into the category of Overlaps,) the placement

of the overlap is close to a transition relevent location (as defined in Sacks et al 1974), which is actualised to a turn ending. The short duration of the succeeding overlap seems to distinguish P/OV's from the larger set of interruptions where extended periods of overlapped talk are present. It should be made clear, however, that precision-placed overlaps are a sub-set of the more broadly defined class of overlaps. Where P/OV's are included with OV's, this will be indicated as "OV + P/OV"; in all other indications the two classes will be analysed spearately as "OV" and"P/OV".

Results:

Table 2 presents the frequency of smooth switches and interruptions for each couple and each dialogue. It can be seen that the rate of interruption is rather higher than is often reported (see review), with a range of 41.3% - 65.3%.

Table 3 shows rate of smooth switching and interruption of each participant to the conversations. In Table 4 the sex of the participants is considered; no significant differences in the type of speaker switch used in the Bill and Linda and Conflict dialogues was apparent. (Mean percentage rate of interruptions in the Bill and Linda and Conflict discussions 53.3% and 47.5% respectively; Wilcoxen test T = 3, N = 6, n.s.) From Table 4 it can be seen that husbands and wives showed no significant difference in the frequency of interruptions or smooth switches, in either interactions. (Mean percentage rate of interruptions in Bill and Linda dialogue for husbands and wives respectively 59.9% and 53.6%, Mann Whitney test, U = 3 (n1n2 = 3,3) n.s.) Rate of interruptions in Conflict dialogue for husbands and wives respectively 42.4% and 52.5%; Mann Whitney test, U = 1 (n1n2 = 3,3) n.s.)

The specific form of interruption utilised within each dialogue and by each couple is shown in Table 5, and within each dialogue in Table 6. The most frequent interruption type in all the dialogues is the overlap (OV), with the combination of the overlapped and precision-placed overlapping interruption accounting for approximately half the disfluencies in every couple. Break-in interruptions seem least frequent across all the couples, with some variation in frequency of simple and silent interruptions across participants.

An important source of variance in the differential rate of interruption type seems to be the dialogue itself, there being a significant difference in the frequency of interruption types when the Bill and Linda and Conflict dialogues are contrasted (χ^2= 11.04, df 4 p<0.05). Much of this significance is attributable to the increased frequency of simple interruptions in the Conflict discussion as contrasted with the Bill and Linda dialogue (32.3%

and 18.7% of all interruptions respectively; chi-squared = 8.61 df 1 p 0.01). This increased usage of simple interruptions is apparent within each couple, and seems to relate to the content of the discussions. (see Chapters 4 and 7). The finding that overlapped interruptions are the most common interruption type is in accord with the findings of Ferguson (1977) and Beattie (1981 c). However, approximately a third of these overlaps are exemplars of the 'precision-placed overlap(, suggesting that this class of interruption is relatively common. The relative frequency of the various interruption types seems stable over the two dialogues, with the clear exception of the simple interruption, as noted above.

TABLE 2: FREQUENCY OF SMOOTH SWITCHING & INTERRUPTIONS FOR EACH COUPLE AND DIALOGUE

(Percentages in Brackets)

COUPLE	BILL & LINDA		CONFLICT	
	SMOOTH SWITCHES	INTERRUPTED	SMOOTH SWITCHES	INTERRUPTED
L'S	58 (52.3)	53 (47.7)	71 (58.7)	50 (41.3)
W'S	60 (51.3)	57 (48.7)	82 (52.9)	73 (47.1)
C'S	33 (34.7)	62 (65.3)	57 (46.3)	66 (53.7)
ALL COUPLES	151 (46.7)	172 (53.3)	210 (52.6)	189 (47.4)

TABLE 3: FREQUENCY OF SMOOTH SWITCHING & INTERRUPTIONS FOR EACH PARTICIPANT AND DIALOGUE

(percentages in brackets)

COUPLE	BILL & LINDA		CONFLICT	
	SMOOTH SWITCHES	INTERRUPTED	SMOOTH SWITCHES	INTERRUPTED
MR.L.	26 (49.1)	27 (50.1)	39 (65.0)	21 (35.0)
MRS.L.	32 (55.2)	26 (44.8)	32 (52.4)	29 (47.5)
MR.W.	29. (50.0)	29 (50.0)	45 (57.7)	33 (42.3)
MRS.W.	31 (52.5)	28 (47.5)	37 (48.1)	40 (51.9)
MR.C.	18 (38.3)	29 (61.7)	31 (50.1)	30 (49.9)
MRS.C.	15 (31.3)	33 (68.7)	26 (41.9)	36 (58.1)
MEAN %AGE	46.7	53.3	52.5	47.5
STANDARD DEVIATION	9.25	9.25	8.01	8.01

Wilcoxen test on proportion of interruptions in Bill and Linda dialogue vs proportion of interruption in Conflict dialogue: T = 3 N = 6 n.s.

TABLE 4: RATE OF SMOOTH SWITCHING & INTERRUPTIONS BY HUSBAND AND WIVES IN EACH DIALOGUE AND OVERALL

COUPLE	BILL & LINDA		CONFLICT		OVERALL	
	Husbands	Wives	Husbands	Wives	Husbands	Wives
L'S	50.1	44.8	35.0	47.5	42.5	46.2
W'S	50.0	47.5	42.3	51.9	46.2	49.7
C'S	61.7	68.7	49.9	58.1	55.8	63.4
OVERALL	59.9	53.6	42.4	52.5	48.2	53.1

Testing significance of difference in proportion of interruptions used by husbands and wives by the Mann-Whitney Test.

in Bill and Linda dialogues	U = 3 (n1n2:3,3)	n.s.
in Conflict dialogues	U = 1 (n1n2:3,3)	n.s.
in both dialogues overall	U = 1.5 (n1n2:3,3)	n.s.

TABLE 5: CLASSES OF INTERRUPTION UTILISED BY EACH COUPLE IN EACH DIALOGUE

COUPLE	C'S	C'S	L'S	L'S	W'S	W'S
DIALOGUE	B&L [1]	CON	B&L	CON	B&L	CON
INTERRUPTIONS						
OV	28 (45.2)[2]	25 (37.9)	15 (28.3)	15 (30.0)	22 (38.6)	19 (26.0)
P/OV	11 (17.7)	16 (24.2)	11 (20.8)	7 (14.0)	4 (7.0)	9 (12.3)
OV+P/OV	39 (62.9)	41 (62.1)	26 (49.1)	22 (44.0)	26 (45.6)	28 (38.4)
I	11 (17.7)	18 (27.3)	8 (15.1)	16 (32.0)	13 (22.8)	27 (36.9)
SI	7 (11.3)	4 (6.1)	16 (30.2)	11 (22.0)	12 (21.1)	12 (16.4)
BI	5 (8.1)	3 (4.5)	3 (5.6)	1 (2.0)	6 (10.5)	6 (8.2)

1: B&L - Bill and Linda
CON - Conflict

2: Figures in brackets gave frequency as a percentage of total interruptions

TABLE 6: CLASSES OF INTERRUPTION UTILISED IN EACH DIALOGUE

	BILL & LINDA	CONFLICT	BOTH DIALOGUES
SMOOTH	151	215	366
INTERRUPTIONS			
OV	65 (38.0)	59 (31.2)	124 (34.44)
P/OV	26 (14.6)	32 (16.9)	58 (15.55)
OV+P/OV	90 (52.6)	91 (48.1)	181 (50.27)
I	32 (18.7)	61 (32.3)	93 (25.83)
SI	35 (20.4)	27 (14.3)	62 (17.22)
BI	14 (8.2)	10 (5.3)	24 (6.67)

chi-squared on rate of all interruptions in Bill and Linda vs conflict dialogues - $X^2 = 11.04$ df 4 $p < 0.05$

chi-squared on rate of simple interruptions vs all other interruptions in Bill & Linda vs conflict discussion - $X^2 = 8.61$ df 1 $p < 0.01$

DISCUSSION:

Reference to Figure 4 indicates that the role of interruption obtaining in this study is greater than that usually found in dyadic interactions recorded in the laboratory. However Beattie (1981 c) found an interruption rate of 45.2% in political interviews, suggesting that turn taking style may be influenced by task, setting and the nature of the participants. Thus it may be significant that in the present research both participants were well acquainted, whereas the other studies employed strangers 'getting to know one another' or individuals with rather specific role relationships. In all couples, and across all individuals, bar one, approximately half of all speaker switches were initiated with an interruption. This rather high rate may relate to the intimacy of the participants who were asked to engage in tasks pertinent to themselves. The resulting discussions have the character of lively and 'engaged' conversations. Appeal to everyday experience suggests that such dialogues are often characterised by a high level of simultaneous speech, and that a markedly low rate of interruption would be noteable between intimates.

The topic of discussion might have biased the conversations towards a confrontatory and challenging style, though it is unclear how this might have influenced the rate of interruptions. It is noteable that the Conflict discussion - which might be expected to have a higher rate of interruptions on the basis of its topic - has no more "disfluent" switches than the Bill and Linda talks.

A second characteristic of the dialogues is the lack of apparent difference in turn taking style between the men and women. As has been noted in the introductory review, women have sometimes been found to interrupt men significantly less frequently than men interrupt women. Again it seems most likely that such sex differences would be enhanced by the pairing of relative strangers or the meeting of individuals in task-related situations.

Taken together there is some suggestion that the corpus reflects a rather informal and naturalistic set of dialogues which

FIGURE 4: REPORTED INTERRUPTION RATES

SOURCE	% INTERRUPTED	NUMBER OF UTTERANCES EXAMINED
Beattie (1978)	6.5	246
Duncan (1972)	23.4	100
Duncan and Fiske (1977)	32.8	243
Rutter and Stephenson (1977)	51.2*	£
Beattie (1981 c)	45.2	146

* Figure computed on basis of reported incidence of 'simultaneous speech' and may therefore include back channels.

£ figures not given

may well be expected to demonstrate differences from the more formal data often collected in studies of conversations.

B: PATTERNS OF GAZE

1) Definitional Problems

A preliminary problem concerns the definition of the term 'gaze', since whilst certain workers have used eye-contact (EC) between participants as their measure (Argyle and Cook 1976) it is by no means clear that it is necessarily the most useful index of looking in a social context. A number of studies have attempted to measure the ability of subjects to accurately judge the direction of gaze; generally judgements are found to be inaccurate, particularly in the detection of gaze directed to the eyes (e.g. von Cranach, cited by Vine 1971). Two features are of particular importance; firstly head direction will bias the reported direction of gaze, such that estimates of eye gaze increase when the head is oriented towards a fellow participant. Secondly estimates of the direction of gaze tend to become rather inaccurate with increasing separation of subjects. Stephenson and Rutter (1970) employed a confederate who looked at subjects' eyes, ears or shoulders at distances of 0.61, 1.83 or 3 metres. With increasing distance all gaze directions were perceived as facial gaze.

Since gaze direction may not be accurately judged it would not seem critical to consider only EC. Von Cranach and Ellgring (1973) note that

> "... the partners gaze into the eyes cannot be objectively recognised, and is no better recognised than gaze at other parts of the face ... though subjectively eye contact remains of importance" (p 441)

This seems to suggest that, for measurement purposes, direct eye-contact need not be the variable of specific interest.

A consideration of appropriate measures for visual behaviour should be made with reference to the functions which such behaviour would be expected to fulfill. For the person looking we might make the assumption that information regarding a co-participant is being sought. In this respect Gibson and Pick's (1963) finding that a glance delivered from an angle of 70^{o} can be accurately received suggests that full facial gaze is not a necessary indicant of attention. For the recipient of gaze it is clear that eye contact is not a pre-requisite to the experience of being looked at. It therefore remains arguable whether an orientation towards the other is of more social significance than eye contact. Von Cranach (1971) notes that changes in gaze are accompanied by changes in head direction - in effect suggesting that it is such shifts in orientation which will reflect changes in gaze, and which will therefore be of social significance rather than gaze per se.

Measurement of Gaze

In addition to problems of definition (and perhaps related to it) are problems of recording of gaze, since a number of methods varying in their intrusiveness have been utilised. Direct observers in the room with interactants, or behind a one-way screen, have been used in a number of studies (e.g.Argyle and Ingham 1972), and particularly before the advent of video technology this method was widely used. This technique has some advantages over video in that it gives an immediately generated record of gaze patterns throughout the dialogue. However it does not readily permit checks on the reliability of scoring, nor does it offer the possibility of reanalysing portions of the interactions.

More importantly it may lead to inaccurate recordings of the gaze present. Rime and McCusker (1976) distinguished the reliability with which judgements of gaze may be made from the validity of these judgements, or the correspondence between the gaze actually present and that recorded. This factor is not determined by indices of inter-observer agreement, and these workers carried out studies of the accuracy with which gaze could

be detected under various conditions of observation given programmed gazing behaviour by subjects. The study contrasted judgements of a co-participant in interaction - the gaze receiver (GR) with a 'direct sight observer' (DSO) seated next to the GR, and two outside observers. One of these viewed the interaction through a one-way screen (OWO) and the other via a video monitor. Comparison of the programmed record with the observers recordings indicated that the GR, DSO and video (TV) observer presented an equivalent accuracy in their recordings, though the accuracy of the TV observer was lower than that of the other receivers. However the accuracy of the OWO was significantly lower than any of the other methods, and was more likely to be influenced by increased distance from the interactants. Since the results obtained by the video observer were statistically equivalent to those obtained from both the GR and the DSO, this method would seem both appropriate and valid.

A variety of different camera positions are possible with video; thus Duncan (1972) utilised a single camera with a wide angle lens at 90 degrees to the sender-receiver axis (as in this study) whereas greater accuracy might be thought to result from aligning two cameras with this axis. Beattie and Bogle (1981) contrasted the accuracy of recording gaze using interactants programmed for this behaviour, and utilising three filming techniques. In the first (A) the camera was fitted with a wide angle lens and oriented at 90 degrees to the sender-receiver axis. In the second (B) two cameras behind a one-way screen were aimed at each participant, and the two pictures mixed onto a split-screen picture. In technique C the cameras were placed behind each interactant. Observers monitored the resulting videotapes; highest reliability and validity was found in technique C, though the mean accuracy for technique A was 70.5% comparing favourably with the 77.5% accuracy obtained in technique C.

Most studies of gaze do not have an accurate record of the actual gaze present, and rely upon inter-observer reliability estimates in order to gauge the accuracy of observation. Certain studies claim very high reliability for their scoring - Exline (1963)

claims an inter-observer reliability of 0.93 based on total scores. However, rather few studies attempt to check that each observer is actually recording the same periods of gaze. Vine (1971) examined the amount of agreement within specified time units, finding that the percentage agreement was in the region of 66-69% with a 0.25 second unit, whereas it increased to 70-74% when a two second unit was employed. It would seem that despite the difficulties of definition and measurement technique a respectable accuracy of recording can be achieved.

METHOD

The six conversations were transcribed[1] and a record produced of the following features:

1) The full verbal content of the utterances
2) The length of each utterance
3) The location and precise time of each floor switch, and in the case of interruptions the point during the previous speakers utterance at which the disfluency arose.
4) All back-channels, as defined by Duncan (1972) (see review)

All periods of gaze during speech were marked against the transcript, such that a record was available of the location of changes of gaze state with respect to the words being spoken at such points. In addition the length of each period of gaze was assessed using the timings marked onto the video screen. Gaze was considered to be present except where:

1) The head direction was shifted out of the line of sight connecting one interactant with his/her partner.

2) The position of the eyes unambiguously suggested gaze at some part of the partner away from the upper trunk or head, or towards some object in the room.

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1 The corpus utilised was smaller than that reported earlier in Section A.

These criteria probably result in an over-estimate of the time spent in facial gaze, since a more obvious state of 'no-gaze' is required in order for such behaviour to be recorded. This seems an appropriate bias to adopt, however, since it does seem that gaze towards the facial region will be adequate to the detection of movement and changes in expression, and the collection of social information. There is no empirical evidence to suggest that it is eye-contact which should form the criterion for the presence of gaze. In addition it is probable, given the research examined above, that gaze aversion would need to be more than the loss of eye contact in order to be noticeable, and therefore of interactional significance.

A complete record of gaze state was made solely by ADR. Two one-minute extracts were scored by an independent psychologist judge. Further reliability checks were made through a re-analysis of six one-minute extracts (two per couple) chosen at random from the video tapes by stopping the tape as it was run through, and scored without reference to the original transcript. Three reliability measures were used.

1: The number of gaze shifts.
2: The total length of periods of gaze.
3: A more rigorous measure obtained by dividing the periods examined into 0.25 second units, and scoring the number of disagreements within each unit.

The results of this procedure are given in Table 7 for inter-observer consistency, and in Table 8 for self-consistency. Agreement between observers considered within 0.25 second units was 83.3% overall, suggesting a satisfactory degree of reliability. Comparable reliability figures were obtained for self-consistency using this criterion, with a mean percentage agreement of 79.7% (range 71.7% - 85.2%). These figures compare favourably with reliability estimates obtaining in this area (Argyle and Cook 1976 p 40).

Prior to presentation of the data, it is necessary to define certain of the terms used in this section. Gaze has been defined in the methodology section; some confusion might arise however, where reference is made to 'time spent in gaze'. Here 'gaze' is taken as those periods of time spent by one partner looking at the other, this does not imply that both partners are looking at one another at the same time. This state is referred to as 'mutual gaze'. Thus periods of 'gaze' will include those times both where mutual gaze is present, and where only one partner is looking at the other.

Rutter and his co-workers (Rutter, Stephenson, Lazzerini, Ayling and White 1977, Lazzerini, Stephenson and Neave 1978) have suggested that mutual gaze is simply a product of individual looking - that is individuals do not actively seek out mutual gaze; rather it arises simply as gazes meet. They suggest that the following formula should predict the amount of mutual gaze:

$$\frac{\text{Amount of gaze by husband} \times \text{Amount of gaze by wife}}{\text{duration of the encounter.}}$$

RESULTS

Table 9 shows the overall distribution of gaze by each subject, according to the dialogue being examined. (Hence these measures are not made with respect to the speaker state). The amount of gaze present in these dialogues is rather high (range 43.8% to 89.5% ; mean percentage gaze in conflict discussion 82.3%; mean percentage gaze in Bill and Linda discussion 71.2 %; overall percentage gaze 76.8%). Whilst there is a trend towards there being less gaze in the Bill and Linda discussion, this is not significant (Wilcoxon test $T = 3$, $N = 6$, n.s.)

In examining gaze levels during the occupancy of speaking and listening roles the events occuring during switching pauses were ignored, since it was not possible to allocate these periods to any participant in any rigorous and consistent fashion. Thus the time taken up by any one participant's talk was considered to constitute his/her speaking time, and that time taken up by his/her partners talk would constitute the time during which that participant was a listener. Table 10 presents the results of this

analysis with respect to any differences arising as a consequence of speaking or listening per se.

From Table 10 it may be seen that whilst occupying a speaking turn there is significantly more gazing in the Conflict discussion than is the case in the Bill and Linda dialogues (mean levels of gaze 76.4 % and 64.7% respectively; Wilcoxon test, $T = 0$, $N = 6$, $p < 0.05$). Whilst occupying the listening role there is a non-significant trend in the same direction. (Gaze levels = 86.8 % and 75.8% respectively, Wilcoxon test $T = 3$, n.s.).

Certain workers (e.g. Nielsen 1962, Kendon 1967) have suggested that the amount of gazing during the occupancy of a speaking turn is less than that arising when listening. This proposition is examined by the data in Table 11a where it can be seen to hold for all participants without exception (mean percentage gaze as speaker and listener respectively is 70.5 % and 81.2 %; Wilcoxon test $T = 0$, $N = 12$, $p < 0.05$)

Table 11b shows the mean level of gazing by husbands and wives; there is some suggestion that the level of gazing by the women is lower than that shown by their husbands, though this difference does not reach significance (Mean level of gaze for husbands and wives respectively in speaker role = 73.8% and 67.4%; Mann Whitney test U = 4 (n1n2, 3,3) n.s.; in listener role levels of gaze = 86.3% and 76.2% respectively, Mann Whitney test U = 2 (n1n2 3,3) n.s.).

Examining the patterning of gazing more closely, Tables 12 and 13 present an analysis of the length of time for which participants averted their gaze; it is possible to consider whether any differences in the overall amount of gazing arise through the number of gaze shifts, or a change in the length of each look. From Table 12 it would seem that there is no consistent pattern to the length of no gaze periods when the two dialogues are compared; whilst certain individuals show significant differences in the length of their gaze aversions, these do not lie in a consistent direction. Similarly reference to Table 13 shows that the lengths of gaze aversion periods are not significantly different from one another when speaker and listener states are contrasted. Again

certain individuals show significant differences in their length of gazing, but these differences do not lie in the same direction.

Table 14 shows the number of gaze shifts arising within the two dialogues and with respect to the roles of speaker and listener. There are significantly more gaze shifts in the Bill and Linda discussion than during the Conflict dialogue whilst in the speaker role (mean number of shifts = 36.5 and 27.0 respectively, Wilcoxon test $T = 0$, $n = 6$, $p < 0.05$.) This difference reduces to a non-significant trend in the same direction when the number of shifts in the listener role are considered. (Mean number of shifts = 21.3 and 14.7 in Bill and Linda and Conflict dialogues respectively, Wilcoxon test $T = 3$, $n = 6$ n.s.). During occupancy of the speaking role.

Considered across both dialogues there are significantly more gaze shifts when occupying the speaking than when in the auditor role (mean number of shifts = 63.3 and 36.2 respectively Wilcoxon test $T = 1$, $n = 12$ $p < 0.05$). Taken with the lack of significant difference in the duration of gaze periods reported above, this would suggest that such differences in levels of gaze both between the two dialogues and across the speaking and listening roles are attributable to a greater number of periods of looking, rather than there being a tendency to look for longer.

Finally Table 15 shows the length of time during which the couples were in mutual gaze - that is both partners are looking at one another. With the exception of the W's "Bill and Linda" discussion these values are all rather high (range 23.5% to 78.5%) The application of Rutter et al's chance formula shows a perfect rank correlation between the predicted and observed levels of mutual gaze within conversations. Since these samples are rather small, consideration of each conversation as independent - that is as representing an independent test of the relationship between observed and predicted levels of gaze, despite the replication of couples within such an analysis - renders a correlation of 0.83. The formula would therefore seem to predict the empirical findings with some reliability.

TABLE 7: INTER-OBSERVER CONSISTENCY IN SCORING GAZE ACROSS TWO ONE-MINUTE EXTRACTS.

1) Number of Shifts

	ADR	Independent Judge
Extract 1	5	5
Extract 2	6	5

2) Length of gaze (seconds)

	ADR	Independent Judge
Extract 1	40.7	43.4
Extract 2	30.2	29.9

3) Number of diagreements over 0.25 second units

		Percentage Agreement
Extract 1	38	84.2%
Extract 2	42	82.5%
Combined	80	83.3%

TABLE 8: TEST-RETEST RELIABILITY FOR GAZE OVER SIX ONE-MINUTE EXTRACTS

(a) Number of gaze shifts

		original	retest
C's	1	5	4
	2	8	5
L'S	1	4	6
	2	5	4
W's	1	6	6
	2	9	9
Overall		37	34

(b) Total length periods of gaze (secs)

		original	retest
C's	1	41.9	41.00
	2	42.8	42.0
L's	1	41.0	38.1
	2	48.4	56.3
W's	1	46.0	42.5
	2	34.2	41.9
Overall		249.0	258.6

Wilcoxon test on test-retest differences T = 11, N = 6, n.s.

(c) Observer self-consistency Calculated by dividing periods of examination into 0.25 second units and counting disagreements within each unit.

		No. disagreements (units)	Total units	%age agreement
C's	1	33	224	85.2
	2	32	216	85.2
L's	1	59	240	75.4
	2	52	260	79.9
W's	1	37	206	82.1
	2	68	240	71.7
Overall		281	1384	79.7

TABLE 9: OVERALL DESCRIPTION OF GAZE DISTRIBUTION BY SUBJECT FOR EACH DIALOGUE

COUPLE & STATUS	CONFLICT			BILL & LINDA		
	TIME SPENT IN GAZE (secs)	LENGTH DIALOGUE (secs)	%AGE TIME GAZING	TIME SPENT IN GAZE (secs)	LENGTH DIALOGUE (secs)	%AGE TIME GAZING
THE W'S						
MR.W.	569.9	656.3	86.8	272.8	622.8	43.8
MRS.W.	475.7	656.3	72.5	374.8	622.8	60.2
THE C'S						
MR.C.	456.0	532.0	85.7	447.4	588.0	76.1
MRS.C.	421.7	532.0	79.3	490.0	588.0	83.3
THE L'S						
MR.L.	616.6	688.9	89.5	519.1	661.0	78.5
MRS.L.	551.3	688.9	80.0	561.9	661.0	85.0

MEANS

DIALOGUE	TIME SPENT IN GAZE (secs)	LENGTH DIALOGUE (secs)	%AGE TIME GAZING
BILL & LINDA	2666.0	3743.6	71.21
CONFLICT	3091.2	3654.4	82.34
OVERALL	5757.2	7498.0	76.78

Wilcoxon test between time gazing in Bill & Linda vs time gazing in Conflict: T = 3 N = 6 n.s.

TABLE 10: LEVELS OF GAZE IN SPEAKER AND AUDITOR ROLES IN EACH DIALOGUE

GAZE IN SPEAKER ROLE (all figures percentages)

COUPLE		BILL & LINDA	CONFLICT*
THE W'S	H	55.6	79.4
	W	35.9	67.4
THE C'S	H	72.4	77.5
	W	68.7	74.4
THE L'S	H	77.0	80.8
	W	78.7	79.3
MEAN		64.7	76.4

GAZE IN LISTENER ROLE (all figures percentages)

COUPLE		BILL & LINDA	CONFLICT£
THE W'S	H	69.2	95.9
	W	42.5	69.5
THE C'S	H	82.0	96.3
	W	90.2	83.1
THE L'S	H	79.2	94.9
	W	91.6	80.2
MEAN		75.8	86.6

* Wilcoxon test = T = 0, N = 6, $p < 0.05$

£ Wilcoxon test = T = 3, N = 6, n.s.

TABLE 11A: LEVELS OF GAZE IN SPEAKER AND AUDITOR ROLES

			%AGE GAZE AS SPEAKER	%AGE GAZE AS LISTENER
THE W'S	HUSBAND	CONF'T	79.4	95.9
		BILL/L'A	55.6	69.2
	WIFE	CONF'T	67.4	69.5
		BILL/L'A	35.9	42.5
THE C'S	HUSBAND	CONF'T	77.5	96.3
		BILL/L'A	72.4	82.0
	WIFE	CONF'T	74.4	83.1
		BILL/L'A	68.7	90.2
THE L'S	HUSBAND	CONF'T	80.8	94.9
		BILL/L'A	77.0	79.2
	WIFE	CONF'T	79.3	80.2
		BILL/L'A	78.7	91.6
MEAN			70.59	81.22
STANDARD DEVIATION			13.0	15.4

%age gaze as speaker vs %age gaze as listener;
Wilcoxon test $T = 0$, $N = 12$, $p < 0.05$

TABLE 11 B: MEAN LEVELS OF GAZE BY SEX OF PARTICIPANT AND SPEAKER-AUDITOR ROLE

	SPEAKER	LISTENER
HUSBANDS	73.8	86.3
WIVES	67.4	76.2

Mann-Whitney tests:

Between levels of gaze of husband and wives as speakers $U=4(n_1n_23,3)$ n.s.

Between levels of gaze of husbands and wives as listeners $U=2(n_1n_23,3)$n.s.

TABLE 12: MEAN DURATION OF PERIODS OF GAZE AVERSION BY DIALOGUE (IN SECONDS)

COUPLE	SPEAKER		LISTENER	
	BILL & L'A	CONFLICT	BILL & L'A	CONFLICT
THE W'S				
H	2.4	2.0	3.0	1.6
W	4.0	3.5	2.8	2.1 *
THE C'S				
H	2.5	2.3	2.7	1.0
W	2.5	2.3	2.3	2.7 *
THE L'S				
H	1.9	2.4	3.0	2.1
W	2.2	3.1 *	2.5	3.9 *

Significance Levels

All differences between dialogues non significant except those marked *; significant at $p<0.05$ by Mann Whitney test as an approximation to a randomization test (Hersen and Barlow 1976)

TABLE 13: MEAN DURATION OF PERIODS OF GAZE AVERSION BY SPEAKER - STATE AND DIALOGUE

COUPLE			SPEAKER	LISTENER
THE W'S	H	CONFLICT	2.0	1.6 *
		BILL & L'A	2.4 *	3.0 *
	W	CONFLICT	3.5	2.1 *
		BILL & L'A	4.0	2.8 *
THE C'S	H	CONFLICT	2.3	1.0
		BILL & L'A	2.5	2.7
	W	CONFLICT	2.3	2.7
		BILL & L'A	2.5	2.3
THE L'S	H	CONFLICT	2.4	2.5 *
		BILL & L'A	1.9	3.0 *
	W	CONFLICT	3.1	3.9
		BILL & L'A	2.2	2.1
MEAN			2.59	2.48

(a) Overall speaker-listener differences non-significant, Wilcoxon test (T = 28, N = 23, n.s.)

(b) Individual cases: * indicates $p<0.05$ by Mann Whitney U test, where this test approximates to a randomization test (Hersen and Barlow 1976)

TABLE 14: NUMBER OF GAZE SHIFTS BY SPEAKER / LISTENER ROLE AND BY DIALOGUE

	SPEAKER		LISTENER		OVERALL AS SPEAKER	OVERALL AS LISTENER
	BILL & LINDA	CONFLICT *	BILL & LINDA	CONFLICT £		
MR.W.	33	26	35	11	59	46
MRS.W.	58	36	32	29	94	61
MR.C.	31	21	25	9	52	34
MRS.C.	35	24	8	13	59	21
MR.L.	40	30	12	9	70	21
MRS.L.	22	25	16	18	45	34
MEAN	36.5	27.0	21.3	14.67		

MEAN NUMBER OF SHIFTS AS SPEAKER 63.2 (S.D. 17.2)
MEAN NUMBER OF SHIFTS AS LISTENER 36.2 (S.D. 15.4)

Wilcoxen test T = 1, $p < 0.05$

* Wilcoxon test, T = 1, N = 6, $p < 0.05$
£ Wilcoxon test, T = 3, N = 6, ns.

TABLE 15: TIME SPENT IN MUTUAL GAZE AS A PERCENTAGE OF TOTAL TIME OF ENCOUNTER

CONFLICT SITUATION

COUPLE	%AGE TIME MUTUAL GAZE	EXPECTED TIME* (%AGE)
THE W'S	61.4	62.9
THE C'S	64.1	68.7
THE L'S	75.8	71.6

Spearman rank correlation rho = 1, n = 3, p 0.05

"BILL & LINDA"

COUPLE	%AGE TIME MUTUAL GAZE	EXPECTED TIME* (%AGE)
THE W'S	23.5	26.3
THE C'S	67.5	61.6
THE L'S	67.9	78.5

Spearman rank correlation rho = 1, n = 3, p 0.05

Overall Spearman rank correlation = 0.83, n = 6 p 0.05

* computed as time looking for husband multiplied by time looking for wife, divided by total interaction time (see Rutter et al (1977)).

Discussion

The overall levels of gaze found in this study are higher than those generally reported. Thus Nielsen (1962) found a range in overall gazing levels of 8% to 73%, with an average figure of 50%. Argyle and Ingham (1972) report an overall figure of 61% for gaze in dyadic interactions, and Kendon (1967) noted a mean level of gaze of 49%, with a range of 29% to 71%. It is likely that the higher overall levels of gazing found in this study arise from the relationship obtaining between the couples. There is some suggestion that greater intimacy and interpersonal liking will increase looking (Argyle and Cook 1976, Kendon and Cook 1969), and indeed Rubin (1970) and Goldstein et al (1976) have found higher levels of gaze in happily married couples than in those experiencing relationship difficulties.

In contrast to a number of studies no significant sex differences were found in the levels of gaze. It is a consistent finding in the literature that women engage in greater gaze than do men whilst they are interacting within same-sex dyads (e.g. Argyle and Ingham 1972, Coutts and Schneider 1975). However within mixed sex dyads both of these studies found that women looked at their male partners less than the men looked at them. This effect was more pronounced during speaking turns than it was whilst listening. A non-significant and slight trend in the same direction was found in the present study. The lack of such significant differences may relate to the different relationship obtaining between couples who are well acquainted and those brought together for the purposes of experimentation. The former situation may well decrease the magnitude of the sex effect.

As observed by a number of workers (e.g.Nielsen 1962, Kendon 1967) the amount of gaze whilst speaking was significantly lower than that obtaining during listening. Beattie (1978b) suggests that - in large part - such differences may be attributed to cognitive demands, and that speech production processes may be implicated in the withdrawal of gaze during talk. Differences also emerged in the amount of gaze present in each of the two dialogues, though only where looking whilst speaking was considered.

More gaze was found in the Conflict discussion than in the Bill and Linda discussion, due to an increase in the number of looks rather than an increase in the length of each gaze. It is not clear why such differences should emerge.[1] As would be expected on the basis of the high levels of gaze, the figures for mutual gaze are higher than those usually reported. Argyle and Ingham (1972) found that mutual gaze was present for 31.5% of the time in mixed sex dyads. Rutter et al (1977) suggest that mutual gaze is a chance product of individual looking - that is participants neither seek nor avoid the gaze of their partner. This is as indicated by the results of applying the chance formula in Table 15. In contrast Rubin (1970) suggests that well acquainted couples will seek out eye contact, a proposition not supported by the present evidence.

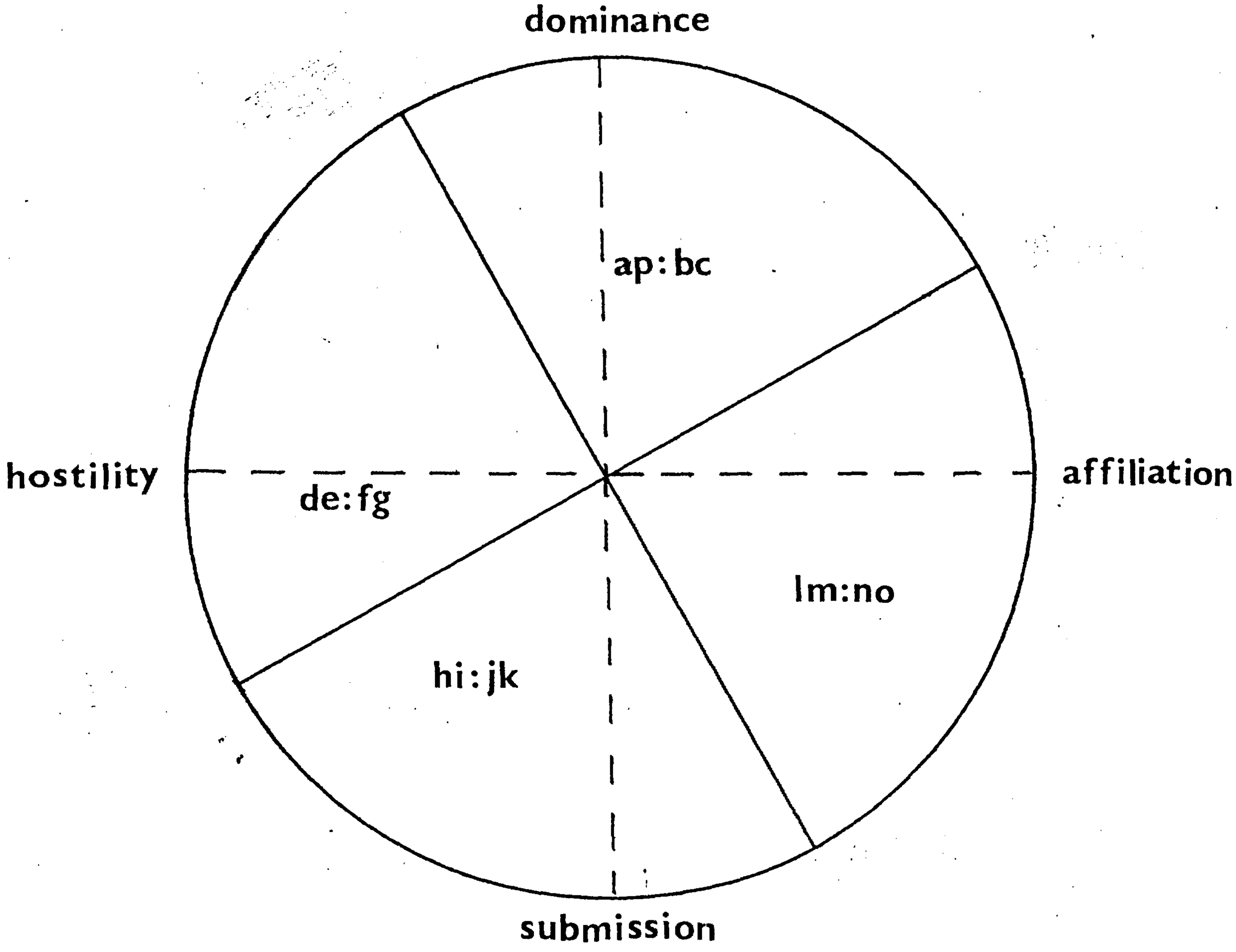
1: Whilst not reported in this thesis, study of the relationship of emotionality as indexed by the Leary system (see Chapter 7) and gaze did not reveal any significant covanation.

C: Content Analysis of the Dialogues

In the previous sections the non-verbal and structural patternings of the dialogues have been described. It has been argued in the introduction that the content of talk should also be considered in analyses of interaction so as to incorporate an understanding of the language used by participants. In this way some comment might be made about relationships between the type of language used and the more structural features of encounters. Given this intent a number of criteria directed attention towards the Terrill and Terrill revision of the Leary Interpersonal Circle (Terrill & Terrill 1965). The purpose of this analysis was not only to characterise the language within dialogues, but also to contrast the style of turn-taking with the content of talk. For this purpose the analytic scheme was required to be exhaustive in its coverage and exclusive in its categorisation (see Russell and Stiles 1979). Further it was proposed to analyse the dialogues in terms of their strategic content, such that a measure of 'interpersonal aim' was recorded with which the style adopted for the achievement of this goal could be contrasted. As is described below, this strategy was not coded utterance by utterance but on an episodic basis. A number of otherwise applicable schemes (e.g. Bales 1970) which proceed utterance by utterance were therefore inappropriate. The crucial advantage of the Leary scheme lies in its delineation of strategic states which reflect a behavioural rather than strictly linguistic patterning, a separation that is particularly useful in comparing style and content.

The Leary system attempts to describe behaviour in terms of two major constructs. The first is a controlling dimension, which ranges from 'dominant-managerial' behaviour to 'submissive-yielding' styles. The second dimension is more concerned with affective qualities, and ranges from 'aggressive' behaviour to the expression of 'loving-caring' feelings. These two dimensions are mapped orthogonally and can therefore be represented as an 'interpersonal circle'. (see Figure 5).

FIGURE 5: THE LEARY INTERPERSONAL CIRCLE (AFTER TERRILL AND TERRILL 1965)



Eight codes are used by Leary to cover the permutations of the two major factors; drawn onto the circle they form a continuous system of 'octants'. These are defined by Terrill and Terrill as follows:

AP - leading as an expert, making direct attempts to control and persuade, inform or instruct

BC - competitive, exploitative (thus forming a category similar to 'AP', whilst maintaining a rather negative attitude, in contrast to the neutral attitude found in the AP division)

DE - critical-attacking, threatening; actively aggressive

FG - passively aggressive, obstructive, playing 'hard to get'

HI - self-effacing, timid

JK - conforming, submissive

LM - co-operative, affiliative

NO - leading in a benevolent fashion, supportive, encouraging

In attempting to content analyse the dialogues there was a concern less with the description of the dialogues on an utterance-by-utterance basis than with the delineation of the strategy employed by participants at any one time. Thus the aim was not to match each utterance in terms of content and style since it was not clear how much any inter-relationships between these variables would influence categorisations. Further such a procedure would make it difficult to score any events arising outside of the speaking turn, since there would be no guide lines for assessing the behaviour of the listener. The solution of dividing the dialogue into episodes was adopted in order to circumvent both of these difficulties, the boundaries of such units being defined by:

a) the introduction of new information

or b) the adoption of a new perspective on a current topic

or c) a change of topic

FIGURE 6: EXAMPLES OF EXTRACT BOUNDARIES

THE W'S (W5:W9)

(Talking about why the husband so rarely helps the wife with housework)

W: You see if you're, if you're generally working I don't mind getting on with the housework; it when you're fiddle faddling about, and reading Rolling Stone, that's when I, that's when I resent having to wash the window//s

Boundary →

H: When do I have time to read Rolling Stone dear // when do, when do

W: When I let, when I let you

H: I read the Guardian, when do I even read the Observer

W: Alright

H: You know, I don't I don't have to, I don't even read the Eye these days, apart from,

W: Yeah but //

H: Well I am ( ), but that is basically due to bad organisation.

W: Well its like tonight when we were getting ready to come out

Boundary ←

H: And what did I do then?

(etc)

The first boundary point is marked by the introduction of a new perspective on a continuing topic; the second boundary point by the introduction of a new topic.

Key to transcription symbols

// - point of interruption

, - unfilled pause

while he goes - underlined speech represents simultaneous talk

( ) - unclear to transcriber

→ - points of boundary

The boundaries of such units were defined by the presence of one of these characteristics in either partner, and arose both within and between utterances (see Sinclair and Coulthard 1976 and Chapter 8 of this thesis).

Using these criteria the dialogues were examined by ADR and an independent judge; in 99 identified episodes there were 9 disagreements as to the placement of suitable boundaries, suggesting that this procedure is reliable. Disagreements between judges were resolved through joint discussion. The extract given in Figure 6 demonstrates the use of this procedure in unitizing the dialogue.

In coding the dialogues using the Leary system it was felt that a reduction of the octal system into quadrants (as indicated in the diagram) would afford greater reliability of coding, particularly where preliminary inspections of the conversations had indicated that many of the disagreements between judges arose within these quadrants rather than between them. Each episode was examined by ADR and an independent psychologist judge, working both with the transcript and the audio recording of the dialogues, and without prior knowledge of one anothers ratings. Within each episode codes were assigned both to the husbands and wives individually; it will be recalled that the initiation of a new episode is defined by a change of behaviour on the part of either interactant, and as such there is no necessary relationship between the codes of husband and wife, or the point at which these codes change in each partner.

Inter-observer reliability over all episodes was 62.5%, with a range of 50.0% to 80.6% for individual conversations. Where disagreements arose the judges conferred so as to achieve a final set of ratings for all episodes.

Because all episodes had been coded utilising both a transcript and the audio recording (as recommended by Terrill and Terrill 1965) there remained the possibility that factors such as the rate and style of interruption might have influenced the categorisation procedure. In order to examine this five episodes from each of the couples dialogues were re-rated by an independent judge utilising only a modified transcript in which interruptions

and smooth switches were not distinguished, whilst leaving the language unmodified. Agreement between the categories assigned by this judge and the joint rankings achieved by the original judges was 60.0%. This figure is within the range achieved by the original judges working from the same data base, and suggests that without specific information as to turn taking style or voice quality the system still achieves a moderate level of reliability.

Results

Table 16 shows the proportion of time spent by each participant in each Leary quadrant. Within each dialogue the greatest proportion of time is spent in the complementary quadrants of AP/BC and LM/NO - that is the majority of the episodes relate either to competitive and controlling interchanges or to attempts at co-operation and supportive exchanges.

There is no significant difference in the proportions of time spent in each quadrant across the two dialogues, though there is a trend towards there being more angry exchanges in the Conflict dialogue (Mean percentage time spent in the Bill and Lind a and Conflict dialogues being 5.0% and 19.5% respectively).

There are no differences between husbands and wives in the emotional tone of their exchanges except where angry (DE/FG) episodes are considered. Here the wives are found engaged in angry interchanges significantly more often than are the husbands (Percentage time engaged in DE/FG episodes for husbands and wives respectively 5.9% and 24.9%; 't' test - $t = 3.0$ $df\ 5$ $p\ 0.05$)

Discussion

The content analysis of the dialogues suggests that for much of the time there is some stability in the form of dialogue engaged in by the couples, with a tendency to engage in either controlling or co-operative exchanges. The characterisation of the second dialogue as a 'conflict' seems not altogether appropriate given the lack of significant difference

between it and the Bill and Linda dialogues. Nonetheless, a trend towards a reduced frequency of co-operative exchanges and an increase in the rate of angry interchanges was apparent in this conversation.

Once again there are few differences in conversational style attributable to the sex of the participants. The increased usage of explicitly angry interchanges by the wives is of interest in a consideration of the types of dialogues represented in this corpus. Whilst a number of studies suggest that women in interaction with men would display a number of indicants of submissive or deferential behaviour (e.g. Argyle 1975), the present conversations tend to suggest a more egalitarian position. This may reflect the status of the interactants as well-acquainted marital partners who were selected on the basis of their good adjustment.

Such dialogues and participants differ from the more artificial pairings often established for studies of conversation The consequences of differing types of encounter for such rules of turn regulation and interactional sequencing as have been developed are not understood. Whilst differences between highly formalised and structured interactions and spontaneous talk have been noted by most workers interested in the structure of social encounters (e.g. ibid), it is not clear to what extent factors such as intimacy will bias the usual regulatory mechanisms available to participants. Some studies have indicated that the semantic structure of dialogue becomes more elliptical across speaking turns when intimacy increases (Kent, Davis and Shapiro 1978). Thus is may be that differing aspects of turn regulatory mechanisms become more or less salient; certainly the high levels of interruptions found within the present corpus might require some explication. Chapters 7 and 8 present studies which attempt to assess this issue more directly.

TABLE 16: TIME SPENT IN EACH QUADRANT BY EACH SPEAKER IN EACH DIALOGUE

COUPLE & STATUS	BILL AND LINDA PERCENTAGE TIME IN EACH QUADRANT AP/BC	DE/FG	HI/JK	LM/NO	CONFLICT PERCENTAGE TIME IN EACH QUADRANT AP/BC	DE/FG	HI/JK	LM/NO
THE C'S.								
H.	59.6	41.1	0	36.3	52.7	0	0	47.3
W	30.4	21.7	0	47.8	21.0	26.0	0	52.9
THE L'S.								
H	27.3	0	4.1	68.6	34.0	19.1	16.6	30.3
W	84.4	45.5	0	11.0	54.6	37.8	0	75.8
THE W'S								
H	16.2	0	0	83.8	61.6	12.2	0	26.2
W	30.5	0	0	69.5	59.1	19.9	9.0	14.3
OVERALL								
H	34.2	1.3	1.4	63.1	49.0	10.9	5.9	34.2
W	48.9	8.7	0.0	42.4	46.0	28.1	2.3	23.6
H & W	41.6	5.0	1.0	52.7	47.5	19.5	4.1	28.9

T.TESTS

Bill and Linda vs Conflict dialogues

AP/BC t = 0.52 df 5 n.s.
DE/FG t = 1.48 df 5 n.s.
HI/JK (untestable)
LM/NO t = 0.81 df 5 n.s.

Husbands vs Wives

AP/BC t = 0.35 df 5 n.s.
DE/FG t = 3.0 df 5 $p<0.05$
HI/JK (untestable)
LM/NO t = 0.25 df 5 n.s.

THE REGULATION OF SPEAKER SWITCHING THROUGH NON-VERBAL CUES:

CONTEXTUAL CONSTRAINTS

Within an interaction the operation of a system of turns at talk will come high on the list of constraints operating to structure the encounter. What is perhaps less clear are the resources which are utilised in order to achieve the patternings of smooth switches and interruptions which are regularly observable.

How the negotiation of the speaker and auditor roles is achieved has been the subject of much research activity, often focussed upon the achievement of smooth speaker switching and concerned with developing a taxonomy of cues and signals which inform both parties of the state of interactional 'play'. Within such systems the auditor will have the problem of detecting appropriate loci for the initiation of talk, and to distinguish between those points which are appropriate for such an intervention and those where the speaker intends to continue. (For present purposes the precise definition of such appropriateness is glossed over).

It has been proposed that dialogue consists of a number of points which may be considered as 'transition relevent' (Sacks et al 1974), and were this to be the case additional factors would be required in order to decide which will become actualised to transition points. Duncan (Duncan and Fiske 1977) and Kendon (1967) both propose a series of cues which will aid in this procedure, certain of which may be described as turn yielding (e.g. particularly Kendon op cit), and certain as turn maintaining or turn claiming (Duncan and Fiske op cit). Primarily these signals are content-free structural cues related to and regularly patterned by the flow of speech. The occurance of interruptions within such a system is seen as a failure on the part of the auditor to observe the procedural constraints on turn initiation.

Signals indicating the location of turn transitions would need to be discrete, since if such cues regularly occurred at loci not intended as points of speaker switching additional factors would be required in order to distinguish 'transition-relevent' from 'turn-allocatory' points. This implies that contextual constraints on the efficacy of 'turn-signalling' would be present where <u>regularly</u> occurring events are <u>additionally</u> identified as carrying a cueing function.

Three studies follow in which it is argued that such constraints are indeed operating both in the case of gaze and within the set of turn-yielding cues identified by Duncan, such that neither of these signalling systems would be sufficient in themselves to allow for the determination of the temporal structure observed in dialogue.

CHAPTER 5:

GAZE AS A REGULATOR OF TURN SWITCHING: A RE-EXAMINATION OF THE 'LOOK-UP' CUE

Introduction

Gaze behaviour within an interaction is highly complex; not only will the level of gaze displayed be a reflection of a number of factors, but it can also be seen as playing a number of social functions. Whilst it is often taken to have a socially informative function it is clear that the level of gaze varies as a consequence of cognitive constraints upon attention during the encoding and decoding of speech (see Beattie 1978b). However in certain - perhaps most - contexts, the variation and patterning of gaze has acquired a social function. Kendon (1967) has proposed that the patterning of gaze acts as a cue to the operation of turn transitions. In addition to such allocatory functions, gaze clearly has a role in monitoring information and conveying more general social cues. Thus a variety of factors will influence the presence or absence of gaze, such as the proximity of interlocutors (Argyle and Dean 1965) or the emotionality of the encounter (e.g. Exline and Winters 1966) and it would seem important to consider such influences prior to examining its role within a specific context.

Factors influencing the level of gaze

Perhaps the most fundamental question to ask at the outset is why we gaze at all. For the individual who is looking it seems likely that gaze at a partner during interaction allows him to be aware of and receive the variety of non-verbal signals which are present during an encounter - in effect an information gathering role. Thus Argyle, Ingham, Alkema and McCallin (1972) had interactants converse whilst placed on opposite sides of a one-way screen, such that whilst one interactant could see the other, one was effectively conversing 'blind'. This arrangement resulted in the partner who could see looking at his interlocutor 67% of the

time, whereas his 'blind' colleague looked only 23% of the time.

Whilst the basic rationale for looking may relate to gathering information, it has been suggested that the amount of gaze seems to serve as an indicant of interpersonal attitudes and emotional arousal. Nielsen (1962) studied changes in eye gaze resulting from stressful interviews in which subjects were aroused by an interviewer who challenged and contradicted their statements; since the subjects were undergoing therapy it is likely that the induced stress was considerable. Nielsen found that no one pattern of eye gaze seemed to arise; subjects showed either very high or very low patterns of gazing contrasted to the levels displayed under non-threatening conditions. Such a situation might arise as a consequence of differing emotional states. During de-briefing sessions certain subjects reported that they 'were so angry they had to look away', and equally it may be that for other individuals steady gaze was a consequence of their arousal.

Exline, Gray and Schuette (1965) interviewed subjects on a variety of topics scaled for intimacy; the decrease in eye gaze arising as intimacy increased was taken as evidence for the proposition that gaze will decrease as a function of increasing emotionality, though here the notion of emotionality seems to refer to embarrassment.

Certain studies have attempted to manipulate subjects into a 'known' emotional state, such that investigators could be more clear about the factors underlying changes in gaze. Modigliani (1971) manipulated the results of an anagram task such that subjects appeared to succeed or fail; feedback as to their success was either given in private, or by a confederate (public condition), who criticised them. In the failure condition with the confederate subjects did appear to reduce their gaze towards the confederate, but the results do not make it clear whether this related to embarrassment or resentment towards the confederate for his criticism.

An alternative methodological procedure which has been adopted is to ask subjects or actors to model specified emotional states directly; a variation on this theme would be to ask raters to guess the emotional being portrayed. Fromme and Schmidt (1972) asked subjects to act-out emotions, finding half the amount of gaze for 'sorrow' as for neutral, angry or fearful episodes. Using the usual pool of student subjects in such studies may be misleading however, since this may lead to the presentation of stereotyped ideas as to what particular forms of arousal look like. Lalljee (quoted in Argyle and Cook 1976:79) asked actresses to enact various emotions, and subsequently asked raters to judge the state being portrayed. High gaze episodes were considered to represent surprise, excitement, joy and scorn, whereas low gaze was seen as reflecting despair, anxiety and rage.

There seems little consistency in the relationship between gaze state and particular forms of emotional arousal. In part this may be attributable to intrapsychic variations amongst subjects, and to individual differences in the expression of emotions. Thus Exline, Thibaut, Hickley and Gumpert (1970) investigated visual interaction amongst subjects implicated in cheating with a confederate, finding that subjects low in 'machiavellianism' looked away when accused, whilst those high on this characteristic did not. Hobson et al (1973) examined changes in gaze and speech hesitancy in subjects exposed to anxiety provoking interviews. Whilst stressed subjects showed no changes in gaze state, their speech did become more hesitant.

In addition these studies do not account for the intensity of the emotion under study. It may be that differing levels of arousal will induce differing sets of behaviours. Nielsen's subjects reported that conscious coping strategies were utilised ('I was so angry I had to look away'), such that rather than reflecting the patterning of an emotional state per se certain studies will be tapping a more widespread arousal. Conversely certain studies may fail to induce affective changes of sufficient degree to produce any behavioural effects (e.g. see Mehrabian (1971) where communicators asked to represent

a message with which they did not agree as though it reflected a personal belief failed to show behavioural changes). Finally those studies which ask raters to evaluate behaviours for the emotion they supposedly reveal may be inappropriate, since it is by no means clear that under these conditions raters can be relied upon to give accurate judgements (Cook 1971). The only emotional states which emerge as revealing any consistency are anxiety and embarrassment, where a reduced level of gazing is observed.

GAZE AS A CUE

Some note has been made in the introduction of the work of Kendon (1967). Kendon found that long utterances (defined as being longer than five seconds, and complete in form and content (Kendon 1978)) which ended in a period of terminal gaze were likely to be followed by an immediate speaker switch rather than a pause or delay prior to speaking. Kendon suggests that the patterning of gaze across the turn ending is such that the speaker will gaze more at the auditor as he/she approaches the final portion of talk, such that the "speaker may be said to be 'offering' the (auditor) the floor, for in looking at him he indicates that he is now open to his actions, whatever they may be" (op cit p 36). The basis for this proposition is an examination of the pooled gaze states of the fourteen interactants over the endings of 97 utterances, in which over the final three seconds of the turn the proportion of speaker gaze across all interactants rises from (approximately) 58% to 74%. Two points may be noted. Firstly within the subject pool the proportion of utterances ending with gaze directed at the listener ranges from 25% to 100%, with a mean of 74%, such that there is clearly considerable variation in the gaze behaviour of interactants. Secondly although it may be the case that there is an increase in overall gazing levels across the turn ending, this arises in the context of a fairly high level of gaze. Thus it is not clear that interactants are moving from a state of no-gaze to gaze in a consistent manner, though presumably this is the case for some interactants within some utterances. The number of cases in which

this change in gaze occurred is not given. Finally in computing the speed of turn transitions Kendon utilises data from only two of the interactions, and it is not evident whether these turn transitions arise following the 'look-up' cue noted above. Secondly the data in this computation includes <u>all</u> turn transitions (op cit p 36), and may thus include interruptions and short as well as long utterances (see Beattie 1978A).

Kendon also found that in the 'phrase boundary pause' of utterances speakers tended to gaze at their interlocutor, whereas during hesitation pauses the level of gaze decreased. The phrase boundary was defined as that pause between the boundaries of "phrases identifiable as complete grammatical units, each phrase separated from the one that follows it by a short pause" (op cit p 39). Such loci seem to have some similarity to the notion of transition relevant locations (Sacks et al 1974), and might therefore be expected to have some similarity to turn endings.

Data from the two subjects in Kendon's study suggests that at such loci the percentage of gaze present prior to the phrase boundary ending is approximately 15%, rising to approximately 80% at the beginning of the phrase boundary pause. These figures should be contrasted with those given above for the turn transition, since the variation in gaze state at boundary points is greater than that arising when the turn transfer is achieved. Quite clearly, therefore, gaze could not have been sufficient to distinguish the boundary pause from a turn ending, and other cues or constraints must have been operating. The claims made for the status of the 'look-up' cue are not therefore supported by Kendon's own data, since it does not seem to distinguish inter - and intra-utterance boundaries.

Other workers have also examined gaze behaviour in relation to utterances. Nielsen (1962) found that 50.5% of all 'remarks' were ended with gaze directed towards the other partner, though again there was considerable variability in this pattern

(25% to 90%). White (cited in Argyle and Cook 1976) analysed five ten-minute extracts of talk from sixteen pairs of subjects, finding that if speakers were looking during a phrase boundary a change of speaker was more likely than if he was looking away.[1] However, such points were uncommon since speakers rarely looked up at such points.

Rutter, Stephenson, Ayling and White (1978) found that the speaker did indeed tend to look at his/her partner at the end of utterances, but that the proportion of turn endings accompanied by this 'cue' was less where the partners were acquainted than was the case where they were strangers, and was additionally reduced by the task in which the couple were engaged. (There being less looking at the end of utterances where a co-operative talk was engaged in, and more where a competitive task was completed). However, in this study only the gaze obtaining at the moment of the floor exchange was considered, and the gaze state <u>prior</u> to the turn transition (which would be relevant to the notion of a change of gaze state acting as a cue) was not recorded.

Beattie (1978A) investigated the relationship between gaze state at the ends of utterances and the duration of the succeeding switching pause, utilising this latency as a measure of the regulatory function of gaze. No evidence for a floor apportionment function was found, and indeed where utterances ended <u>without</u> gaze the switching pause was significantly shorter if all utterance types were included in the analysis. Since the corpus under study was a tutorial session it contained a subset of questions, the delayed response to which biased the above result. When complete (non-question) utterances were considered, gaze had no effect. The role of speech content in this study is, however, noteable.

1: Whilst no definition is given in the citation, phrase boundaries in this study presumably correspond to Kendon's definition of such units.

Duncan (1975) has reported that in face to face dyadic interaction gaze makes no difference to the floor apportionment mechanism, noting that "the head-turning cue ... failed to differentiate smooth exchanges of the turn from instances of simultaneous claimings of the turn by the two participants" (p 206).

The above studies have been 'ethological' in approach; a more direct examination of the role of gaze in apportioning turns has been made through experimental procedures in which gaze is removed either by the separation of participants by a physical barrier (e.g. Rutter and Stephenson 1977, Cook and Lalljee 1972) or by requiring them to converse through a telephone link (e.g. Butterworth et al 1977). Overall it can be concluded that conversation is not grossly disrupted in sound only conditions (as the existence of the telephone testifies), though changes in the style of speech are apparent. Cook and Lalljee (op cit) found more interruptions in face-to-face conditions, a finding which appears consistent in the literature (Argyle and Cook 1976). Beattie and Barnard (1979) analysed a naturalistic corpus of directory enquiry calls, contrasting them with face-to-face university supervisions. Whilst the two samples might not be seen as strictly comparable, again a slightly higher rate of interruption was found in the face-to-face condition. However, the filled pause/unfilled pause ratio did significantly increase on the telephone, perhaps suggesting that in the absence of vision compensatory auditory signals are given to hold the floor.

Overall there does not seem to be strong evidence for the regulatory function of gaze. Quite clearly it is not a necessary accompaniment to the process of turn switching, though it may act to accelerate the turn transition. However, few of the studies cited above have examined utterances for the patterning of gaze prior to the turn transition on an utterance-by-utterance basis, but have assumed that the presence or absence of gaze at the turn transition is sufficient indication of its role. In the present study it is assumed that it is the patterning of gaze across turn endings that is crucial in considering the cueing function of gaze. Specifically

it is proposed that a context of low gaze levels across utterances is required in order for the action of 'looking-up' to acquire interactional salience. Thus both high levels of gaze and frequent changes of gaze state would reduce the faciliatory action of the look-up cue. It is hypothesised as a consequence that the role of gaze as a regulator of turn transitions will be contextually bound to the level of speaker gaze present prior to the speaker switch.

Procedure

Utilising the full corpus described in Chapter 4 all utterances were assigned to one of five gaze context groups on the basis of the absolute duration of speaker gaze. The following criteria were adopted:

No gaze group - no speaker gaze

Low gaze group - Up to 33.3% of the length of the utterance occupied by speaker gaze

Mid gaze group - 33.3% to 66.7% speaker gaze during talk

High gaze group- 66.7% to 99.9% speaker gaze during talk

100% group - Speaker gazes all the time.

As well as allocating an utterance to one of these gaze context groups, further sub-divisions were made within each group on the basis of the number of times a change of gaze state arose within the utterance. Four groups were formed in this fashion, defined as follows:

G1 - where gaze state changes once
G2 - where gaze state changes twice
G3 - where gaze state changes three times
G4 - where gaze state changes more than three times

Within each group a distinction was made between complete utterances and those considered to have been interrupted (see Chapter 4 for definitions), only complete utterances were considered here.

Within each gaze context group those utterances characterised by the 'look-up' pattern could be contrasted with those utterances with similar durations but differing patterns of gaze. In order to provide some standardisation in this procedure all utterances were assigned a length of 100 units and the location of gaze noted with respect to percentile points. The presence of the look-up pattern was defined by the occurance of a shift from gaze aversion to gaze directed at the auditor within the last 30% of the utterance.

All switch times were determined using a 'pauseometer', a device (developed by the Sheffield Department of Psychology) which converts an audio input into two forms of signal for output onto a Devices paper tape recorder. Two records are produced: (a) a continuous record of speech amplitude and (b) a trace of all pauses arising in the speech flow, with a lower limit of 150 milliseconds, marked simultaneously by a second pen. The location of switching pauses is possible through comparison of the amplitude trace with the speech produced at these points, and their latencies easily and accurately determined from the paper tape recording.

Results

Table 17 shows the switch times associated with each gaze context group, independent of the gaze state obtaining at the end of the utterance, both for the individual couples and over all couples and dialogues. There are significant differences in the switch times associated with these groups (Kruskall Wallis test, $H=16.97$ df 4 $p<0.01$), achieved through the greater length of the switching pause in the no gaze and mid gaze groupings, as contrasted with the high and 100% gaze groupings. (See Table 17a).

Whilst this finding suggests that the level of gaze present across the utterance may in itself influence the length of the switching pause, a number of sources of artefactual bias need to be considered. Primary amonst these sources is the unequal representation of couples across the gaze context groups. Table 18a presents the distribution of couples across the gaze context groups, from which it can be seen that there is an over-representation of the W's in the no- and low-gaze context groups.

Examination of the duration of the switching pause within each couple, however, reveals that the influence of gaze context remains, though as a non-significant trend. As may be seen from Table 18b the no- low- and mid-gaze context groups tend to have longer switching pauses than the high and 100% gaze groups across all sets of participants.

The C's have a faster mean switching pause than the W's or the L's, and whilst conforming to the pattern noted overall, their under-representation within lower gaze context groups also requires examination as a source of contamination. A separate analysis of the L's and W's data combined revealed a near significant main effect (Kruskall-Wallis test H = 8.39 df 4 n.s.) suggesting that whilst this source of bias did indeed contribute to the overall significance of the result, there remains some indication that the level of gaze has influence on the length of the switching pause.

An alternative explanation of this effect could lie in the content of the talk. Beattie (1978 a) found that questions in tutorial discussions tended to be followed by longer switching pauses than other complete utterances. Whilst such questions would have been of high cognitive difficulty, it may be that were different gaze context groups to be characterised by differing content this might explain the variation in switching latencies. In each gaze context group 18 utterances were taken at random from each gaze context group, until 6 utterances per couple were chosen from each group. Where low cell numbers precluded equalisation additional utterances were selected from remaining couples. The

corpus of 90 utterances was content analysed by ADR for the presence of questions; the results of this procedure are presented in Table 19.

It can be seen that whilst there is a significant difference in the frequency of questions across the gaze context groups (chi squared = 9.59 df 4 $p<0.05$) this difference is not significant when the markedly low number of questions in the no gaze context group is removed from the analysis (chi-squared = 4.45 df 3 n.s.) . This suggests that the differences in switch times across the gaze context groups can not be attributed to the distribution of questions within them.

The lack of any clear artefactual contribution towards the differing switch times within each gaze context group suggests that in attempting to examine the efficacy of the look-up cue it would be misleading to contrast gaze patternings arising in one gaze context group with those arising in another, since for reasons which are unexplicated, (but will be further discussed) the contexts themselves seem to influence switching times.

In order to examine the efficacy of the look-up cue the latency of the switching pause was examined within each gaze context group, contrasting utterances with the look-up pattern with those where no such pattern was evident. The results of this procedure can be found in Table 20. Only in the low gaze context group does the cue seem to facilitate the switching speed significantly, (Mean switch latency for low gaze group with look-up pattern vs low gaze group with no gaze shifting: $\overline{X}$ = 0.79 and 2.59 seconds respectively; Mann Whitney test: u = 42, n1n2 15,11 $p<0.05$). When the look-up pattern is considered across all gaze context groups no differences in switching speed are apparent. ($\overline{X}$ = 1.21 and 1.66 seconds for utterances with and without the look-up pattern respectively; Mann Whitney test, z = 0.56, n.s.). Similarly no differences in switching latencies are apparent within the mid- or high-gaze context groups where the look-up pattern is present (see Table 20).

Further examination of those instances where the look-up pattern is present is afforded not only by their examination within gaze context groups, but also in terms of the number of gaze shifts prior to the final shift whose effects are examined in this study. Table 21 presents the switching times within each gaze context group, and with reference to the number of gaze shifts arising through the utterance. Only in low gaze contexts where there is one shift in gaze (itself constituting the look-up pattern) is there a significant decrease in the switching pause. (Mean switching pause for low gaze group with one shift of gaze (look-up pattern) vs no look-up pattern, $\overline{X}$ = 0.73 and 3.23 seconds respectively, Mann Whitney test u = 18, n1n2 12, 8 $p<0.05$).

In attempting to account for differences in switching pauses between utterances in the various gaze context groups some note was made of the differences in switching times between couples. It would be possible for an artefactual difference in switching times to appear between utterances with and without the look-up cue were the C's to be over-represented in the former group, and the L's and W's in the latter. Examination of the relative proportion of utterances from each couple (see Table 22) suggests that this remains stable with respect to the presence or absence of the look-up cue, though the cell entries are too small to permit analysis.

The location of the look-up pattern with respect to the speech flow was examined in order to detect any regularities in its point of initiation. The results may be found in Table 23. It would seem that in low gaze contexts with only one shift of gaze (the presence of which has been found to significantly speed the switching pause) the 'look-up' pattern is more likely to be initiated at the penultimate clausal juncture than is the case in other gaze contexts (chi squared = 7.97 df 2 $p<0.05$). This would suggest that such gaze is initiated at a locus of interactional significance, and may help to mark the terminal clause.

TABLE 17: MEANS FOR EACH COUPLES SWITCH TIMES WITHIN EACH GAZE GROUPING (in seconds)

COUPLE		NO GAZE	LOW GAZE	MID GAZE	HIGH GAZE	100% GAZE
THE L'S B & L	SUM	0.2	2.3	14.7	8.8	37.4
	N	2	2	9	10	37
	$\overline{X}$	0.1	1.15	1.63	.88	1.0
	S.D.	-	-	0.16	0.54	1.0
THE L'S CONFLICT	SUM	1.6	9.5	33.8	32.5	45.2
	N	1	5	12	18	35
	$\overline{X}$	1.6	1.9	2.81	1.81	1.29
	S.D.	-	1.27	2.36	2.03	1.42
THE W'S B & L	SUM	48.4	13.6	20.76	18.59	30.3
	N	17	6	6	11	16
	$\overline{X}$	2.85	2.27	3.46	1.69	1.89
	S.D.	2.4	2.12	0.36	0.15	0.23
THE W'S CONFLICT	SUM	15.7	11.0	15.28	19.62	48.52
	N	11	7	8	18	39
	$\overline{X}$	1.43	1.57	1.91	1.09	1.24
	S.D.	2.19	1.06	1.97	1.36	1.6
THE C'S B & L	SUM	0	3.3	2.4	1.8	6.98
	N	1	3	3	6	24
	$\overline{X}$	0	1.1	0.8	0.3	0.29
	S.D.	-	-	0.9	0.2	0.23
THE C'S CONFLICT	SUM	3.3	0.7	1.8	1.19	17.80
	N	4	3	2	8	40
	$\overline{X}$	0.83	0.23	0.9	0.17	0.44
	S.D.	0.50	0.40	0.8	0.12	0.50
OVERALL	SUM	69.2	40.4	88.74	82.5	186.3
	N	36	26	40	71	191
	$\overline{X}$	1.92	1.55	2.22	1.16	0.98

$\overline{X}$ = 1.94
N = 102

$\overline{X}$ = 1.03
N = 262

TABLE 17a: STATISTICS FOR TABLE 17 - on overall data

Kruskall-Wallis H test

On all data - H = 16.97 df 4 p<0.01

No vs low vs mid gaze groups - H = 2.35 df 2 n.s.

Mann-Whitney Tests

No/low/mid groups vs high/100% group Z = 3.67 p<0.001

no	vs	low	Z = 0.82	n.s.
no	vs	mid	Z = 0.629	n.s.
no	vs	high	Z = 1.57	n.s.
no	vs	100%	Z = 2.48	p<0.05
low	vs	mid	Z = 1.58	n.s.
low	vs	high	Z = 0.419	n.s.
low	vs	100%	Z = 1.22	n.s.
mid	vs	high	Z = 2.43	p<0.02
mid	vs	100%	Z = 3.54	p<0.001
high	vs	100%	Z = 1.21	n.s.

TABLE 18 A: DISTRIBUTION OF COUPLES ACROSS GAZE CONTEXTS

(a) FREQUENCY

COUPLE	NO GAZE	LOW GAZE	MID GAZE	HIGH GAZE	100% GAZE
THE L'S	3	7	21	28	72
THE W'S	28	13	14	29	55
THE C'S	5	6	5	14	64
TOTALS	36	26	40	71	191

(b) PERCENTAGE REPRESENTATION OF EACH COUPLE IN CONTEXT

COUPLE	NO GAZE	LOW GAZE	MID GAZE	HIGH GAZE	100% GAZE
THE L'S	8.3	26.9	52.5	39.4	37.7
THE W'S	77.8	50.0	35.0	40.9	28.9
THE C'S	13.9	23.1	12.5	19.7	33.5

TABLE 18 B: MEAN SWITCHING PAUSES FOR EACH COUPLE ACROSS GAZE CONTEXTS

COUPLE	NO GAZE	LOW GAZE	MID GAZE	HIGH GAZE	100% GAZE
THE L'S	(0.6)	1.69	2.31	1.47	1.15
THE W'S	2.3	1.89	2.57	1.32	1.43
THE C'S	(0.66)	0.66	0.84	0.22	0.39
THE L'S & THE W'S	2.12	1.82	2.41	1.39	1.27
cf TOTAL	1.92	1.55	2.22	1.16	0.98

STATISTICS FOR TABLE 18 B (i)

THE L'S

Kruskall-Wallis Test : H = 7.192 df 4 n.s.

Mann-Whitney Tests:

No/low/mid vs high/100% Z = 1.72 n.s.

No vs low U = 7 (n1n2 3,7) n.s.
No/low vs mid U = 61(n1n2 7,21)n.s.
Mid vs high Z = 1.63 n.s.
Mid vs 100% Z = 2.36 p<0.05
High vs 100% Z = 0.142 n.s.

THE W'S

Kruskall-Wallis Test: H = 3.667 df 4 n.s.

Mann-Whitney Tests:

No/low/mid vs high/100% Z = 1.606 n.s.

No vs low Z = 0.94 n.s.
No vs mid Z = 0.01 n.s.
No vs high Z = 1.04 n.s.
No vs 100% Z = 1.79 n.s. (p<0.07)
Low vs mid U = 69 (n1n2 13,28) p<0.05
Low vs high U = 101.5 (n1n2 13,14) n.s.
Low vs 100% Z = 0.77 n.s.
Mid vs high Z = 0.83 n.s.
Mid vs 100% Z = 1.25 n.s.
High vs 100% Z = 0.85 n.s.

STATISTICS FOR TABLE 18B (continued)

THE C'S

Kruskall-Wallis Test: H = 6.43 df 4 n.s.

Mann-Whitney Tests:

No/low/mid vs high/100% Z = 1.26 n.s.

No/low/mid vs high U = 56 (n1,n2 13,14) n.s. (p<0.07)

No/low/mid vs 100% Z = 1.03 n.s.

no vs low U = 10 (n1n2 5,6)n.s.

no vs mid U = 11.5 (n1n2, 5,5) n.s.

low vs mid U = 14.5(n1n2, 6,5) n.s.

mid vs high U = 11.5 (n1n2, 5,14) n.s. (p <0.08)

high vs 100% Z = 1.42 n.s.

THE L'S AND THE W'S COMBINED

Kruskall-Wallis Tests: H = 8.39 df 4 n.s.

Mann-Whitney Tests:

No/low/mid vs high/100% Z = 2.52 p<0.01

no vs low Z = 0.726 n.s.

no vs mid Z = 0.578 n.s.

no vs high Z = 1.02 n.s.

no vs 100% Z = 1.679 n.s.

low vs mid Z = 1.389 n.s.

low vs high Z = 0.234 n.s.

low vs 100% Z = 0.913 n.s.

mid vs high Z = 1.757 n.s.

mid vs 100% Z = 2.554 p<0.01

high vs 100% Z = 0.078 n.s.

TABLE 19: CONTENT OF UTTERANCES IN THE GAZE GROUPINGS

18 utterances in each grouping chosen at random, 6 from each couple per grouping.

GAZE GROUPING	STATEMENTS	TOTAL QUESTIONS	QUESTION TYPES			
			IMPERATIVE	TAGG	INTEROG.	INDIRECT
no gaze	17	1	0	0	0	1
low	13	5	3	2	0	0
mid	14	4	0	3	1	0
high	14	4	1	3	0	0
100%	9	9	3	3	2	1

<u>across all groups</u>

chi-squared = 9.59 df 4 p 0.05 (on data collapsed into statements vs questions)

<u>with no-gaze group removed</u>

chi-squared = 4.45 df 3 n.s. (on data collapsed into statements vs questions)

TABLE 20: SWITCH LATENCIES IN GAZE CONTEXT GROUPS WITH AND WITHOUT GAZE SHIFTS AT THE END OF UTTERANCES (ALL FIGURES IN SECONDS)

	ALL CONTEXTS (Low/Mid/High)	NO GAZE	LOW GAZE	MID GAZE	HIGH GAZE	100% GAZE
Look-up pattern						
Sum	42.2		11.9	13.8	16.5	
N	35		15	9	11	
$\overline{X}$	1.21		0.79	1.53	1.50	
No Look-up Pattern						
SUM	169.4	69.2	28.5	74.9	66	186.3
N	10.2	36	11	31	60	191
$\overline{X}$	1.66	1.92	2.59	2.42	1.1	0.98

Mann-Whitney Test

(1) contrasting 'look-up' pattern with no gaze shifting:-

in all gaze contexts (low/mid/high) $Z = 0.56$ n.s.

in low gaze group $U = 42$ (n1n2 15,11) $p < 0.05$

in mid gaze group $Z = 0.53$ n.s.

in high gaze group $Z = 0.50$ n.s.

TABLE 21: GAZE SHIFTING, GAZE CONTEXTS AND SWITCH TIMES WITHIN BLOCKS OF GAZE

LOW GAZE

a) G1	N	MEAN SWITCH TIME
No gaze shifts to gaze ('look-up')	12	0.73
No gaze shifting at end	8	3.23
Overall	20	1.73

b) G2/3 or more: insufficient numbers for comparison

MID GAZE	N	MEAN SWITCH TIME
a) G2 (N.B. no utterances in G1)		
No gaze shifts to gaze ('look-up')	3	1.86
No gaze shifting at end	8	1.79
Overall	11	1.81
b) G3		
No gaze shifts to gaze ('look-up')	5	1.42
No shifting	4	1.25
Overall	9	1.34

c) G4 or more: insufficient numbers for comparison

HIGH GAZE	N	MEAN SWITCH TIME
a) G1		
No 'look-up' pattern	8	1.14
No gaze shifting	13	1.10
Overall	21	1.12
b) G2		
No gaze changes to gaze ('look-up')	4	0.83
No gaze shifting	20	0.40
Overall	24	0.47

TABLE 21: (continued)

HIGH GAZE G3

	N	MEAN SWITCH TIME
No gaze changes to gaze	5	1.8
No gaze shifting	3	1.26
Overall	8	1.63

HIGH GAZE G4 or more

No gaze shifts to gaze	2	2.0
No gaze shifting	11	1.00
Overall	13	1.16

Mann-Whitney Tests:

Low gaze:	G1	Look-up cue utterances vs no gaze shifting	U = 18 (n1n2 12,8) p<0.05
Mid gaze:	G2	Look-up cue utterances vz no gaze shifting	U = 21 (n1n2 3,8) n.s.
Mid gaze:	G3	Look-up cue utterances vs no gaze shifting and gaze shifts to no gaze combined	U = 7 (n1n2 5,4) n.s.
High gaze:	G1	Look-down cue utterances vs no gaze shifting	U = 49.5 (n1n2,13,8) n.s.
High gaze:	G2	Look up cue vs no gaze shifting	- too few cell entries
High gaze:	G3	Look up cue utterances vs no gaze shifts and gaze shifts to no gaze combined	U = 6 (n1n2 5,3) n.s.

TABLE 22: PROPORTION OF UTTERANCES FROM EACH COUPLE WITH AND WITHOUT THE 'LOOK-UP' CUE IN LOW GAZE CONTEXT

COUPLE	OVERALL	+LOOK-UP IN WITH ONE GAZE SHIFT (G1)	+LOOK-UP IN ALL GAZE SHIFT GROUPS	NO LOOK-UP PATTERN
L'S	7 (26.9%)	3 (25.0%)	4 (26.7%)	3 (27.3%)
W'S	13 (50.0%)	5 (41.6%)	7 (46.6%)	6 (54.5%)
C'S	6 (23.1%)	4 (33.3%)	4 (18.2%)	2 (18.2%)
OVERALL	26 (100%)	12 (100%)	15 (100%)	11 (100%)

TABLE 23: FREQUENCY OF GAZE SHIFTS COINCIDENT WITH CLAUSE ENDINGS IN UTTERANCES WITH LOOK-UP PATTERN

	LOW GAZE CONTEXT	MID GAZE CONTEXT	HIGH GAZE CONTEXT
No. SHOWING SHIFT AT CLAUSE JUNCTURE	9	1	2
No. NOT SHOWING SHIFT AT CLAUSAL JUNCTURE	6	8	9

chi-squared = 7.97 df 2 $p<0.05$

DISCUSSION

The major premise of this study was the contention that were the look-up cue to be operating to facilitate turn switching it would only do so in contexts characterised by low gaze levels, and where the gaze state is not changing at high frequency. This hypothesis has been confirmed, suggesting that the ability of the cue to operate as such is limited by the context in which it arises. The lack of significant effect in other gaze contexts, and indeed the rarity of the look-up pattern across the corpus as a whole (it being present in only 10.6% of all utterances) suggests that it cannot be operating as cue to turn transition points in most turn transitions.

Where the look-up pattern was facilitatory (in low gaze contexts with only one shift of gaze) it tended to be initiated at the penultimate clausal juncture. The location of gaze shifting with respect to such points might be expected to give particular emphasis to the terminal portion of the utterance, and such regularity of placement suggests a degree of intentionality in the gaze patterning that is not apparent in other contexts where the look-up pattern appears.

This relationship ties gaze shifting to linguistic features, and suggests that the notion of gaze as a non-verbal cue acting independently of the speech flow is unlikely. Rather it would seem to operate to add emphasis to the imminence of a terminal juncture in the context of a low level of gaze across the utterance. Thus contextual constraints upon its efficacy as a non-verbal cue strongly restrict the conditions under which gaze shifting can operate informatively as to turn endings, and where it does so it is frequently patterned with respect to syntactic features of speech.

The results of this study suggest that Kendon's (1967) findings require reinterpretation not only in terms of the level of gazing present across utterances, but also in the degree to which such gaze shifts are associated with linguistic features, and thereby reflect linguistic organisation. Such relationships would suggest that the conventional separation of these features (e.g. Argyle and Trower 1979) is potentially misleading. This theme is further explored in Chapter 6.

CHAPTER 6:

TURN ALLOCATORY CUES AS A PREDICTOR OF TEMPORAL STRUCTURE: A RE-EXAMINATION OF THE DUNCAN SCHEMA

Introduction

The work of Duncan and his colleagues on providing a description of the behavioural regularities associated with turn transitions has been discussed in the introductory review. In this study the capacity of the Duncan schema to account for the temporal structure of dialogue is investigated with particular reference to the regular occurance of interruptions within the corpus under study in this thesis. Within the conversations studied by Duncan the frequency of 'simultaneous turns' (defined as instances of simultaneous talk where the auditor's interjection did not constitute a back channel response) was low. Thus in the original corpus studied by Duncan only 23.5% of all switches were classified as simultaneous turns (Duncan 1972);an equivalent figure of 24.7% was found in a later replication study (Duncan and Fiske 1977). In contrast the dialogues within the present corpus have an interruption rate ranging from 34.7% to 65.3%. In attempting to understand patterning in which interruptions present themselves at markedly high frequencies, it seems at least plausable to suggest that interruptions themselves may possess regularities, and that the orientation of researchers towards a description of conditions conducive to smooth switching has obscured the necessity to explain 'disfluencies'in a manner which does not relegate them to the status of interactional errors.

In order to avoid producing simultaneous turns the auditor can utilise a variety of cues which will inform him/her of the imminence of a turn transition point. A problem for the auditor will be to detect such loci, and to distinguish possible completion points from points within the mid-stream of talk. Within Duncan's schema this is achieved through the display of turn-yielding signals in combination with the speaker gesticulation signal - which acts to hold the floor in the presence of such cues - and the speaker continuation signal, which seems to arise in response to auditor back channel responses located at the boundaries of the units delineated by the presence of turn yielding cues (Duncan and Fiske 1977 p 205).

Examination of the data presented by Duncan suggests that interactants conform to this model to the extent that simultaneous turns arise at loci where no cues are displayed or where the gesticulation cue is 'active' at points where the auditor turn taking attempt is made. Conversely, smooth switches are more likely where yielding cues are displayed. What is less clear is the manner in which such consistency of response arises, since strictly Duncan's results may only be interpreted correlatively. The method employed by him was to examine behavioural regularities appearing throughout dialogue, and to determine which of these features were associated with turn endings. This allows some comment to be made about the clustering of linguistic and paralinguistic accompaniments to turn endings, but does not permit any direct inference as to the intentionality with which such 'cues' are presented. It is clearly not the case that, on the basis of this method, Duncan and Fiske can talk of turn signals being 'switched on' (op cit p 190). Some conceptual distinction is required between the notion of a 'display' of cues and the informational value of regularly occuring interactional features which are coterminous with points of transition relevance (Sacks et al 1974)

In the former case it is meaningful to speak of yielding the floor, as though the negotiation of speaker auditor roles was determined primarily through the speaker's display of his/her willingness to relinquish the speaking role, and to invite the auditor to speak. In the latter case, however, it may be more meaningful to see the auditor as utilising 'what he/she knows' about conversation in order to interleaf responses with regard to the speakers speech flow. However, within this second conceptualisation it is not so much a specific system of cues that permits this to take place as the prediction of possible completion points through recognition of regular patternings of behavioural features associated with the speech flow. Were certain of the features defined as 'yielding cues' to be associated with, and regularly patterned by the speech flow, then the status of a turn allocatory system would be shifted so as to place more stress on the role of the auditor in actualising transition relevant points

into turn transitions, and thereby generating the temporal structure.[1]

Evidence pertinent to this point is presented by Beattie (1981A) who examined a corpus of 230 speaker switches from supervisory interactions, recording the incidence of the six turn-yielding cues. This procedure differed from the methodology employed by Duncan in examining only turn endings, rather than the complete flow of speech, and in a sense operates the model predictively. An additional difference was that Beattie considered the frequency with which individual cues were employed. The cue of clause completion was operative in 61.3% of all speaker switches in which turn-yielding cues were implicated, and only in 2.6% of cases where this cue was used was it found in isolation from other paralinguistic turn-yielding cues. A change in intonation pattern occured in 95.03% of speaker switches preceeded by clause completion, suggesting a close relationship between these two cues. Such a finding seriously questions Duncan's treatment of the cues as having equal value and independence.

Thus the ability of turn-yielding cues to delineate turn endings independant of linguistic factors is limited. The most significant signal would appear to be that of clause completion, an event which itself is correlated with other of the cues within the system. Were this to be the case, then Duncan is describing the coincidence of transition relevant points with turn transitions, and this would imply that much of the information value on which turn transitions are achieved is textual rather than extra-linguistic. Further the high frequency of clause completions throughout dialogue suggests turn yielding signals are displayed at a frequency which would be unacceptable were each display to lead to turn taking attempts. It would seem from Beattie's data that clause completion in itself was rare at turn

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[1] It should be noted that this critique does not address itself to the status of cues identified by Duncan as 'turn maintaining', most of which involve non-verbal signalling - such as head shifts and gesticulation, and whose relationship to the speech flow may be dissimilar to that proposed for the yielding cues (see the second study of this Chapter)

endings, and its high association with changes in intonation suggests that additional features are present at such points. However, this in itself requires that modification of the Duncan schema would be necessary in order to account for the correlation in cue display.

It seems more parsimonious to suggest that rather than considering Duncan's signals as cue displays they would be better considered as features associated with the textual and ideational patterning of discourse,achieving significance through their relationship to syntactic and ideational units of speech, and particularly with those points considered as transition relevant. Whilst it may be possible to consider that transition relevant locations are present throughout talk, it seems less plausible to suggest that a major cue to turn endings (i.e. clause completion) should be present with such high frequency throughout dialogue. The very frequency of display would present contextual constraints on the ability of such a cue to act informatively.

Viewing the yielding cues as essentially correlative suggests that examination of simultaneous turns should reveal a proportion that are explicable in terms of attempts to actualise transition relevant locations. Within the Duncan system there is no way in which an interruption arising at a 'cued' location in the absence of speaker continuation signals, but resulting in simultaneous talk, can be accounted for. Within the terms of the proposition developed here such loci are explicable in terms of the role negotiation that can be assumed at each placement of an auditor's turn within the transition relevant points of the speakers talk. Further such instances would be predictable, and would provide a regular account of certain interruptions. The relative scarcity of simultaneous turns within most analyses of dialogue (for example Beattie only found 16 in 230 speaker switches) has perhaps led to a tendency to view them as occasional errors. It is the contention of this study that they can be seen as providing some insight into the mode of speaker selection operating in dyadic interaction.

Specifically it is proposed to examine a corpus of dialogue for the presence of turn yielding cues at speaker switches. It is hypothesised that

i) clause completion will be the most significant cue and
ii) that clause completion will itself be associated with paralinguistic features of the dialogue
iii) that this finding will obtain both for smooth switches and for interruptions where these are initiated at loci marked by yielding cues.

METHOD

Extracts from each of the couples' 'Conflict' discussion were selected at random so as to obtain approximately equal numbers of speaker switches from each dialogue. For the C's and the W's this resulted in the selection of five minute extracts; the L's tended to have longer utterance lengths and consequently nine minutes of their dialogue was examined. Reference to Table 24 indicates that the proportion of interruptions and smooth switches obtained in this sampling are not identical with those obtaining overall (see Chapter 4. Table 2). This difference is presumably attributable to sampling 'error' related to differences in turn taking style across the interactions. It should not influence the results of this study since Duncan's schema, being essentially structural, should be applicable to any period of talk.

Utterances were classified as smooth switches or as interruptions using the criteria noted in Chapter 4, and interruptions further classified according to the schema devised by Ferguson (1976) into overlaps (OV) simple interruptions (I), silent interruptions (SI) and Break-in interruptions (BI).

Each turn ending was then examined by ADR and an independant judge for the presence of any of the six turn-yielding cues together with the gesticulation signal described in Duncan and Fiske (1977) as follows:

TURN YIELDING SIGNALS

1: Syntax - the completion of a grammatical clause involving a subject-predicate combination

2: Intonation - the use of any pitch-level-terminal juncture combination other than | 22 | at the end of a phonemic clause, where | 22 | refers to a phonemic clause ending on a sustained intermediate pitch level.

3: Drawl - on the final syllable, or on the stressed syllable, of the terminal clause, where the terminal clause is defined by either rising or falling intonation.

4: Socio-centric phrases - the appearance of one of several stereotyped expressions typically following a substantive statement (e.g. But ah", "you know" etc)

5: Pitch/loudness - a drop in paralinguistic pitch and/or loudness in association with one of the sociocentric sequences where the change contrasts with the comparable paralinguistic actions prior to the syllable(s) preceeding the sociocentric sequence.

6: Gesture - the termination of any hand gesticulation used during a speaker turn or the relaxation of a tensed hand position (e.g. a fist) during a turn, but excluding self and object adaptors (Ekman and Friesen 1969).

The gesticulation signal was defined by the presence of one or both hands being engaged in gesticulation or in a tensed hand position (again excluding self or object adaptors)

Since neither judge was a trained linguist a section of dialogue taken from outside of the corpus used in this study was examined for the presence of these features in order to achieve some

agreement as to the form taken by the signals. The three extracts were then coded independently by each judge. Inter-judge agreement on each cue was:

Clause completion - 87.5%

Intonation - 75.5% (for change in pitch; specific categories not recorded)

Socio-centric phrases - 85.0%

Pitch/loudness - 72.0%

Drawl - 66.7%

Gesture termination - 87.0%

Gesticulation signal - 82.5%

Disagreements between judges were resolved by a joint review of the video recordings of the interactions.

RESULTS

Table 24 shows the number of turn yielding cues associated with smooth switches and interruptions for each couple in the absence of the gesticulation signal, and Table 25 the patternings of utterances with the gesticulation signal. The overall patternings of the utterances with respect to the number of turn yielding cues both in the presence and the absence of the gesticulation signal are given in Table 26.

The number of turn yielding cues present across the turn endings of smooth switches with no gesticulation signal present is significantly different to the pattern present across the endings of interruptions (chi-squared = 56.3 df 3 $p<0.001$). 92.7% of smooth switches ended with the display of one or more turn yielding cues; in contrast 49.3% of all interruptions were initiated in the absence of such cues. During the display of the gesticulation signal interruptions were significantly more likely to occur where a turn transition was attempted (chi-squared = 18.58 df 1 $p<0.001$).

More detailed examination of the number of turn yielding cues present at the initiation of the interruption types with no gesticulation signal shows that overlapped interruptions are significantly more likely to arise in the presence of a display of one or more turn yielding cues than are the remaining interruption types (chi-squared = 14.57 df 1 $p<0.001$). When the gesticulation signal is displayed interruptions are no more likely to be initiated where turn yielding cues are displayed than is the case in the absence of this signal (chi-squared = 0.22 df 1 n.s.). Analysis of the initiation points of individual interruption types is not possible due to low cell entries.

Table 27 shows the frequency with which individual turn yielding cues were used by each couple and for each switch type. Both within smooth switches and interruptions the cues provided by syntax (clause completion) and intonation were present at turn junctures significantly more frequently than other cue types (chi-square = 177.5 df 5 $p<0.001$, chi-squared = 54.8 df 5 $p<0.001$ respectively). There were no differences in the frequency with which different cues were used where switches were characterised as smooth or interrupted (chi-squared = 1.13 df 5 n.s.).

Table 28 displays the frequency with which turn yielding cues appeared in combination for each couple and overall, showing the patternings for smooth switches and interruptions. The most frequent combination across all switch types is that of clause endings with intonation changes; 88.2% of the displays of clause endings were associated with intonation changes.

Because of the infrequency of a display of one turn yielding cue and the high frequency of the clause and intonation combination, most instances of cue displays therefore included these signals. 75% of all switches were accompanied by clause completion, making it the most significant of the six cues. Only 5 of the 168 speaker switches accompanied by turn yielding cues (2.9%) were marked by clause completion alone. All remaining instances of clause completion were accompanied by paralinguistic cues.

TABLE 24: NUMBER OF CUES USED IN SMOOTH SWITCHES AND INTERRUPTIONS FOR EACH COUPLE WITH NO GESTICULATION SIGNAL

COUPLE	No CUES	SMOOTH SWITCHES	ALL INTERR-UPTIONS	INTERRUPTION TYPES OV	I	SI	BI
C'S	0	1	8	3	3	0	2
	1	2	5	1	2	2	0
	2	32	5	4	1	0	0
	3	11	7	6	1	0	0
	4	2	2	2	0	0	0
W'S	0	5	9	4	4	1	0
	1	3	2	2	0	0	0
	2	27	6	4	2	0	0
	3	5	2	2	0	0	0
	4	1	0	0	0	0	0
L'S	0	3	16	5	7	4	0
	1	1	2	1	1	0	0
	2	17	6	6	0	0	0
	3	11	0	0	0	0	0
	4	3	1	1	0	0	0

TABLE 25: NUMBER OF CUES USED IN SMOOTH SWITCHES AND INTERRUPTIONS FOR EACH COUPLE: WITH GESTICULATION SIGNAL

COUPLE	No CUES	SMOOTH SWITCHES	ALL INTERR-UPTIONS	INTERRUPTION TYPES OV	I	SI	BI
C'S	0	0	5	2	1	1	1
	1	0	1	1	0	0	0
	2	0	1	1	0	0	0
	3	0	0	0	0	0	0
	4	0	1	0	1	0	0
W'S	0	0	3	1	1	1	0
	1	1	3	1	1	1	0
	2	2	1	0	1	0	0
	3	1	0	0	0	0	0
	4	0	0	0	0	0	0
L'S	0	0	4	2	2	0	0
	1	1	2	1	0	0	0
	2	0	2	1	0	0	1
	3	0	0	0	0	0	0
	4	0	0	0	0	0	0

TOTAL NUMBER OF SMOOTH SWITCHES AND INTERRUPTIONS

	SMOOTH	INTERRUPTED
C'S	48	35
W'S	45	26
L'S	36	33

TABLE 26: NUMBER OF CUES USED IN SMOOTH SWITCHES AND INTERRUPTIONS OVERALL

WITHOUT GESTICULATION SIGNAL (Percentages in brackets)

No.CUES	SMOOTH SWITCHES	ALL INTERR-UPTIONS	INTERRUPTION TYPES OV	I	SI	BI
0	9 (7.3)	37 (49.3)	12	14	5	6
1	6 (4.3)	9 (12.0)	4	3	2	0
2	76 (54.3)	17 (22.6)	14	3	0	0
3	27 (19.3)	9 (12.0)	8	1	0	0
4	6 (4.3)	3 (4.0)	3	0	0	0
in toto	124	75	41	21	7	6

WITH GESTICULATION SIGNAL (Percentages in brackets)

No CUES	SMOOTH SWITCHES	ALL INTERR-UPTIONS	INTERRUPTION TYPES OV	I	SI	BI
0	0 (0.0)	12 (54.5)	5	4	2	1
1	2 (40.0)	5 (22.7)	3	1	1	0
2	2 (40.0)	4 (18.2)	2	1	0	1
3	1 (20.0)	0 (0.0)	0	0	0	0
4	0 (0.0)	1 (4.5)	0	1	0	0
in toto	5	22	10	7	3	2

Contrasting smooth switches vs all interruptions without gesticulation signal
chi-squared = 56.3 df 3 $p<0.001$ (Collapsing data for 3 and 4 cues)

Contrasting OV interruptions with I/SI/BI interruptions, zero cues vs any cues, without gesticulation signal
chi-squared = 14.57 df 1 $p<0.01$

Contrasting all interruptions, frequency of display of zero vs any cues, with and without gesticulation signal
chi-squared = 0.22 n.s.

Contrasting frequency of smooth switches and interruptions with and without gesticulation signal
chi-squared = 18.58 df 1 $p<0.001$

TABLE 27: FREQUENCY OF TURN YIELDING CUES BY SWITCH TYPE AND COUPLE

COUPLE	CUE	SMOOTH	ALL INTERR-UPTIONS	OV	I	SI	BI
C'S	CLAUSE	34	13	10	3	2	0
	INTON^{N}	35	15	12	3	1	0
	GESTURE	3	6	6	0	0	0
	DRAWL	14	9	5	3	1	0
	SOC/CENT.	6	4	3	1	0	0
	PITCH	4	4	3	1	0	0
W'S	CLAUSE	30	11	7	4	0	0
	INTON^{N}	28	8	5	3	0	0
	GESTURE	2	0	1	0	0	0
	DRAWL	12	2	2	0	0	0
	SOC/CENT.	3	1	1	0	0	0
	PITCH	2	1	1	0	0	0
L'S	CLAUSE	30	8	8	0	1	0
	INTON^{N}	27	7	7	0	1	0
	GESTURE	14	2	2	0	0	0
	DRAWL	7	3	2	1	0	0
	SOC/CENT.	3	0	0	0	0	0
	PITCH	3	0	0	0	0	0

TABLE 27 (continued)

OVERALL

CUE	SMOOTH SWITCHES	ALL INTERR-UPTIONS	OV	I	SI	BI
CLAUSE	94 (36.6%)	35 (35.0%)	25	7	3	0
INTON^{N}	90 (35.0%)	32 (32.0%)	24	6	2	0
GESTURE	19 (7.4%)	9 (9.0%)	9	0	0	0
DRAWL	33 (12.8%)	14 (14.0%)	9	4	1	0
SOC/CENT.	12 (4.7%)	5 (5.0%)	4	1	0	0
PITCH	9 (3.5%)	5 (5.0%)	4	1	0	0

Contrasting frequency of turn yielding cues utilised in smooth switches:
chi-squared = 177.5 df 5 $p<0.001$

Contrasting frequency of turn yielding cues utilised in interruptions:
chi-squared = 54.8 df 5 $p<0.01$

Contrasting frequency of turn yielding cues utilised in smooth switches with turn yielding cues utilised in interruptions:
chi-squared = 1.13 df 5 n.s.

TABLE 28a: COMBINATIONS OF TURN YIELDING CUES IN SMOOTH AND INTERRUPTED UTTERANCES FOR EACH COUPLE

Key:
cl = clause completion
int = intonation
ges = gesture
dr = drawl
soc = socio-centric sequence
pit = pitch changes in association with soc.

THE C'S

smooth

	cl	int	ges	dr	soc	pit
cl	1					
int	33	0				
ges	3	3	0			
dr	11	12	3	1		
soc	0	6	0	2	0	
pit	0	4	0	1	4	0

interrupted

	cl	int	ges	dr	soc	pit
cl	3					
int	9	2				
ges	4	6	0			
dr	8	7	0	0		
soc	0	3	2	0	0	
pit	0	3	2	0	0	0

THE W'S

smooth

	cl	int	ges	dr	soc	pit
cl	2					
int	28	1				
ges	2	1	0			
dr	9	8	2	1		
soc	0	3	0	0	0	
pit	0	2	0	0	2	0

interrupted

	cl	int	ges	dr	soc	pit
cl	4					
int	7	0				
ges	0	0	1			
dr	2	2	0	0		
soc	0	1	0	0	0	
pit	0	1	0	0	1	0

THE L'S

smooth

	cl	int	ges	dr	soc	pit
cl	2					
int	28	0				
ges	10	11	0			
dr	7	7	4	1		
soc	0	3	0	0	0	
pit	0	3	0	0	3	0

interrupted

	cl	int	ges	dr	soc	pit
cl	1					
int	5	2				
ges	1	0	1			
dr	2	0	2	0		
soc	0	0	0	0	0	
pit	0	0	0	0	0	0

TABLE 28B: COMBINATIONS OF TURN YIELDING CUES IN SMOOTH AND INTERRUPTED UTTERANCES OVERALL

smooth

	cl	int	ges	dr	soc	pit
cl	5					
int	89	1				
ges	15	15	0			
dr	27	27	9	3		
soc	0	12	0	2	0	
pit	0	9	0	1	9	0

interrupted

	cl	int	ges	dr	soc	pit
cl	8					
int	21	4				
ges	5	6	2			
dr	12	9	2	0		
soc	0	4	2	0	0	
pit	0	4	2	0	1	0

Discussion

The results of this study confirm Duncan's broad finding that the presence of one or more turn yielding cues at the conclusion of an utterance is more likely to be associated with smooth switching. Interruptions, in contrast were more likely to arise where no turn taking cues were displayed and where the speaker gesticulation signal was given.

However, 7.3% of all smooth switches arose in the absence of any turn yielding cues; in contrast Duncan found no such instances in his 'exploratory' study (Duncan 1972) and only 1.7% of his switches arose under such circumstances in his 'replication' study (Duncan and Fiske 1977). Beattie (1981a)found that 13.55% of the switches in his corpus arose in the absence of any yielding cues. These switches pose a problem for the consistency of the system, since their presence could only be explained by factors additional to the system of yielding cues.

Perhaps more crucial to the arguments developed in the introduction to this study are the characteristics associated with interruptions. It should be noted that Duncan (Duncan and Fiske op cit) found that 57.4% of the interruptions arising in both the exploratory and replication studies, and in the absence of the gesticulation signal, were accompanied by turn yielding cues. In this study 50.7% of all interruptions were initiated at points marked by cue display and no gesticulation signal. However, consideration of the individual interruption types reveals that 70.1% of overlapped interruptions arise at such points. This suggests that not all interruptions may be treated as equivalent in terms of the behavioural features associated with their initiation, and this rather important suggestion is developed in later studies. Further, the presence of overlapped interruptions arising with such a high frequency at points marked by turn taking cues, (and with no other signals within the Duncan system operating to restrict auditor attempts) makes it unlikely that these are simply errors - particularly where it is noted that overlapped interruptions predominate amongst the classes of interruption (see Chapter 4). The degree of

regularity apparent in the initiation points of these interruptions suggests that their placement is understandable through a model in which the auditor begins his utterances at transition relevant locations, certain of which then reveal themselves as being prior to completion points. Further evidence for this interpretation is afforded by a consideration of the specific cues utilised in the turn transitions.

Both within smooth switches and interruptions the most frequently occuring cue was that of clause completion, which was apparent in 75% of all turn endings marked by cue display. The display of paralinguistic cues was highly associated with the appearance of clausal completion. This raises some question as to the extent to which the listener's attention is drawn towards semantic and syntactic considerations in making decisions as to the location of turn claims. Clausal completion is as likely to be coterminous with smooth switching as interruptions (where these arise at cued locations); since it is unlikely that interruptions would be regularly 'cued', it seems most plausible to suggest that auditors perceive the arrival of clausal completion points, together with accompanying paralinguistic 'modulations', as possible completion points into which speech may be introduced. Quite clearly the status of clausal completion per se as a cue is limited by its regular and frequent appearance throughout dialogue; such a context would make its 'display' as an indicant of turn completion rather uninformative.

This line of argument suggests that auditors utilise their knowledge of linguistic structure to recognise 'boundary points' within speech, where this term is used to refer to locations associated with a high probability of turn transitions. A difficulty with this proposition is, however, that such loci are frequent within turns, yet not all are utilised as opportunities for turn taking. Whilst certain of these points might be accounted for by situational factors - such as a lack of ideational completeness, or the auditors indifference to what is being said - it seems likely that at least some of these points are marked by the speaker as being

intra-utterance junctures. Thus it proposed that speaker within-turn signals may be utilised to indicate points where he/she intends to continue in this role, and that these signals will be observed more frequently at within-turn junctures than at points of speaker switching. The presence of such differential display would suggest that speaker 'continuation' signals were operative in response to boundary locations within turns, whereas boundary locations at which turn transitions arose should not usually be characterised in this fashion. This would suggest that whilst linguistic features indicate boundary locations, non-verbal signals would be important in allowing the speaker to indicate which of these points are likely to become actualised as completions.

Duncan and Fiske (1977) propose two signal displays whose function seems to relate to the preservation of the speaker state. The 'speaker gesticulation signal' is considered to operate whether or not a turn yielding cue is present, and independently of the number of cues presented.[1] The speaker continuation signal is considered to mark the beginnings of new "units" within an ongoing turn, and consists of a shift in head direction away from the auditor. Whilst this latter cue is not explicitly examined by Duncan in terms of the consequences of its display for auditor turn-taking attempts, its function as a marker of 'units to follow' makes it a candidate for examination as a turn-preserving behaviour.

Were it to be the case that boundary points within speech were associated with non-verbal behaviour oriented towards maintaining the speaker role, it would suggest that such signalling formed an important moderator of any interpretation of utterance completion suggested by linguistic features. The study following investigates this possibility utilising a sample of intra-utterance sentential clause boundaries in which no auditor turn-taking attempt is present, contrasting this with the corpus of turn endings examined in this section.

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1. The signal is defined on Page 101

SPEAKER GESTICULATION AND CONTINUATION SIGNALS AT SENTENTIAL CLAUSE BOUNDARIES

METHOD:

From each couple 20 utterances were selected (10 from each dialogue, evenly distributed between husbands and wives) which contained a sentential clause completion associated with an intonation pattern appropriate to a terminal juncture (see Duncan 1972) and with no auditor turn claim at that point. The selection procedure approximated to a random sampling, whereby utterance numbers were taken at random, and the transcript inspected in order to establish whether the above criteria obtained. Where utterances did not contain these features the next utterance by that partner was examined, until a suitable juncture was found. Where an utterance contained more than one ideational completion point, the first such juncture was examined.[1,2].

Each utterance was inspected for the presence of the following behaviours:

(A) Speaker behaviour

i) Speaker gaze

ii) Speaker turn yielding cues (in addition to those of clause completion and intonation following a terminal contour, present by definition)

iii) The maintainance of a gesticulation other than a self or object adaptor initiated at any point prior to the juncture between clauses and held at least to the first word following the stressed syllable within the first phonemic clause of the subsequent speech.

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[1] Whilst no statistical evidence is offered, it may be noted that a substantial number of utterances contained only one ideational clause, on the completion of which a turn transition occured.

[2] 55 of these points were followed by an unfilled hesitation pause.

iv) Head aversion occurring within a phonemic clause preceeding the sentential clause boundary and extending at least to the first word following the first stressed syllable following that boundary.

v) The introduction of gesticulation within or following the juncture pause but within the first phonemic clause of the next period of talk.

B) Auditor behaviour

i) Verbal back channels (see Duncan 1972)

ii) Visual back channels - head nods

iii) The initiation of a gesture after having both hands at rest, excluding self and object adaptors, within the phonemic clause preceeding the sentential clause boundary and extending to the first word following the first stressed syllable following that boundary.

iv) A shift in gaze, indicated by a shift in head direction, within the same time period as under (iii) above.

All behaviours were rated by ADR and an independent observer. Agreement between judges for each category was as follows:

Gaze behaviour	-	60.7%
Gesture	-	90.0%
Head aversion	-	92.7%
Back channel behaviours		100.0%

Where disagreements arose both judges subsequently re-viewed the videotapes in order to reach a consensual decision.

In order to validate the floor-holding qualities of the speaker gesticulation signal the patterning of this behaviour at the ends of turns was examined using the data from the previous study. Head aversion, which had not been previously considered across the end of turns, was examined using the definition in A(iv)

above. Because of the relative infrequency of this behaviour at the end of turns in this corpus the complete set of utterances was examined for utterances ending with this characteristic.

RESULTS

From Table 28c it can be seen that the juncture following sentential clauses is associated with the maintainance of a gesture or head aversion, or a combination of these behaviours in 51.7% of cases. When the period immediately following the sentential clause boundary is considered to include the re-introduction of gesture 63.3% of the junctures are associated with the behaviour of interest.

Data from Table 24 suggest that gesture is maintained significantly less frequently across the endings of utterances at the point of speaker switching, contrasted with sentential clause boundaries (rates = 11.9% and 33.3% respectively; chi-squared = 15.6 df 1 $p<0.001$). Similarly the rate of head aversion at the end of utterances is significantly less than obtains at the junctures under study (rates respectively 6.9% and 21.7%, chi-squared = 16.3 df 1 $p<0.001$). This would suggest that these features are more frequent at clause boundaries within turns, and that they indicate points at which further talk is intended. This interpretation receives considerable support from the finding noted in the previous study that speaker-switches arising in the presence of the speaker gesticulation signal were significantly more likely to be interruptions than smooth switches. From Table 29B it is apparent that a similar effect obtains where head aversion is present across the end of turns; 78% of switches arising under such conditions were interruptions, contrasted with 47.8% of utterances ending without this behaviour (chi-squared = 13.15 df 1 $p<0.001$).

Examination of the turn 'yielding' cues at sentential clause boundaries shows them to be statistically equivalent to

those present across the ends of turns, when all cues are considered (chi-squared = 6.5 df 5 n.s.) (see Table 30a). In order to establish that cues other than those of clause and intonation were present at an equivalent frequency (since these behaviours were present by definition) the frequency of the remaining four cues was examined; again no statistical differences were found (chi-squared · 0.99 df 3 n.s.)

From Table 30b it can be seen that the probability of a speaker displaying either the gesticulation or the continuation signal was not increased by the presence of a greater number of yielding cues, there being fewer such behaviours at higher levels of cue display.

Table 31 shows the frequency of auditor behaviour, from which it is apparent that the probability of a speaker gesticulation or continuation signal being displayed was no higher in the presence of auditor back channels or gaze shifts than in their absence (chi-squared =0.01 df 1 n.s.)

TABLE 28c SPEAKER BEHAVIOUR AT SENTENTIAL CLAUSE BOUNDARIES

COUPLE, DIALOGUE AND STATUS		GESTURE MAINTAINED	HEAD AVERSION	(GAZE SHIFT)	GESTURE REINTRODUCED
C'S					
B & L	H	0	2	1	2
	W	4	0	0	0
CON	H	3	1	1	0
	W	1	1	1	0
L'S					
B & L	H	3	1	1	0
	W	0	0	0	4
CON	H	1	0	0	0
	W	2	2	2	1
W'S					
B & L	H	1	0	0	0
	W	3	2	2	0
CON	H	2	1	1	0
	W	0	3	3	2
ALL H'S		10	5	4	2
ALL W'S		10	8	8	7
TOTAL		20	13	12	9

Number of utterances with one or more cues across clause boundary and within first word following stressed syllable of first phonemic clause after boundary

Husbands 17 out of 30 (56.6%)
Wives 21 out of 30 (70.0%)
All; 38 out of 60 (63.3%)

Number of utterances with one or more cue prior to clause boundary (i.e. not including gesture re-initiation)

Husbands 16 out of 30 (53.3%)
Wives 15 out of 30 (50%)
All: 31 out of 60 (51.7%)

Frequency of gesture maintainance at end of utterance 27 of 226 (11.9%)
Frequency of gesture maintainance at end of sentential clause 20 of 60 (33.3%)
$\chi^2 = 15.6$ df 1 $p < 0.001$

Frequency of head aversion at end of utterance = 50 of 722 (6.9%)
Frequency of head aversion at end of sentential boundary = 13 of 60 (21.7%)
$\chi^2 = 16.3$ df 1 $p < 0.001$

TABLE 29A

CUE DISPLAY ASSOCIATED WITH UTTERANCES ENDING WITH HEAD AVERSION

No. CUES	SMOOTH SWITCHES	INTERRUPTIONS
0	0	17
1	1	8
2	12	5
3	0	7
4	1	0
TOTAL	13	37

no. of utterances in total corpus ending with head aversion = 50 (6.9%)

no. of utterances in total corpus ending with no head aversion = 672 (93.1%)

TABLE 29 B

FREQUENCY OF SMOOTH SWITCHES AND INTERRUPTIONS IN UTTERANCES ENDING WITH AND WITHOUT HEAD AVERSION

	Number interrupted		Number smooth	
With head aversion	47	(78.4%)	13	(21.6%)
Without head aversion	319	(47.8%)	348	(52.1%)

chi-squared = 13.15 df 1 $p < 0.001$

TABLE 30a: YIELDING CUES AT SENTENTIAL CLAUSE BOUNDARIES

	AT CLAUSE BOUNDARY	cf AT UTTERANCE * ENDING WITH SMOOTH SWITCH
CLAUSE	60 (41.1%)	94 (36.6%)
INTONATION	60 (41.1%)	90 (35.0%)
GESTURE TERMINATION	6 (4.1%)	19 (7.4%)
DRAWL	10 (6.8%)	33 (12.8%)
SOCIO-CENTRIC PHRASE	5 (3.4%)	12 (4.7%)
PITCH	5 (3.4%)	9 (3.5%)

Overall chi-squared = 6.5 df 5 n.s.

without clause and intonation chi-squared = 0.99 df 3 n.s.

* figures from Table 27

TABLE 30b: FREQUENCY OF CUE PRESENTATION AND RATE OF DISPLAY OF SPEAKER CONTINUATION AND GESTICULATION SIGNALS

No.CUES PRESENT	ANY SPEAKER SIGNAL PRESENT	NO SPEAKER SIGNAL PRESENT
2	25 (59.5%)	17 (40.5%)
3	9 (81.8%)	2 (18.2%)
4	4 (57.1%)	3 (42.9%)

No.CUES PRESENT	ANY SIGNAL PRIOR TO* JUNCTURE PRESENT	NO SIGNAL PRIOR TO JUNCTURE PRESENT
2	22 (52.3%)	20 (47.6%)
3	7 (63.6%)	4 (36.4%)
4	2 (28.6%)	5 (71.4%)

* i.e. not including re-initiation of gesture

Discussion

The results of this study suggest that sentential clause boundaries within turns are associated with a high level of gestural and postural activity, and that these non-verbal behaviours are correlated with a high frequency of interruptions where they are present at points of auditor turn-claims. Thus the clause boundaries seem, in a high proportion of cases, to be marked by signals oriented towards indicating the continuation of speech.

The rate of presentation of these signals seems to be unrelated to the number of turn yielding cues present across the juncture, or to auditor back-channel or non-verbal behaviour. This would suggest that the display of the signal is determined by an intention to continue speaking, with the resultant maintainance of gesture and aversion of gaze reflecting speech planning activity rather than being a response to cues from the auditor that an attempt to take the turn is imminent. Butterworth and Beattie (1978) found that gestural activity and gaze aversion could be shown to co-vary with speech planning, and tended to be produced in pauses preceeding such planning. Since the completion of a sentential clause would be a point where cognitive planning of this kind would be initiated, the signals observed at these locations in this study might be taken to reflect this activity. As such they would not be instances of specifically regulative behaviour, since their role would be essentially informative. The low frequency of their appearance at points of auditor turn claiming might be attributed to a listeners awareness that gestural activity and head aversion reflect further speech production, and that the termination of gestural activity is associated with completion points. The extent to which a social adaptation of these gestural and postural characteristics also operates is not clear; at the locus examined in this study the co-incidence of such behaviour with factors external to the linguistic is not evident.

The results of the studies to this point suggest that the notion of behaviours orientated towards the specific regulation of turn-taking seems problematic, in that at the end of utterances

behaviours conceived as 'turn yielding' seem to be accompaniments of syntactic features of speech; as such they would seem to indicate boundary points with a greater probability of completion. The relative infrequency of non-verbal behaviour at turn endings stands in marked contrast to the high association between clause boundaries within speech and gestural or postural activity. Whilst it is not clear that such behaviour could be described as a signal to the maintainance of the speaker role (in that once again such accompaniments may relate to the speech production process) they quite clearly operate informatively to indicate that certain junctures may be treated as within-turn pauses.

Thus rather than considering a system containing a system of turn-yielding and turn maintaining signals, to which intentionality is ascribed, it may be more appropriate to consider that auditors can recognise a series of boundary points throughout speech largely through syntactic features of the language being used. Further cues to the suitability of such points for turn-taking are given by the maintainance of gesture, and the aversion of the head from the auditor. Thus it might be necessary to place a clearer emphasis on the auditor's role in selecting points for initiating turns; the role of extra-linguistic factors in aiding this selection seems principally based in informing him/her of those locations where this would (in all probability) lead to simultaneous speech.

Thus the (largely) non-verbal behaviours considered as turn-regulatory are conceived of as patterned by cognitive factors related to speech production processes. In this way it would seem inappropriate to consider the presence of signals to speaker switching arising as an intentional product of interactants, though the social interpretation of such behaviour might still permit understanding of these behaviours as turn yielding or maintaining. In contradistinction to previous models, however, it is proposed that constraints on turn allocation arise primarily through linguistic features, whereas turn maintainance is achieved through non-verbal regulators which modify junctures within speech.

OVERVIEW

In this section two studies have examined the regulation of speaking turns by non-verbal 'cues'. Consideration of the 'look-up' cue suggested that such a cue was contextually bound to the level of gaze present across the utterance, and that where it did act to facilitate the speed of speaker switching it seemed to be related to the speech flow in such a way as to 'mark' the final clause of the utterance. Examination of Duncan's system of 'turn-yielding cues' suggested that a similar contextual constraint was operating, since the most frequently used cue appeared to be clause completion - an event occurring at high frequency throughout dialogue.

Both studies suggest that non-verbal accompaniments to speech have been taken as signalling turn completions, whereas it seems more likely that such markers are merely correlated with endings. From the study of Duncan's turn-yielding cues, where overlapped interruptions could be seen to be 'cued' at a high frequency, it was suggested that a more parsimonious explanation of such a correlation would be to infer that within dialogue auditors utilise their knowledge of linguistic structure to determine boundary points within speech, such that by initiating talk at such loci they will be able to conform to the 'one party at a time' ruling (Sacks et al 1974). (Whilst adherence to this convention does not seem obligatory, it is quite clear that participants to talk do not maintain simultaneous talk over extended periods; to do so would lead to confusion). Within speech such boundary points are regularly indicated by clause endings, and accompanying paralinguistic cues. To suggest that such 'natural' accompaniments also serve a specific turn allocatory function (regardless of whether such cues act permissively or are obligatory) may firstly be to confuse correlative findings with causative, but more importantly to direct models of turn taking towards an over-concern with the role of the speaker, rather than the auditor in the construction of turns at talk.

More evidence seems forthcoming for the role of non-verbal behaviour - particularly gesture and head aversion - in the maintainance of the floor by the speaker. Thus it appears that whilst boundaries are placed throughout speech by virtue of its linguistic structure and paralinguistic accompaniments, such points are modifiable by non-verbal behaviours. Once again the status of such behaviour as a signal to turn taking, rather as an informative and therefore regulative factor, is questioned.

Such a position should not be taken to deny the role of non-verbal behaviours as carring an informational signalling function. The study of the look-up cue suggests that where the contextual features surrounding a behaviour makes that behaviour prominent, it may well carry a signalling function.

Thus intonation patterns in which a deviation from a (2 2) pattern are regularly associated with clausal endings and could not (unless further specified by particular "turn ending" patterns) render further informational value for a listener. This contextual restriction suggests that certain of the remaining non-verb cues - such as gestural completion - may therefore acquire an increased interactional salience.

Overall however it would seem that non-verbal cues are more prominent at within-turn boundaries and that these seem to be behaviours associated with the encoding of further talk (Beattie 1978B). It may be this association that permits the efficacy of the speaker gesticulation and completion signals, since where auditors expect the resumption of gaze (Kendon 1967) or the termination of gesture (Duncan 1972) at clause endings, their association indicates the likelihood of speech to follow. The use by the auditor of such contextual expectancies, based on intuitions as to the patterning of non-verbal behaviour with language production would suggest that speaker "cueing" is less usual than the initiation of turns by the auditor through linguistic and contextual constraints offered by the speaker utterance.

This proposition has important implications for the study of the form of speaker switching employed by participants, since the primary task of interactants is not to respond to a cued system, but to place utterances at suitable boundary points. Note has been made of differences in the regularity with which different interruption types arise at such positions, thereby raising the possibility that the differential patternings of switching types is related to strategic considerations. The suggestion that switching style is a determinent and a reflection of strategy implies a relationship between the content of speech and its structure, a possibility which

is excluded where switches are seen as merely smooth or disfluent in response to the constraints of a cueing system. This hypothesis is examined in the next Chapter.

CHAPTER 7

SWITCHING STYLE AND INTERACTIONAL STRATEGY

In Chapters 5 and 6 three studies were presented which suggested that textual features of language were both relevant and important to the choice of turn transition locations, and that this appeared to be the case for smooth switches and a high proportion of interruptions arising at boundaries within utterances. Whilst such an analysis suggests that certain recurrent features of interaction may guide the location of initiation points - and within this will be included behaviours indicating the appropriateness and inappropriateness of a turn claim - it is less clear why any particular structure of interaction should arise. At its most succinct, there is a need to ask why interruptions arise in contrast to smooth switches, particularly where such interruptions appear to be placed at boundary locations, and therefore display some regularity in their positioning. On these grounds it seems inappropriate to construe them as errors of placement; indeed were this to be so then the dialogues forming the basis for this research would be surprisingly full of such mistakes. It is proposed that interruptions serve as an interactional resource (e.g. Jefferson 1974), and that such "disfluencies" allow for a considerable variation both in the tempo of dialogue, and in the strategic scope permitted to interactants.

There is considerable evidence to suggest that speech style is influenced by a number of factors (both external and internal to dialogue), and Hymes (1972) has developed a taxonomy of situational determinants which will influence the form of talk within specific interactions. Thus speech will be modified by the topic under discussion, the formality of the encounter and the characteristics of the participants (Giles and Powesland 1975). Much of this sociolinguistic work has used a variety of indices to record changes in speech patterns, but there are rather few studies which have examined the influence of social and personality variables on turn-taking style.

Zimmerman and West (1975) found that in male-female conversations men interrupted more frequently than women; in only one mixed sex dyad out of ten did they find an exception to this

pattern. Esposito (1979) found that these sex-differences obtained at a surprisingly young age; with boys of approximately four years tending to interrupt their female counterparts at a higher rate than vice versa. Whilst such sex differences are striking they are not informative as to causation. Zimmerman and West (op cit) interpret their results in terms of the greater dominance of men over women, and the suggestion that power can be expressed through this interactional style has been a feature particularly of the literature concerning itself with talk as an indicator of family psychopathology (e.g. Farina 1960, Mishler and Waxler 1968).

Other workers have found that interruptions serve differing functions, not all of which are related to dominance. Thus Natale et al (1979) found that individuals high in 'need for social approval' tended to interrupt more often, and suggested that at least some interruptions may serve to express 'joint enthusiasm'. (p 875). Gallois and Markel (1975) suggest that the meaning of interruptions may vary across different phases of a conversation, and that in the middle of a dialogue such switches may indicate heightened involvement rather than dominance or discomfort. Feldstein, Alberti, Ben Debba and Welkowitz (1974) (cited by Feldstein and Welkowitz 1979) examined the relationship between the personality characteristics of (female) subjects and the frequency of initiation of simultaneous speech in dyadic interactions. They found that "women who are relaxed ... secure and not overly dependant on the approval of others tended to initiate more simultaneous speech than women who were generally apprehensive, self-reproaching tense and frustrated" (op cit p 357). The personality of the partners of these subjects also seemed to influence the rate of interruptions, since more simultaneous speech seemed to arise where the partners were cooperative than where they were critical. Natale et al (op cit) also found a relationship between confidence (as broadly defined) and speech style, finding that subjects low in social anxiety tended to initiate more simultaneous speech.

Scherer (1979), in a study of social influence in simulated juries, found evidence for cross-cultural differences in the interpretation of switching style. Participants to six person

groups attempting to reach a verdict on a putative crime subsequently ranked one another along a variety of personality measures. Inter-correlations of these with interruption rate (standardised with reference to the number of utterances spoken) suggested that in an American group individuals with a high rate of 'simultaneous turns' (pace Duncan 1972) were perceived as influential and dominant (though also aggressive). For a German group however the interruption rate was unrelated to influence, but was negatively correlated with perceptions of dependability, task ability and stability. Some caution in interpreting this result is warranted however, since the path analysis techniques utilised in this study in order to gauge the reported inter-correlations would require replication in order to establish cross-cultural as opposed to inter-group differences in social perception. Secondly it is not clear from the report of the study whether the definition of simultaneous turns included unsuccessful as well as successful attempts to initiate speaker switching.

The necessity for making finer distinctions in classifying interruptions is suggested by the work of Ferguson (1977). Here one main subject interacted with fifteen others, and the dominance of participants assessed by administering a personality questionnaire and by asking the main subject to rate her partners "according to how dominant she thought they were" (1975 p 229). Each conversation was analysed and the interruptions classified according to the scheme presented earlier in this thesis. For each subject the frequency of interruption type was correlated with scores from both the questionnaire and the ratings assigned to them, with differing sets of correlations being found according to the method of assessment. Specifically a higher frequency of overlapped interr-uptions were observed in subjects rated high in dominance by the questionnaire, and a lower frequency of silent interruptions in those rated high in dominance by the main subject. Whilst the inter-correlation of the two methods of personality assessment were rather low (rho = 0.133)[1] these results suggest that not all interruption types are equivalent in their meaning, and that a failure to

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[1] Such correlations between behavioural and questionnaire based assess-ments of apparently identical target variables are not unusual in the field of personality assessment, and sound a cautionary note in studies quoted earlier investigating similar relationships (e.g. see Mischel 1969)

differentiate them may lead to misleading results.

These studies suggest that the temporal structure of dialogue, and particularly the (crude) interruption rate, is influenced by a variety of social factors, though it is not clear whether such factors should be interpreted as a function of personality variables or as a reflection of the inter-relationship between individual interactive styles.

However there is some agreement that confident individuals who are low in social anxiety are more likely to initiate simultaneous talk, especially where they are partnered by co-operative rather than critical individuals. Certain forms of interruption - particularly the presence of the overlapped interruption, and the absence of the silent interruption - seem more characteristic of individuals rated as dominant. It is clear that not all interruptions can be taken to imply dominance however, since a number of studies have found a higher interruption rate to signal an increased involvement.

The suggestion that differing social styles are reflected in differing conversational patterns carries with it the implication that the content of conversation - through which such social style is apparent - is both reflected in and perhaps recognisable by such factors as switching style. Were this to be so it would suggest that inspection of dialogue would reveal relationships between the structure and content of talk, and that some light might be cast on the factors that lead to the emergence of particular styles of speech through the understanding of this link.

An important feature of most research which has attempted to examine the social determinants of interactional style has been the assumption that such social factors impose a static structure upon the encounter. Thus individuals rated as "dominant" or "socially anxious" are seen as remaining so throughout their interaction, since no behavioural validation of such characteristics are offered. Ferguson's study suggests that the validity with which classifications of personality variables may be made is unclear, since the two methods of rating dominance employed by her rendered

different correlations with speech style. A more sensitive index of such covariation would be to examine changes in the form of dialogue with changes in content within interactions.

The particular patterns of interest in this research are variations in the form of speaker switching, since the data presented in Chapter 6 suggest that such patterning cannot be understood solely by reference to constraints on turn taking imposed by factors internal to the turn-taking system - such as linguistic or textual constraints. It is proposed that the variability in turn-taking style is attributable to strategic factors, and particularly that this will be reflected not only in differences in the form of switch utilised - whether smooth or "disfluent" - but also in the frequency with which sub-classifications of interruptions arise, and in the frequency with which the initiation points of these utterances are at boundary locations. The correlation between such points and turn endings (see Chapter 6) suggests that initiation of interruptions so as to coincide with them might lead to more likelihood of taking the turn at talk with a minimal overlap of speech. In contrast utterances initiated at points which are not transition relevant may be more likely to result in longer periods of over-lapped talk. Were this to be the case it could be predicted that where interactants displayed a concern to take the floor - as might be the case where control of the other was being attempted - then a greater use of interruptions classified as transition relevant would be expected. More specific predictions seem unwarranted, since no other study exists in which variations in switching style across the encounter with change in content have been examined in detail. Indeed studies of intra-conversational patterns are rather rare; only Gallois and Markel (1975) Prebor (1972) and Schegloff (1968) seem to have attempted this, and these researchers were more concerned with the development of patternings of behaviour within one-off conversations where partners were previously unacquainted, suggesting that more exploratory work is necessary.

METHOD

The corpus for this study was formed from the section of dialogue content-analysed using the Terrill and Terrill revision of the Leary Interpersonal Circle, and described in Chapter 4. As such the size of the data base is slightly smaller than that employed in other studies.

Every turn transition within the episodes derived from the above procedure was scored as a smooth speaker switch or an interruption, and each interruption further classified according to the Ferguson scheme as modified and described in Chapter 4. In order to examine any differences in switching style given differing conversational strategies, all episodes coded in the same quadrant were collated together and examined for turn taking behaviour within them.

All interruption types were further classified according to their point of initiation with respect to the previous speaker, and were therefore categorised as Transition Relevant (TR+) or Not Transition Relevant (TR-). The notion of transition relevance advanced by Sacks et al (1974) refers to the distribution of 'possible completion points' throughout the utterance at which turns may be allocated. Whilst not explicitly defined this feature seems to be related to the completion of clauses containing a subject-predicate combination, as in:

A: I didn't even say anything [when I came home
B: [Eh

(Sacks et al, op cit p 721)

Here the second speakers interjection is considered to be placed at a transition relevant location. In adopting this criterion in the present study some continuity between the turn yielding cue described by Duncan (1972) (and considered to reflect textual boundary locations in this study) is intended. Interruptions placed within one word of continuous speech bounding such locations, or within the pause between these locations (where such breaks occurred) were considered to be transition relevant. All other initiation

points of interruptions were denoted as Not Transition Relevant. By this definition all P/OV interruptions were transition relevant. All interruption types within each Leary quadrant were inspected for their transition relevance using this criterion.

RESULTS:

1) Switch Types

Table 32 shows the frequency with which smooth switches and interruptions arose within each Leary quadrant, both for the Bill and Linda and Conflict dialogues, and for these conversations combined. In the AP quadrant there are significantly more interruptions than smooth switches compared with other quadrants both in the Bill and Linda dialogues and overall (chi-squared = 9.49 df 1 $p<0.01$ and 9.98 df 1 $p<0.01$ respectively). In the Conflict dialogue there is a non-significant trend in the same direction. (chi-squared = 3.54 df 1 n.s.).

In the LM quadrant there are significantly more smooth switches than interruptions both in the Bill and Linda dialogues and overall, (chi-squared = 11.04 df 1 $p<0.001$ and 7.50 df 1 $p<0.01$ respectively). In the Conflict dialogue there is a non-significant trend in the same direction (chi-squared = 2.19 df 1 n.s.). Comparision of the DE and HI quadrants with the remaining quadrants reveals no significant bias in the frequency of switching style.

Table 33 shows the frequency of the five interruption types within each quadrant. Since there are variations in switching style between the Bill and Linda and Conflict dialogues each quadrant will be considered separately.

AP - In the Bill and Linda dialogues there are significantly more P/OV and I interruptions than is the case in the remaining quadrants (chi-squared = 11.3 df 1 $p<0.001$ and 5.6 df 1 $p<0.05$ respectively). These differences are not maintained in the Conflict discussion; simple interruptions in this dialogue are significantly less frequent in the AP than is the case across the remaining quadrants. In the Conflict dialogue and overall a significantly reduced frequency of OV interruptions is apparent (chi-squared = 5.69 df 1 $p<0.05$ and 5.24 df 1 $p<0.05$ respectively). Within the Bill and Linda dialogue

this under-representation is apparent as a non-significant trend. Combining OV and POV interruptions gives a significant under-representation of this switch type in the Conflict discussion (chi-squared = 4.74 df 1 $p<0.05$); this becomes a trend in the opposite direction in the Bill and Linda dialogue, and overall no significant trend is apparent.

DE - The low cell entries for the Bill and Linda dialogues makes effective comparisons across conversations inappropriate. Overall this category is characterised by a high frequency of simple interruptions in contrast to the remaining episodes (chi-squared = 4.2 df 1 $p<0.05$).

HI - This quadrant contains too few entries to permit comparison with other categories.

LM - In the Bill and Linda dialogue there are significantly fewer P/OV interruptions than is the case across other categories (chi-squared = 8.98 df 1 $p<0.01$). Whilst there is a trend towards more simple interruptions in this dialogue (chi-squared = 3.15 df 1 n.s.), this reverses to give significantly fewer of this class of interruption in the Conflict conversation (chi-squared = 4.87 df 1 $p<0.05$). The under-representation of P/OV interruptions apparent in the Bill and Linda dialogues is not apparent in the Conflict talks, nor is it present overall. In both the Bill and Linda and Conflict dialogues a non-significant trend towards the over-representation of OV switches is apparent; this achieves significance overall (chi-squared = 4.60 df 1 $p<0.05$). Combining OV and P'OV interruptions gives a significant over-representation of this switch type in the Conflict discussion (chi-squared = 5.47 df 1 $p<0.05$). This becomes a non-significant trend in the opposite direction in the Bill and Linda dialogue, and over both conversations no trend is found.

The variation in switching style across dialogues - and within quadrants - suggests that only those patternings which maintain consistency across both conversations should be considered to reflect stylistic differences attributable to the content of talk. Adopting this criterion it may be concluded that each quadrant is characterised as follows:

AP - More interruptions than smooth switches; of the interruptions there is an under-representation of OV switch types.

DE - No more interruptions than smooth switches; where interruptions arise there is an over-representation of simple interruptions.

HI - Too few cell entries to allow interpretation

LM - More smooth switches than interruptions; of the interruptions there is an over-representation of OV switch types.

2) Transition Relevance

Table 34 shows the frequency of TR+ and TR- placements for each interruption type and each couples dialogue[1]. Whilst individual couples interruption frequencies are such as to preclude separate analysis, it can be seen from this Table that both within dialogues and across couples the rate of TR+ placements within each interruption type is consistent, with a higher proportion of OV switches arising at transition relevant locations than is the case for the remaining interruption types. This differential rate appears in the Bill and Linda dialogue (chi-squared comparing OV with I, SI and BI interruptions combined = 2.46 df 1 n.s.) but reaches significance in the Conflict dialogue and overall (chi-squared = 4.1 df 1 $p<0.05$ and 6.0 df 1 $p<0.05$ respectively).

Table 35 shows the frequency with which transition relevant interruptions were found within each Leary quadrant. Precision placed overlaps are identified separately from Overlaps, since these are by definition transition relevant. Only Overlapped interruptions show differences in the distribution of TR+ placements across Leary categories, with a trend towards an over-representation of such placements in the AP category (chi-squared = 4.96 df 2 n.s.). When P/OV and OV interruptions are considered together there is a significant over-representation of transition relevant interruptions in the AP quadrant (chi-squared = 9.92 df 2 $p<0.01$).

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[1] This analysis is based on the entire corpus

When the frequency of transition relevant interruptions arising in each quadrant, but without regard to interruption type, is considered there is a significant over-representation of TR+ switches in the AP category (chi-squared = 7.96 df 2 $p<0.01$). When P/OV switches are excluded from the analysis this reduces to a non-significant trend in the same direction. Consideration of I, SI and BI interruption types alone suggests that the over-representation of TR+ interruptions in the AP quadrant is confined to OV switches (chi-squared = 1.23 df 2 n.s.).

TABLE 31: AUDITOR BEHAVIOUR AND SPEAKER SIGNALS

A) FREQUENCY OF :

VOCAL BACK CHANNELS	13
HEAD NODS	3
CONJOINT DISPLAY	2
GAZE SHIFTS:	
NO GAZE TO GAZE	5
GAZE TO NO GAZE	0
GESTURE INITIATION	0

B) AUDITOR BEHAVIOUR AND SPEAKER SIGNALS

AUDITOR BEHAVIOUR	SPEAKER SIGNAL PRESENT	SPEAKER SIGNAL ABSENT	
Vocal back channel	9	3	
Head nod	2	1	
Gaze shift	5	0	
Any auditor behaviour present	9	5	*
No auditor behaviour present	29	17	*

* chi-squared = 0.01 df 1 n.s.

TABLE 32: FREQUENCY OF SMOOTH SWITCHES AND INTERRUPTIONS IN LEARY QUADRANTS

BILL & LINDA

QUADRANT	SMOOTH	INTERRUPTIONS	AS PERCENTAGES	
AP/BC	24	58	29.3	70.7
DE/FG	5	10	33.3	66.7
HI/JK	1	1	50.0	50.0
LM/NO	84	77	52.2	47.8

chi-squared

AP/BC vs rest X^2 = 9.49 df 1 p<0.01 HI/JK vs rest - not testable
DE/FG vs rest X^2 = 0.33 df 1 1 n.s. LM/NO vs rest = 11.04 df 1 p<0.001

CONFLICT

QUADRANT	SMOOTH	INTERRUPTIONS	AS PERCENTAGES	
AP/BC	77	88	46.7	53.3
DE/FG	28	27	50.9	49.1
HI/JK	12	5	70.6	29.4
LM/NO	60	42	58.8	41.2

chi-squared

AP/BC vs rest X^2 = 3.54 df 1 n.s. HI/JK vs rest X^2 = 1.71 df 1 n.s.
DE/FG vs rest X^2 = 0.00 df 1 n.s. LM/NO vs rest X^2 = 2.19 df 1 n.s.

OVERALL

QUADRANT	SMOOTH	INTERRUPTIONS	AS PERCENTAGES	
AP/BC	101	148	40.6	59.4
DE/FG	33	37	47.1	52.9
HI/JK	13	7	65.0	35.0
LM/NO	144	118	55.0	45.0

chi-squared

AP/BC vs rest X^2 = 9.98 df 1 p<0.01 HI/JK vs rest X^2 = 1.64 df 1 n.s.
DE/FG vs rest X^2 = 0.01 df 1 n.s. LM/NO vs rest X^2 = 7.50 df 1 p<0.01

TABLE 33: THE FORM OF SWITCH UTILISED IN EACH LEARY QUADRANT

OVERALL - BOTH DIALOGUES

(a) FREQUENCIES

QUADRANT	INTERRUPTIONS						TOTAL INTERRUPTIONS
	OV	P/OV	OV+P/OV	I	SI	BI	
AP/BC	40	31	71	40	24	12	148
DE/FG	12	5	17	15	4	1	37
HI/JK	4	1	5	1	0	0	6
LM/NO	49	15	64	25	20	9	118
OVERALL	105	52	157	81	48	22	308

(b) PROPORTION OF INTERRUPTIONS

QUADRANT	INTERRUPTIONS					
	OV	P/OV	OV+P/OV	I	SI	BI
AP/BC	27.0	20.9	47.9	27.0	16.2	8.1
DE/FG	32.4	13.5	45.9	40.5	10.8	2.7
HI/JK	66.6	16.6	83.2	16.6	0	0
LM/NO	41.5	12.7	54.2	21.9	16.9	7.6

Chi-squared values comparing interruption types

OV
AP vs rest $X^2_2=5.24$ df 1 $p<0.05$
DE vs rest $X^2_2=0.07$ df 1 n.s.
LM vs rest $X^2=4.60$ df 1 $p<0.05$

P/OV
AP vs rest $X^2_2=1.67$ df 1 n.s.
DE vs rest $X^2_2=0.32$ df 1 n.s.
LM vs rest $X^2=2.26$ df 1 n.s.

OV+P/OV
AP vs rest $X^2_2=1.02$ df 1 n.s.
DE vs rest $X^2_2=0.43$ df 1 n.s.
LM vs rest $X^2=0.82$ df 1 n.s.

I
AP vs rest $X^2_2=0.08$ df 1 n.s.
DE vs rest $X^2_2=4.2$ df 1 $p<0.05$
LM vs rest $X^2=2.7$ df 1 n.s.

SI
AP vs rest $X^2_2=0.52$ df 1 n.s.
DE vs rest $X^2_2=0.68$ df 1 n.s.
LM vs rest $X^2=0.27$ df 1 n.s.

TABLE 33: THE FORM OF SWITCH UTILISED IN EACH LEARY QUADRANT (CONTINUED)

BILL AND LINDA

(a) FREQUENCIES

QUADRANT	INTERRUPTIONS						TOTAL INTERRUPTIONS
	OV	P/OV	OV+P/OV	I	SI	BI	
AP/BC	18	17	35	4	13	6	58
DE/FG	4	1	5	3	2	0	10
HI/JK	1	0	1	0	0	0	1
LM/NO	32	6	38	16	16	7	77
OVERALL	55	24	79	23	31	13	146

(b) PROPORTION OF INTERRUPTIONS

QUADRANT	INTERRUPTIONS					
	OV	P/OV	OV+P/OV	I	SI	BI
AP/BC	31.0	29.3	60.3	6.8	22.4	10.3
DE/FG	40.0	10.0	50.0	30.0	20.0	0
HI/JK*	-	-	-	-	-	-
LM/NO	41.6	7.8	49.4	20.8	20.8	9.1

* too few numbers

Chi-squared values comparing interruption types

OV
AP vs rest X^2=1.14 df 1 n.s.
DE vs rest $-_2$too few numbers
LM vs rest X^2=1.05 df 1 n.s.

P/OV
AP vs rest X^2=11.3 df 1 $p < 0.001$
DE vs rest $-_2$too few numbers
LM vs rest X^2=8.98 df 1 $p < 0.05$

OV+P/OV
AP vs rest X^2_2=1.50 df 1 n.s.
LM vs rest X^2=1.49 df 1 n.s.

I
AP vs rest X^2=5.6 df 1 $p < 0.05$
DE vs rest $-_2$too few numbers
LM vs rest X^2=3.15 df 1 n.s.

SI
AP vs rest X^2=0.73 df 1 n.s.
DE vs rest $-_2$too few numbers
LM vs rest X^2=0.02

TABLE 33: THE FORM OF SWITCH UTILISED IN EACH LEARY QUADRANT

(CONTINUED)

CONFLICT

(a) FREQUENCIES

QUADRANT	INTERRUPTIONS						TOTAL INTERRUPTIONS
	OV	P/OV	OV+P/OV	I	SI	BI	
AP/BC	22	14	36	36	10	6	88
DE/FG	8	4	12	12	2	1	27
HI/JK	3	1	4	1	0	0	5
LM/NO	18	9	27	9	4	2	42
OVERALL	51	28	79	58	16	9	162

(b) PROPORTIONS OF INTERRUPTIONS ACROSS QUADRANTS

QUADRANT	INTERRUPTIONS					
	OV	P/OV	OV+P/OV	I	SI	BI
AP/BC	25.0	15.9	40.9	40.9	11.4	6.8
DE/FG	29.6	14.8	44.2	44.4	7.4	3.7
HI/JK	60.0	20.0	80.0	20.0	0	0
LM/NO	42.9	21.4	64.3	21.4	9.5	4.7

Chi-squared

OV
AP vs rest $X^2_2=5.69$ df 1 $p<0.05$
DE vs rest $X^2_2=0.06$ df 1 n.s.
LM vs rest $X^2=3.39$ df 1 n.s.

P/OV
AP vs rest $X^2_2=0.25$ df 1 n.s.
DE vs rest $X^2_2=0.14$ df 1 n.s.
LM vs rest $X^2=0.66$ df 1 n.s.

OV+P/OV
AP vs rest $X^2_2=4.74$ df 1 $p<0.05$
DE vs rest $X^2_2=0.24$ df 1 n.s.
LM vs rest $X^2=5.47$ df 1 $p<0.05$

I
AP vs rest $X^2_2=14.75$ $p<0.001$ df 1
DE vs rest $X^2_2=1.05$ df 1 n.s.
LM vs rest $X^2=4.87$ $p<0.05$ df 1

SI
AP vs rest $X^2=0.48$ df 1 n.s.
DE vs rest - too few numbers
LM vs rest - too few numbers

TABLE 34: INTERRUPTION TYPES AND FREQUENCY OF TRANSITION RELEVANCY

BILL & LINDA DIALOGUE

INTERRUPTION TYPE	W'S		L'S		C'S		OVERALL	
	TR+	TR-	TR+	TR-	TR+	TR-	TR+	TR-
OV	10	12	7	8	14	14	31	34
P/OV	4	0	11	0	11	0	26	0
I	4	9	3	5	5	6	12	20
SI	4	8	4	12	3	4	11	24
BI	2	4	1	2	2	3	5	9

CONFLICT DIALOGUE

INTERRUPTION TYPE	W'S		L'S		C'S		OVERALL	
	TR+	TR-	TR+	TR-	TR+	TR-	TR+	TR-
OV	10	9	9	6	11	14	30	29
P/OV	9	0	7	0	16	0	32	0
I	12	15	2	14	6	12	20	41
SI	5	7	2	9	3	1	10	17
BI	3	3	0	1	2	1	5	5

OVERALL

	TR+		TR-	
OV	61	(49.2%)	63	(50.8%)
P/OV	58	(100%)	0	(0.0%)
I	32	(34.4%)	61	(65.6%)
SI	21	(33.9%)	41	(66.9%)
BI	10	(41.6%)	14	(58.3%)

Chi-squared

comparing OV vs I+SI+BI in Bill & Linda dialogues chi-squared = 2.46 df 1 n.s.
comparing OV vs I+SI+BI in Conflict dialogues chi-squared = 4.1 df 1 $p<0.05$
comparing OV vs I+SI+BI overall chi-squared = 6.00 df 1 $p<0.05$

TABLE 35: TRANSITION RELEVANCE OF EACH INTERRUPTION TYPE WITHIN EACH LEARY QUADRANT

LEARY QUADRANT	P/OV	OV		OV+P/OV		I		SI		BI	
		T+	T-	T+	T-	T+	T-	T+	T-	T+	T-
AP	31	21	19	52	19	14	26	11	13	7	5
DE	5	3	9	8	9	5	10	1	3	1	1
HI	1	4	0	5	0	0	1	0	0	0	0
LM	15	15	33	31	33	6	19	8	12	4	5

PERCENTAGE TRANSITION RELEVANT INTERRUPTION TYPES WITHIN EACH QUADRANT

LEARY QUADRANT	OV		OV+P/OV		I		SI		BI	
	T+	T-	T+	T-	T+	T-	T+	T-	T+	T-
AP	52.5	47.5	73.2	26.8	35.0	65.0	45.8	54.2	58.3	31.7
DE	25.0	75.0	47.1	52.9	33.3	66.7	25.0	75.0	50.0	50.0
HI										
LM	32.6	67.4	48.4	51.6	24.0	76.0	40.0	60.0	44.4	55.6

OVERALL NUMBERS IN EACH QUADRANT (NOT INCLUDING P/OV)

	T+		T-	
AP	53	(45.7%)	63	(54.3%)
DE	10	(30.3%)	23	(69.7%)
HI	5		1	
LM	34	(33.0%)	69	(67.0%)

Significance levels[1]

Chi-squared frequency of transition relevant interruptions within each interruption type, comparing AP vs DE vs LM quadrants:

OV - chi-squared = 4.96 df 2 n.s.
OV+P/OV - chi-squared = 9.92 df 2 $p<0.01$
I - chi-squared = 0.88 df 2 n.s.
SI - cell entries too low for testing
BI - cell entries too low for testing

Comparing frequency of all transition relevant interruptions within each quadrant:-

AP vs DE vs LM i) without P/OV chi-squared = 4.84 df 2 n.s.
ii) with P/OV chi-squared = 7.96 df 2 $p<0.01$

Comparing AP vs DE vs LM quadrants for I,SI & BI interruptions $X^2=1.23$ df 2 n.s.

1: HI quadrant excluded from analysis due to low cell entries

DISCUSSION

The results of this study suggest that different strategic states will result in differing forms of speaker switching across an interaction, and in doing so provide some link between the structure and content of talk. Specifically it would seem that competitive-controlling talk is marked by an increase in the rate of interruptions compared with the remaining portions of dialogue, and that co-operative segments of talk are characterised by a higher rate of smooth switching. Examination of the specific forms of interruption utilised suggests that overlaps are under-represented in competitive-controlling sections and over-represented in co-operative stretches of conversation. In angry exchanges simple interruptions are more frequent than is the case elsewhere, though overall interruptions are no more frequent in this quadrant than are smooth switches. Combination of the OV and P/OV categories - thereby forming a class of interruption directly comparable to Ferguson's Overlap's - suggests no differential frequency of appearance of this class of switching across the dialogues as a whole.

The initiation points of the interruptions seem to be influenced by the content of the dialogues but only significantly in the case of OV interruptions, where a trend towards an over-representation of TR+ switches is found in the AP quadrant. When Ferguson's Overlap category is reconstituted by combination of the OV and P/OV switches a highly significant over-representation of TR+ interruptions is found.

It is difficult to interpret the meaning of a differential distribution of OV interruptions between the AP and LM quadrants, particularly where reconstitution of Ferguson's category of overlaps shows no difference in the frequency of occurrence across the two quadrants. Inspection of the data suggests that such differences as emerge between the quadrants reflects variations in the frequency with which P/OV and OV interruptions constitute the more general Overlap category.

Of some note is the finding that the initiation point of the overlap category of interruptions is more likely to be at a transition relevant location in the AP category as contrasted with the remaining quadrants. Thus whilst it may be the case that the general category of overlapped interruptions is no more likely to arise in one quadrant as contrasted with another, those arising in the AP quadrant can be differentiated from those in other portions of the dialogue on the basis of their greater frequency of initiation at boundary points within speech.

As has been described in Chapter 6, such points are associated with turn endings, and whilst no direct validation is available, it may be the case that initiation of talk at such locations is more likely to lead to a turn transition in which the first speaker reaches a completion point. The finding that overlapped interruptions are associated with a greater frequency of transition relevant initiation points would be supportive of this view.

For the first speaker to achieve such an ending would presumably have some interactional impact, since to leave an utterance incomplete may lead to a sense of frustration. In portions of talk where greater control is exerted - as reflected in the AP quadrant - the use of transition relevant overlaps would presumably achieve a degree of control over the turn allocation, but without the loss of information from the first speaker that seems more likely to result from non-transition relevant interruptions. Beattie (1981 c) examined the differential distribution of interruption categories in University tutorial groups, finding that interruptions arising at transition relevant locations were more frequently used by tutors than by students, and that in groups characterised by the highest rate of such interruptions the student participation rate was lower. Whilst it is not clear how the students responded affectively to this speech style, its controlling function seems evident.

In a study which considered the social meaning of the locus of interruption Argyle (1975) prepared tapes in which one interactant was heard to interrupt another at one of three locations within the

utterance - in the middle of the phrase, at clause endings or at the end of a sentence. Judges listening to these tapes were invited to rate the 'appropriateness' of the interruptions. A significantly higher rating was found where interruptions were initiated at the end of 'sentences', regardless of the length of utterance preceeding the interruption point. However it would seem from the data presented by Argyle (op cit p 65) that interruptions at a clause boundary were also viewed as appropriate in short utterances. Whilst the perceptions of interactants may differ from those of judges, this result would suggest that the location of the interruption will be important to the perception of the strategic quality imputed to the initiator of such acts.

For an interactant wishing to exert control, therefore, but without inviting negative feeling, an interruption initiated at a transition relevant location would generally ensure that the first speaker completed their speech and also - perhaps consequently - perceived the interruption as appropriate through its location at a boundary point. That such placements arise with a greater regularity within the AP quadrant implies a degree of intentionality on the part of interactants in producing the interruptions.

In contrast the greater frequency of simple interruptions in the DE quadrant, where characteristically the participants are engaged in angry exchanges, may relate to the more usual notion of interruptions as hostile acts. It is noteable that this switch type usually arises at non-transition relevant locations, and by definition such interruptions 'cut across' and leave incomplete the first speakers utterance. For the purposes of an angry exchange, such a structure would carry some interactional force through its denial of floor space to co-participants. Ferguson suggests that simple interruptions may be "mistimed or misjudged attempts to take the floor" (Ferguson 1977 p 301). The present data neither confirm nor disconfirm such a proposition, though the suitability of such switches to provide a structural reflection of an emotional intent may be noted, raising some question as to the intentionality of their appearance.

Finally some comment may be made on the lower frequency of interruptions (considered as a unitary class) in the LM quadrant. Where co-operation is attempted this seems to be signalled through a reduced level of interruption. Some note has been made of the rather high level of interruption in this study as contrasted with other studies. It may be that the usual 'laboratory' tasks set for interactants induce co-operative behaviour - and therefore a higher frequency of smooth switching.

The major implication of this study is that interruptions may be construed as having interactional meaning not simply on the basis of their occurrence in the place of smooth switches, but particularly by virtue of their placement within the flow of speech in relation to boundary points in the text of the previous speakers utterance. Placement of utterances at differing loci may carry different interactional force. This proposition is studied in more detail in Chapter 8.

CHAPTER 8

COHESION: THE STRUCTURAL LINKING OF DISCOURSE

In the previous study interruptions were found to be differentially distributed across dialogue with respect to the strategic quality of the discourse, such that the frequency of initiation of interruptions at boundary points, (and hence the frequency of appearance of the sub-classes of interruptions), seemed to bear some relation to the content of talk. This suggests that interruptions carry interactional meaning, and that such meaning may be mediated through structural qualities such as the transition relevance of their initiation points.

Quite clearly, however, the language utilised within talk may be of considerable importance to the way in which an interruption may be 'read'. Thus the notion of a 'repair mechanism' exists (Sacks et al 1974) in which failures of interactional procedure[1] may be modified through linguistic usage, as in:

(Invented dialogue)

A: It seems // <u>to me that</u>
B: <u>Sorry but I</u> just wanted to say

Here the first word indicates an awareness of a breach of the (entirely hypothetical) procedures, and attempts to justify the presence of an interruption prior to claiming the turn. In demonstrating respect and consideration, the meaning of the exchange is presumably very different from an interruption which missed the first two words. Whilst different intonation patterns will allow still further readings (e.g. see Brazil 1976), it seems evident that the content of talk is of relevance to the meaning of an interruption, and that it may serve to alter such meaning through the advancement of a reason for particular interjections.

1: For the purposes of discussion such procedures are not defined or their possible character explicated.

Since it is rarely the case that all interjections are followed by such clear remedial devices as instanced above, it would seem reasonable to consider whether interactants might expect particular linguistic patternings to obtain between utterances such that certain linkings provide for their own repair by establishing a rationale for their presence at that point.

This question addresses the issue of how utterances might be combined so as to form a recognisable dialogue, and not merely a set of turns at talk. That dialogues are regularly produced, and seem to possess a coherence, is a matter of common observation, though how this is achieved is less clear. Within the ethnomethodological tradition relationships between utterances have been considered in terms of 'pair parts', in which a first pair part (such as a question)provides for a second (such as an answer), and in addition makes the absence of any second response 'noticeable'. Further work has elaborated the notion of the "insertion sequence" (Schegloff 1972) in which departures from such pair parts could be nested within the pair, whilst not disturbing the relevance of the original pair part. Thus:-

A: Can you tell me where Richard lives?

B; You know Richard has moved now

A: Yes

B: Well I think its ... (etc)

Jefferson (1972) considers a variation on this theme through the notion of the side sequence, where talk is suddenly interrupted, usually by a request for clarification, and after some set of exchanges resumes from the point at which the diversion arose. This device differs from that of the insertion sequence in that there is no set of adjacency pairings operating across the embedded sequence.

A major problem with such analytic devices is that they can only account for regularities across groups of utterances characterised by specific linguistic relations between them - such as question-answer, or misapprehension-clarification. Such

specificity limits the applicability of this system, particularly where an attempt is made to account for much of the discourse within a dialogue, and not extractions from talk with particular features of interest.

The work of Sinclair and Coulthard (1975), which has been reviewed in the introduction, suggests that unitization of discourse at a semantic level takes place not across but within turns, through the production of exchange struc ..es, as in:

(Classroom interaction)

T: Where does food go before it reaches your lungs?
P: Your windpipe miss
T: Down your windpipe ... now can anyone tell me the name for windpipe

(Coulthard 1977 p 95)

Having initiated the sequence through a question-answer format, the continuity of the talk outside of specific soliciting devices seems to be achieved through the links provided by the repetition of the phrase 'down your windpipe", which serves to place a boundary for a new episode within the teachers second utterance. Clearly there is some sense in which the repetition serves to tie one utterance to the other in the absence of specific linguistic constraints that would make the placement of one utterance conditional on some previous portion of talk. Coulthard (op cit) notes that the language used by participants serves to tie one utterance to the next through the use of pronouns and pro-verbs, and by such adverbs as 'too' or 'as well'. All of these features provide for a 'referential' link to the previous talk, since in a sense they all exemplify elliptical action, which requires that they be seen as becoming meaningful in the context of previous talk.[1]

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1. Quite clearly this chain of ellipsis can extent beyond any two utterances, and the example given above demonstrates this well; the second teachers utterance not only borrows some of its meaning from the pupils talk, but also from her first 'framing'question. (see Sinclair and Coulthard 1975, and introductory review).

Such referential linking of units of language, which results in the production of text, has been considered by Halliday and Hassan (1976) in their concept of 'cohesion'. This is defined in terms of a number of inter-sentential 'grammatical' devices whose function is to tie one sentence to the next, such as pronominalisation, repetition, ellipsis, conjunction and anaphoric reference (in effect a reference back to some previous item). Further to this, cohesion may be introduced into texts not only by linguistic but also by situational factors, such as the roles taken by speakers, or by particular events occurring in the situation to which reference is made (ibid p 21). On occasion such situational reference can produce a cohesiveness achieved in the absence of specific linguistic usages, as in

(overheard in passing; talking of a then famous and current kidnapping)

A1 I'm going on holiday next week
B1 Oh where are you going again?
A2 Italy
B2 Aaah well make sure you don't go to Sardinia then eh!
A3 Eleven million pounds!

The reference to the ransom demanded, arising from the implicit reference to the location of the kidnapping in B2, and delivered with a contrastive stress suggests that dialogue can often cohere through a high level of elliptical talk, and indeed certain workers have identified this as a characteristic of conversation between intimates (Kent 1976).

The notion of cohesion, which seems to act as one mechanism for producing exchange structures, seems to offer the possibility of indexing referential continuity,[1] a feature of discourse which Sinclair and Coulthard (op cit) and a number of workers in

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1. Cohesion is a measure of referential rather than topical continuity; the lack of necessary relation between these notions is implied by the concept of an exchange structure, where units of discourse arise within utterances. Thus reference and continuity between two speakers is possible without the maintainance of a single topic, and cohesion is not a concept which addresses itself to the problem of topic change.

the field (e.g. Sacks 1967, cited in Coulthard op cit) consider as characteristic. Were this to be the case, departures from coherence would become noticeable as deviations from a normative structure.

Vuchinich (1977) has conducted a series of studies in which he attempts to investigate the consequences of a demonstrable failure of speakers to produce cohesive utterances, where cohesion is defined as "a property of relationship between two fragments of conversation which binds them together by means of a particular type of structural association";(1977 p 232). Formally the types of association considered by Vuchinich include ellipsis, conjunctions, presupposition, repetition, pro nominalization and anaphoric reference.[1] Vuchinich argues that cohesion is a fundamental 'taken for granted' quality of conversation, and that when turns are not demonstrably cohesive it will be marked by some aspect of the conversational system. In order to examine this hypothesis he conducted a series of experimental interactions between a stooge and 52 subjects engaged in dyadic interactions. The stooge was required to produce non-cohesive utterances, an example of which would be (op cit p 235).

A1: I really worked hard my second semester and finals came and I really freaked out ... my girl friend and my room mate and I would stay up all night and then we'd go out on the roof of Stockwell and just go AUUGGHH - it was really bad and I'm still a little tense and hyper from it.

Stooge: Yeah

A1: it hasn't worn off

Stooge: Uh huh

A3: God it was real icky

Stooge: yeah I know well the university is really - they want your money you know

A4: they sure do

Stooge: Monopoly is a really fun game

(2.2. second gap)

A5: Why do you bring that up?

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1. See Page 139 of this introduction for a fuller account of the operationalisation of cohesion

Vuchinich utilises three measures in order to examine the marking of such turns. Firstly he considers 'remedy sequences', which function as attempts at repair; thus in the example above A5 could be seen as an attempt at this manoeuvre. A second instance of marking is given by a prolonged latency between the non-cohesive and succeeding utterance (again arising in the example above). Thirdly 'topic reference' effects are considered to arise, in which the maintainance of the topic under discussion prior to the non-cohesive turn is examined. Non-cohesive turns were followed by significantly more remedy sequences and longer latencies than were cohesive turns. In addition topics introduced non-cohesively were not incorporated in the conversation, whereas approximately 62% of cohesive items were.

Vuchinich's account is of considerable interest, and whilst it is the case that non-cohesive utterances produced in his corpus are rather crude, their very impact argues for the importance of cohesion in everyday dialogue. Indeed, so unusual would such turns be that it would be reasonable to suspect the originator of them to be suffering some form of thought disorder.

It is possible to argue that failures of cohesion in everyday spontaneous talk are possible, but not so dramatic. That this might be so is suggested by Vuchinich in his discussion of 'logical unit relationships', whose use will provide for cohesive linking, but whose misuse will provide for the appearance rather than theachievement of tieing. These relationships are:

1: Accounts - where a second item offers an account, or an attempted causal relation with the first.

2: Result - where the second item furnishes a consequence of some event referred to by the first.

3: Item match - where the second item is offered as a match, or similarity between it and the first item.

Thus in each pair of utterances there is:

a: A previously occurring item

b; A specific logical construct - respectively causality, effect, identity

c: A lexical item in the second turn tied to the previous turn through this logical relationship

Thus within this structure it is clear that it is possible to employ the correct set of lexical items denoting logical relationships, but with the set of lexical items in (c) inappropriate to the first item; the result will be the incorrect use of referential (logical) items, whose use will be non-coherent.

The use of logical unit types provides a more rapid index of coherence than the searching out of specific grammatical categories, since it allows for linking of utterances to be examined through their pragmatic meaning and as such coherence can be more readily identified.

In contrast to Vuchinich it may be more appropriate to locate instances of cohesive and non-cohesive sequences from within spontaneous dialogue, and one site where variations in cohesion might be expected would be at interruptions. In the introduction to this section the notion was advanced that interrupters might provide for the repair of their interjections through the language they employ. It is proposed that an interruption which is cohesive with the section of talk it breaks into can operate in this manner through the provision of a clear link, and therefore a rationale for the placement of talk at that point rather than a later point of completion.

Previous sections have considered variations in the temporal placement of interruptions, with particular emphasis on the transition relevance of their initiation points. In this study the covariation of this structural quality with the textual feature of cohesion is examined. The impact of combinations of these two factors on the progress of the interaction is considered, together with judgements of observers of the encounters as to their perceptions of the interruption exchanges. In this manner some light may be cast on the fuller explication of the ways in which interruptions 'mean'.

At this point it is important to point out that whilst cohesion may be meaningful in the evaluation of turn switches, its presence or absence is not immediately related to the strategic states considered in Chapter 7. As may be seen from Figure 6, episodes characterised as DE - angry may well include a number of

FIGURE 7: RELATIONSHIP BETWEEN COHESION AND STRATEGIC CONTENT

1) Presence of cohesion in "angry" exchanges

The L's conflict W22 onwards - episode rating DE - angry (both partners)

Cohesion (Talking of wife not wanting tohave to send off for husband's driving licence)

W ... and I thought right I'll go down and get a postal order and a stamp but I'm definetely not filling it in and I'm not sending it off so I did that for you and it stuck for nearly another fort // night

C+ H It didn't it // didn't

C+ W It did Mick you see // time and

C+ H It was never there for a fort // night

C+ W It was over a week

2) Absence of cohesion in co-operative exchanges

The W's Bill & Linda H40 onwards - episode rating LM - co-operative-affiliative both partners

Cohesion (Talking of Bill and Linda's problems in general, but of some friends in particular who have problems)

H And there'sbeen no reconciliation has there just divorce

(W Mmmmmmmm)

W I really don't know

H Cause all our friends have, people seem to be ab/ to talk together at least

C- W I mean their not getting on so well is an understatement isn't it (etc)

N.B. the 'their' in the wife's last utterance refers to 'Bill and Linda', last spoken of eight utterances previously.

cohesive interruptions, and those coded as LM - co-operative contain non-cohesive switches. Cohesion is a measure solely of referential tieing, and not strategy.

The operational definitions of cohesion and temporal placement are given in the methodology section following this introduction. For present purposes interruptions may be considered to have two patternings of cohesion in which:

a) The interruption is cohesive and thus establishes an exchange structure with the first speaker - though not necessarily that being produced by the first speaker

b) The interruption is non-cohesive, and thereby interrupts the exchange being formed and initiates a new section of talk without reference to the first speaker.

The concept of transition relevance has been introduced in earlier studies.

It is proposed that

1) The absence of cohesion will be noticeable to observers, and be marked interactionally both through the non-verbal and verbal behaviour of interactants, since such interjections do not provide for their own repair.

2) That following similar reasoning cohesive interruptions will not be marked.

3) That because cohesive interruptions act to 'repair' the potentially problematic nature of an interjection there will be an interaction between the transition relevance of the interruption and its cohesiveness. Specifically the presence of either transition relevance or cohesiveness should act to provide some account for the initiation or a turn; the absence of these qualities would provide no such justification. Thus the presence of cohesiveness should lead to the perception of a greater 'appropriateness' of an interruption than should absence of this quality. Where the location of the interruption is not transition relevant the presence of cohesion should increase the rating of appropriateness. The absence of both transition relevance and cohesiveness should lead to the perception

of the interruption as 'inappropriate'.

4) That the presence or absence of cohesiveness and temporal placement will influence the evaluation of interruptions as positively or negatively toned.

5) That because cohesion provides a textual linking of one turn to another, the perception of interruptions as interruptions may be influenced by its presence or absence. It may be noted that no study has attempted to establish that the technical definition of interruptions conforms with their perception as such.

METHOD

The major experimental resource was a corpus of 48 extracts from the six conversations held between the couples, selected so as to represent each couple equally. In each extract one member of the couple interrupts the other so as to produce a simultaneous turn (Duncan 1972). A further condition was that the length of the interrupted and interrupting utterances were such as to provide a clear indication of the content of talk within them. Utterances were selected by examining the first eight exchanges conforming to the above criterion in each transcript. These extracts were classified into four groupings on the basis of two characteristics - "temporal placement" and "cohesion".

Temporal placement was defined in terms of the transition relevance of the point at which an interruption arose. As defined in Chapter 7 this refers to interruptions arising within one word of a clause boundary arising in continuous speech (cf Duncan 1972) or within the pause bounding such locations. Interruptions where the locus of initiation is defined by these criteria are coded T+, and where such features are absent as T-

Cohesion is defined by a combination of characteristics derived from the work of both Halliday and Hassan (1976) and Vuchinich (1977). As indicated in the introduction to this study, cohesion refers to the existence of trans-utterance relationships, correctly and recognisably applied, which serve to provide for a linkage between

two utterances. Such trans-utterance relationships serve not only to delineate the relationship between utterances, but also to make such linkage apparent and justifiable to participants to discourse.

The relationships considered to constitute cohesion were

a) Account (Vuchinich op cit) - where the second item is offered as an account of the first, as in:-

A He gave a lot of money away

B Well it was for tax purposes

b) Result or consequence (Vuchinich op cit) - where the second item shows the consequence or result of an action, as in

A I couldn't park in the car park so I had to park by the bank

B Oh, so then you still had to walk

c) Identity - where the second item is offered as a match for the first

A ... and then they tried to leave without paying

B Oh, yeah, they tried to do that when I was there too

These items, culled from Vuchinich (op cit) were considered insufficient to capture the full range of possibly cohesive tieing devices; for this reason two more categories were added. It should be noted that these are not necessarily exclusive of the other three; since the concern is to capture only cohesive or non cohesive sequences, such an overlap is acceptable. Thus the remaining categories are:

d) Completion - where the second utterance provides a completion for the first - in effect the second utterance borrows a complete set of referents in order to form an elliptical utterance, as in

(The W's Conflict, H23, extract 19)

H-Yeah the work interferes. Ideally what should happen, right, for both of us, is that I should get this thing finished so that then it // doesn't interfere

W-You can devote the entire rest of your life to me

e) Correction[1] - where the second utterance is an attempt to correct redefine or challenge a specific item in the first utterance, either through explicit or implicit referencing.

(The W's Conflict H41)

H - we are very fortunate aren't we I suppose that we've got things to do anyway apart from er going out, I mean going out isn't the end, we can both exist qu//ite well

W - No its not so much going out Frank as being able to relax without the, without your work hanging over, its like the sword of Damocles

---

[1] Some workers might suggest that the inclusion of completion and correction as exemplars of cohesion thereby defines such utterances as back channel responses. Thus whilst Rosenfeld (1977 p 296-298) suggests that listener responses such as 'mm hmm' are usually taken as instances of this category, Yngve (1970) includes questions, filling-in information presented by the speaker and making comments addressed to what has just been said within this class. Duncan and Nederehe (1974) found difficulty in distinguishing between speaker and listener responses using this scheme. Kendon (1967) utilised the length of an utterance, together with semantic features, in order to distinguish the two classes of behaviour. Were it to be the case that only a completion or correction was offered, it would seem reasonable to denote such talk as back channel. However, Extract 19 (given above) suggests that even this criteria is not appropriate. This interjection does not, in any sense, seem to be offered as an accompaniment to the husband's talk, but is clearly intended to stand as a comment in its own right; such a criterion seems more appropriate in distinguishing back-channel comments from turn-claims, and is therefore utilised here.

All 48 extracts were coded by ADR and two independent psychologist judges for the presence or absence of these five categories; the absence of any category was considered to render that sequence non-cohesive. Inter-rater reliabilities were computed for the marking of any form of cohesion (as opposed to specific categories). Between all three judges there was 80.2% agreement as to presence or absence of cohesion; between any two judges the figures were 80.2%, 83.3% and 87.5% Disagreement as to the allocation of any items in dispute was settled by subsequent discussion amongst all three judges subsequent to rating. From the original pool of 48 sequences, the following groups were formed (where T and C represent temporal placement and cohesiveness respectively, and a + or - following this symbol stand for the presence or absence of each feature).

T+C+	N = 16
T-C+	N = 16
T+C-	N = 8
T-C-	N = 8

In order to check on the adequacy of the rating and classification of these extracts the number of turn yielding cues associated with the turn endings were examined. From Table 36 it can be seen that no extracts rated as T+ arose in the absence of turn-yielding cues (Duncan 1972); with only four exceptions all extracts rated as T- were not initiated in the presence of such cues.

In order to examine the ratings of cohesiveness, all sequences were checked blind by ADR for the presence or absence of cohesive features, as delineated by Halliday and Hassan (1976). These were (a) prenominalization (b) repetition (c) ellipsis (d) anaphoric reference (d) conjunction. The results of this analysis are presented in Table 37A. From this analysis it can be seen that items recognised as cohesive using an extension of Vunchinich's categories contained a significantly greater number

of any type of linguistically cohesive device than those deemed non-cohesive. This would seem to validate the use of the Vuchinich categories.

Table 37 B shows the number of cohesive ties utilised within any one sequence. It can be seen that items falling within the C+ grouping are significantly more likely to contain one or more ties when contrasted with the C- groupings (chi-squared = 20.28 df 2 $p < 0.001$) and that almost half of this group contain more than one tie in any one sequence.

Each of these extracts was then recorded individually on audio tape, such that a random organisation of the groupings was achieved.

STUDY A: Reactions of naive observers to the sequences

Procedure

Fifteen subjects were recruited for this study; six were female and the rest male; all were undergraduate students in psychology, and all were naive as to the rationale for the study. Each subject was asked to listen to an audio recording of the 48 sequences; each sequence was presented individually together with a transcript of the portion of dialogue they were listening to. The transcript also contained relevant contextual information, where appropriate. Eight subjects listened to the dialogues in the order 1 - 48, the remainder starting at extract 25 - 48 and going on to extracts 1 - 24.

Subjects were told that this was an experiment "where we are looking at people's reaction to interruptions", and were asked to listen to each extract in turn and to fill-in a questionnaire about it. They were encouraged to work on their first reactions to the sequences rather than attempting to analyse what they had heard.

A copy of this questionnaire together with the instructions to subjects are included in Appendix 3.

A preliminary question (addressed to hypothesis 5) requested subjects to assess which participant was interrupting, and to comment on any general features of the sequence.

The second and third questions asked subjects to assess whether or not they felt the interruption to be 'appropriate' at the point at which it arose. These questions were addressed to hypotheses one and two, and were phrased such that in question two subjects were asked to judge the sequence from the point of view of the current speaker, whilst in question three they were asked to do this from the point of view of an 'impartial observer' when making this judgement. For both questions ratings were made on a five-point scale marked by the poles of 'partner should have waited' to 'quite appropriate for partner to speak then' for question 2, and by 'not appropriate' to 'quite appropriate' (for partner to have interrupted) in question 3. It was explained to subjects that the word 'appropriate' was ambiguous, and that different people might have different ideas as to what the word meant in this context. In this way it was hoped to tap subjects normative expectations of interruption sequences, but without any strong indication as to which aspect of the discourse they were to respond to. Two differing standpoints were utilised so as to examine any differences emerging between speaker and impartial roles; in particular the notion of the speakers right to the floor may be examined through differences which emerge between these two vantage points.

A final evaluative question asking 'what would you think of someone who interrupted you in this way' was given in order to allow open-ended comment on the extracts. These comments were subsequently rated by two independent judges on a five-point scale ranging from a negative pole (person shows greater interest in self than with speaker, not listening, unconcerned, clear negative feelings) to a positive pole (shows interest in speaker, positive feelings).

RESULTS

Table 38 shows the mean ratings given to each sequence within the four groupings of temporal placement and cohesion for question 2 (taking the role of the speaker) and question 3 (taking an impartial role). Table 39 shows the mean ratings derived for each speaker over both roles.[1]

When taking the role of the speaker any interruption is seen as less appropriate than when taking the role of an impartial observer (mean rating as speaker = 2.78; as impartial observer = 3.3, ANOVA $F = 6.74$ df 1,28 $p<0.01$).

The influence of cohesion and temporal placement on judgements of appropriateness is identical when ratings are made in the speaker role, and as an impartial observer. Cohesive sequences were judged to be significantly more appropriate than non-cohesive sequences in both roles (mean rating in question 2 for C+ 3.05, for C- 2.5 ANOVA $F = 18,93$ df 1,14 $p<0.001$; in question 3 rating for C+ 3.6, for C- 3.0 ANOVA $F=18.51$ df 1,14 $p<0.001$). No significant differences were apparent when considering the point of initiation of the interruptions. (Mean rating in question 2 for T+ 2.75, for T- 2.8 ANOVA $F = 0.01$ df 1,14 n.s.; in question 3 rating for T+ 3.55, for T- 3.25 ANOVA $F = 1.05$ df 1,14 n.s.). However a significant interaction between temporal placement and cohesion was apparent in ratings made within both 'roles'. This is graphed in Figure 8 , where it is apparent that a combination of non-cohesive interruptions placed at locations which are not 'transition relevant' are viewed as particularly inappropriate, (cohesion X temporal placement in speaker role ANOVA $F = 5.76$ df 1,14 $p<0.03$; in impartial role ANOVA $F = 10.47$ df 1,14 $p<0.001$).

Table 40 shows subjects' responses to question 1, where they were asked to comment on whether they viewed the sequences as interruptions . Only 13 of the 48 extracts were viewed as interrupted by all participants; in the remainder some disagreement was found.

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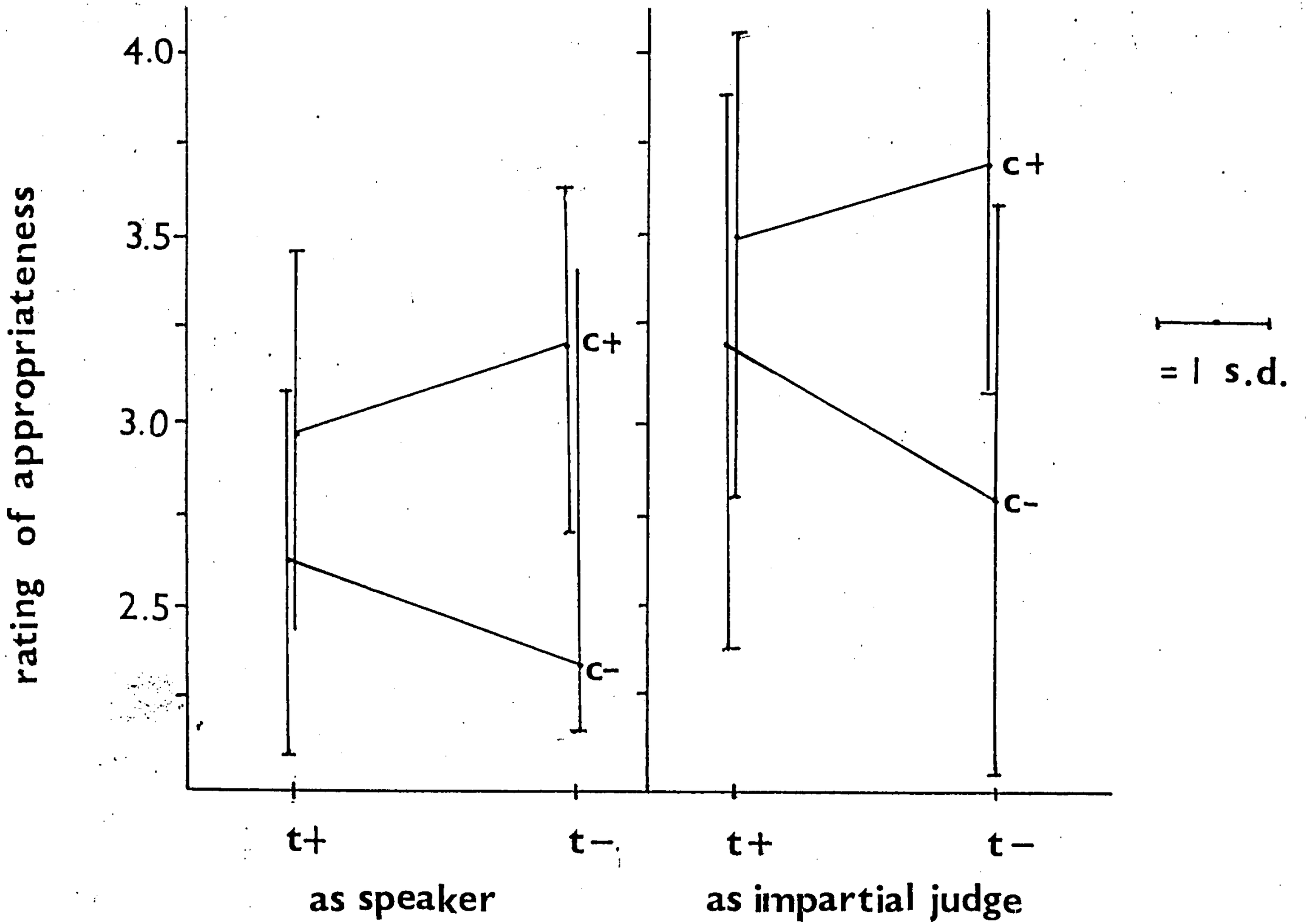
1. See Appendix 4 for analysis of variance tables

FIGURE 8: MEAN RATINGS OF APPROPRIATENESS OF INTERRUPTION SEQUENCES FROM POSITIONS OF 'SPEAKER' AND OF 'IMPARTIAL JUDGE'



Accordingly a cut-off point of three or more subjects (20%) judging a sequence not to represent an interruption was adopted; this cut-off point is entirely arbitrary, but the results do suggest some systematic bias in respondents' responses. The frequencies resulting from this analysis are presented in Table 41. Of the sixteen sequences judged as 'not interrupted' by this criterion thirteen fell into the C+ and three into the C- categories, this differential distribution being significant (chi-squared = 5.03 df 1 $p<0.05$). In contrast a more even distribution is found when temporal placement is considered, with 7 and 9 of the sequences being placed into the T+ and T- categories respectively (chi-squared = 1.49 df 1 n.s.).

When considering the original combinations of groupings in which both temporal placement and cohesion arise, no significant differences emerge in the patterning of responses (chi-squared = 4.96 df 3 n.s.). The most noteable feature of this analysis is however the finding that without exception sequences classified as T-C- were seen as interruptions.

Finally question 4 asked subjects to say how they would feel if interrupted in the manner exemplified by each extract. The results of a content analysis of this data are presented in Table 42. It can be seen that the ratings of both judges were comparable, (t test = 0.23 df 47 n.s.) and analysis of the combined scores suggests that subjects viewed the emotional tone of interruptions as significantly more positive where cohesive extracts were considered; no effect was found for the temporal placement of the interruption (Mean values C+ 2.75 C- 2.38; T+ 2.61 T- 2.54; Kurskall Wallis test $H = 9.59$ df 3 $p<0.025$).

In order to establish that no artefactual characteristics of the interruption sequences were biasing these results, two surveys of the extracts were conducted. A possible source of such bias might arise were it to be the case that overlapped interruptions - where the first speaker completes his/her utterance - might predominate in the C+ class, thereby suggesting that it is the factor of completion that accounts for the results obtained. An over-representation of simple interruptions in the C- category might lead

to similar conclusions. From Table 43 it can be seen that neither for the factors of cohesion or temporal placement are the Ferguson categories of interruptions differentially distributed.

A second source of bias would arise were a clear association between cohesion and the content of talk found. The location of each extract within each Leary quadrant, as defined by the results of study was ascertained. As is evident from Table 44 there is no significant over-representation of extracts within quadrants (chi-squared = 1.26 df 1 n.s.)

TABLE 36: NUMBER OF TURN YIELDING CUES ASSOCIATED WITH EXTRACTS

No. OF CUES	0	1	2	3
T+C+	0	5	9	2
T+C-	0	5	3	0
T-C+	13	1	2	0
T-C-	7	0	1	0

TABLE 37: A: FEATURES OF COHESIVE AND NON COHESIVE SEQUENCES

	T+C+ N=16	T-C+ N=16	T+C- N= 8	T-C- N= 8
pronominalization	3	2	0	1
repetition	7	6	1	0
ellipsis	4	3	0	0
anaphoric reference	3	7	1	1
conjunction	3	3	0	1
TOTAL	20	21	2	3

TABLE 37: B: NUMBER OF TIES USED IN EACH SEQUENCE

No. of ties used	0	1	2
group			
T+C+ (N=16)	1	9	6
T-C+ (N=16)	2	8	6
T+C- (N=8)	6	2	0
T-C- (N=8)	5	3	0

No. of ties used	0	1	2
i.e. cohesive	3	17	12
non-cohesive	11	5	0

chi-squared = 20.28 df 2 $p < 0.001$

TABLE 38: MEAN RATINGS OF APPROPRIATENESS WITHIN CATEGORIES TAKING ROLE OF SPEAKER AND IMPARTIAL OBSERVER

	TAKING ROLE OF SPEAKER		TAKING ROLE OF IMPARTIAL OBSERVER	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
T+C+	2.9	0.48	3.5	0.59
T-C+	3.2	0.52	3.7	0.76
T+C-	2.6	0.47	3.2	0.57
T-C-	2.4	0.81	2.8	0.86

where 1 = not appropriate
5 = appropriate

Analysis of variance[1]

a) Taking role of speaker

2 Factor repeated measures ANOVA

Cohesion $F = 18.93$ df 1,14 $p<0.001$

temporal placement $F = 0.01$ df 1,14 n.s.

cohesion x temporal placement $F = 5.76$ df 1,14 $p<0.03$

b) Taking role of impartial observer

2 Factor repeated measures ANOVA

Cohesion $F = 18.51$ df 1,14 $p<0.001$

Temporal placement $F = 1.05$ df 1,14 n.s.

Cohesion x temporal placement $F = 10.47$ df 1,14 $p<0.006$

c) Contrasting role of speaker vs impartial observer

3 Factor ANOVA

Cohesion $F = 36.73$ df 1,28 $p<0.001$

Temporal placement $F = 0.62$ df 1,28 n.s.

Role taken $F = 6.74$ df 1,28 $p<0.01$

Cohesion x temporal placement $F = 15.15$ df 1,28 $p<0.001$

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[1] Full analysis of variance tables appear as Appendix 4

TABLE 39: MEAN RATINGS OF APPROPRIATENESS BY TEMPORAL PLACEMENT AND COHESION, TAKING ROLE OF SPEAKER AND IMPARTIAL OBSERVER

a) Taking role of speaker

T+	2.75
T-	2.8
C+	3.05
C-	2.5

b) Taking role of impartial observer

T+	3.35
T-	3.25
C+	3.6
C-	3.0

c) Combining role of speaker and role of impartial observer

As speaker overall mean rating = 2.78

As impartial observer overall mean rating = 3.3

T+	3.05
T-	3.03
C+	3.33
C-	2.75

TABLE 40: PERCENTAGE OF SUBJECTS JUDGING AN EXTRACT AS INTERRUPTED

Percentage judged as interrupted (N = 15)

extract number		%age	extract number		%age
1	t-c+	73.3	25	t+c+	73.4
2	t-c+	100.0	26	t-c+	80.0
3	t+c+	93.3	27	t+c+	60.0
4	t-c+	66.7	28	t+c-	80.0
5	t+c+	100.0	29	t+c+	80.0
6	t-c-	93.3	30	t-c+	86.7
7	t+c-	80.0	31	t+c+	80.0
8	t-c-	100.0	32	t-c+	86.7
9	t-c-	86.7	33	t-c-	100.0
10	t+c-	93.3	34	t+c-	73.4
11	t-c+	80.0	35	t+c+	93.3
12	t-c+	73.4	36	t-c-	100.0
13	t-c-	100.0	37	t+c-	93.3
14	t+c+	100.0	38	t-c+	86.7
15	t-c+	100.0	39	t+c+	86.7
16	t-c+	73.4	40	t-c+	93.3
17	t+c+	80.0	41	t+c+	100.0
18	t-c-	93.3	42	t+c+	86.7
19	t-c+	93.3	43	t+c+	93.3
20	t-c+	100.0	44	t-c+	93.3
21	t+c+	86.7	45	t+c+	100.0
22	t+c+	93.3	46	t-c-	100.0
23	t-c+	66.7	47	t+c-	93.3
24	t+c+	80.0	48	t+c-	100.0

TABLE 41: FREQUENCY OF EXTRACTS JUDGED AS NON-INTERRUPTIONS BY CATEGORY

Considering items judged by 20% or more of rates to be non-interruptions

	judged as not interrupted	judged as interrupted		
No. falling into T+ category	7	17	(n=24)	$\chi^2 = 1.49$ df 1 n.s.
no. falling into T- category	9	15	(n=24)	
no. falling into C+ category	13	19	(n=32)	$\chi^2 = 5.03$ df 1 $P < 0.01$
no. falling into C- category	3	13	(n=16)	

no. arising as:-

	judged as not interrupted	judged as interrupted		
T+C+	6	10	(n = 16)	$\chi^2 = 4.96$ df 3 n.s.
T-C+	7	9	(n = 16)	
T+C-	3	5	(n = 8)	
T-C-	0	8	(n = 8)	

TABLE 42: RATING OF QUESTION 4 (' HOW WOULD I FEEL IF INTERRUPTED IN THIS MANNER') BY INDEPENDENT JUDGES [1]

GROUP	JUDGE 1		JUDGE 2		COMBINED RATING	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
T+C+	2.84	0.32	2.70	0.30	2.77	0.31
T-C+	2.71	0.42	2.78	0.38	2.74	0.40
T+C-	2.39	0.36	2.48	0.39	2.44	0.38
T-C-	2.35	0.28	2.32	0.38	2.33	0.33

MEANS ACROSS COHESION AND TEMPORAL PLACEMENT FOR COMBINED RATING

C+	2.75
C-	2.38
T+	2.61
T-	2.54

a) Contrasting ratings of judge 1 and 2; t test $t= 0.23$ df 47 n.s.

b) Contrasting ratings of each group on combined ratings:

Kruskall Wallis test $H= 9.59$ df 3 $p < 0.025$

Mann-Whitney Tests:

T+C+ vs T-C+	U= 116 (n1n2 16,16)	n.s.
T+C- vs T-C-	U= 25.5 (n1n2 8,8)	n.s.
T-C+ vs T+C-	U= 26 (n1n2 16,8)	$p < 0.05$
T-C+ vs T-C-	U= 25 (n1n2 16,8)	$p < 0.05$

---

1 Where 1 = negatively toned
5 = positively toned

TABLE 43: RELIABILITY CHECKS FOR COHESIVE UTTERANCES: FREQUENCY OF INTERRUPTION TYPES WITHIN GROUPS

	T+C+	T+C-	T-C+	T-C-
OV	3	4	7	5
I	12	3	7	3
SI	1	1	2	0

represented as:

	OV	I	SI	
C+	10	19	3	} chi-squared = 2.63 df 1 n.s. (excluding SI)
C-	9	6	1	
T+	7	15	2	} chi-squared = 2.32 df 1 n.s.(excluding SI)
T-	12	10	2	

TABLE 44: REPRESENTATION OF COHESIVE UTTERANCES WITHIN LEARY QUADRANTS

	AP	DE	HI	LM
C+	19	4	0	9
C-	7	2	0	7

chi-squared = 1.26 df 1 n.s.

(analysis excludes DE and HI quadrants)

STUDY B: Effects of cohesion and temporal placement of interruptions on the behaviour of interactants

In this first part of this chapter the consequences of temporal placement and cohesion for the judgements of observers were examined. Whilst significant and interesting results were obtained from this procedure, it is important that observable effects of these qualities are also present within the interaction itself. In this study two aspects of the interaction are considered; firstly the reaction of the interrupted partner in terms of counter-claims to the floor, and secondly the non-verbal behaviour of the auditor prior to initiating the interruption. Duncan and Niederehe (1974) propose a 'speaker-state' signal composed of four discrete behaviours by which back channel responses could be distinguished from turn claimings. These were defined as (ibid p 240):

(a) A shift in the auditor's head direction away from the speaker
(b) Initiation of a gesticulation (other than a self-or object adaptor)
(c) An audible inhalation
(d) Paralinguistic overloudness.

Whilst the display of one or more of the four behaviours were found to differentiate between turn claims and back-channel responses, further studies (Duncan and Fiske 1977 p 215) suggest that only the two gestural cues are reliable in this respect.

Duncan andNiederehe further propose that the balance of such speaker state cues and speaker 'floor yielding' cues will determine the outcome of turn taking attempts where simultaneous speech is present. It may be predicted, therefore, that where auditors perceive a boundary location within speech they will be less likely to display the speaker state signal. Since boundary locations (noted in this study as TR+) are more usually associated with points where such turn transitions arise, then interactants might register the 'appropriateness' of locating their interruptions at these points through differential use of the signal. The role of

cohesion in providing for the repair of inappropriately placed interruptions might also be registered through the presence or absence of this signal.

i) Interruptions and subsequent claims for the floor

One indication of the appropriateness of an interruption might be given by the presence of counter-claims for the floor. Thus where a co-participant felt that an unacceptable deviation from normative practices had occurred, an attempt to resume the interrupted sequence of talk might be observed.

Method

The presence of a counter-claim for the floor was defined as the occurrence of any form of simultaneous turn arising following the initial interruption sequence studied in this experiment. Thus any class of interruption was considered to constitute a counter-claim. In order to establish the general probability of such counter-claims a sample of utterances encompassing approximately half the corpus was obtained by examining the W's Bill and Linda dialogue, and the L's and C's Conflict discussions. A baseline rate for the frequency of counter-claims following both smooth switches and interruptions was thereby obtained.

Results

The results of this procedure may be found in Table 45. It may be seen that non-cohesive interruptions are significantly more likely to be followed by a counter claim for the floor than is the case with cohesive sequences (rate of counter claiming = 75.0% and 40.6% respectively; chi-squared = 5.05 df 1 $p<0.05$). The point of initiation of the interruption did not influence the likelihood of subsequent counter-claiming (rate of counter claims for T+ = 54.2%, for T-=50.0%. chi-squared = 0.10 df 1 n.s.)

In the 50% sample 47.9% of all utterances were subsequently interrupted; interruptions of any type were subsequently followed by a further 'counter-claim' in 43.7% of cases. This latter rate is significantly lower than that obtaining for non-cohesive interruptions (chi-squared = 5.8 df 1 $p<0.05$), but statistically equivalent to that found in cohesive sequences (chi-squared = 0.12 df1 n.s.). Thus the effect of non-cohesive interruptions would appear to be to increase the rate of counter-claiming above that generally found.

Were it the case that non-cohesive utterances were longer than cohesive utterances, a counter-claim to the turn could arise simply by virtue of their greater longevity. From Table 46 it is apparent that the length of interrupting utterances are statistically equivalent across the four groups (Kruskall-Wallis H test for utterances followed by counter claim and not followed by a counter-claim respectively: H = 1.49 df 3 n.s. and H = 0.44 df 3 n.s.; for all utterances whether or not followed by a counter claim H = 0.04 df 3 n.s.)

B: SPEAKER-STATE SIGNAL DISPLAY AND INTERRUPTION CLASS METHOD

Each of the 48 extracts was examined for the presence of any of the four non-verbal behaviours considered by Duncan and Nederehe (op cit) to constitute the speaker state signal, and described in the introduction to this study. A display of one or more of these behaviours within a period of speech extending from one unit of analysis (defined by the presence of a turn yielding cue) prior to the auditors verbalisation to "the onset of the first word following the syllable carrying the primary intonation stress within the first phonemic clause of the auditors verbalisation" (ibid p 216). All extracts were examined by ADR and an independent psychologist judge; agreement as to the presence or absence of the behaviours constituting the

signal was 90.0%. Where disagreements arose these were resolved by a joint review of the extracts.

Results

As may be seen from Table 47 the presence or absence of cohesion across the interruption does not seem to influence the production of the speaker state signal (chi-squared = 0.21 df 1 n.s.) The placement of the interruption at a transition relevant location, in contrast, leads to a significantly reduced likelihood of the presence of any of the four speaker state cues (chi-squared = 5.17 df 1 n.s.). The low rate of production of the speaker state signal and thereby the low cell entries within each interruption type, makes detailed examination of the constituent behaviours difficult. It may be noted, however, that the cue of 'audible inhalation' was used with an approximately equal frequency to the head shift and gesture patterns. Paralinguistic overloudness was not observed to arise in the absence of one of the remaining cues, and no more than two cues were observed within one display of the signal.

Table 48 shows the rate of counter-claims for the floor following an interruption preceeded by a speaker state signal: this does not appear to be influenced by such a display (chi-squared = 1.40 df 1 n.s.).

TABLE 45: PERCENTAGE OF COUNTER-CLAIMS TO THE FLOOR FOLLOWING INTERRUPTION SEQUENCES

	NO COUNTER CLAIM FOLLOWS		COUNTER CLAIM FOLLOWS		
	N	%TOTAL	N	%TOTAL	
T+C+	9	56.25	7	43.8	
T-C+	10	62.5	6	37.5	
T+C-	2	25.0	6	75.0	
T-C-	2	25.0	6	75.0	
EXPRESSED AS:-					
C+	19	59.4	13	40.6	*
C-	4	25.0	12	75.0	
T+	11	45.8	13	54.2	
T-	12	50.0	12	50.0	*
ALL INTERRUPTIONS IN 50% SAMPLE	97	56.3	76	43.7	
UTTERANCES OF ANY TYPE IN 50% SAMPLE	188	52.1	173	47.9	

* chi-squared = 5.05 df 1 $p<0.05$

* chi-squared = 0.10 df 1 n.s.

Comparing rate of counter claims in 50% sample with:

C+ - chi-squared = 0.12 df 1 n.s.

C- - chi-squared = 5.8 df 1 $p<0.05$

TABLE 46: LENGTH OF INTERRUPTING UTTERANCES WITHIN EACH EXTRACT (SECONDS)

GROUP	NO COUNTER CLAIM			COUNTER CLAIM		
	$\bar{X}$	S.D.	N.	$\bar{X}$	S.D.	N
T+C+	5.22	3.7	9	3.97	3.17	7
T-C+	5.32	4.4	10	4.75	4.16	6
T+C-	4.78	3.78	2	3.66	2.65	6
T-C-	6.3	3.1	2	4.08	2.87	6

Kruskall Wallis H test on:

all groups with no counter claim H = 1.49 df 3 n.s.

all groups with counter claim H = 0.44 df 3 n.s.

all groups with and without counter claiming H = 0.04 df 3 n.s.

TABLE 47: SPEAKER STATE SIGNAL DISPLAY AND INTERRUPTION CLASS

	PRESENT	ABSENT	CUES USED: HEAD SHIFT	GESTURE	INHALAT^{N}	OVERLOUD
T+C+	3	13	1	1	1	0
T+C-	0	8	0	0	0	0
T-C+	6	10	1	3	2	0
T-C-	4	4	1	2	1	2
TOTAL			3	6	4	2

	PRESENT	ABSENT	
C+	9	23	chi-squared = 0.21 df 1 n.s.
C-	4	12	
T+	3	21	chi-squared = 5.17 df 1 p<0.05
T-	10	14	

TABLE 48: RATE OF COUNTER-CLAIMING FOLLOWING SPEAKER STATE SIGNAL

	SPEAKER STATE SIGNAL PRESENT	SPEAKER STATE SIGNAL ABSENT	
COUNTER CLAIM FOLLOWS	5	20	chi-squared = 1.40 df 1 n.s.
COUNTER CLAIM DOES NOT FOLLOW	8	15	

Discussion

In this study an attempt has been made to understand relationships between the content of an interrupting utterance and its initiation point, and through this joint consideration of structural and textual features to reach a fuller appreciation of the social meaning of interjections. A particular feature of this examination has been the contention that the coherence of an interruption and its temporal placement within the previous speakers talk will be of relevance in the judgements of observers to the interruption sequences, and to the interactants themselves, and this proposition has been broadly confirmed.

Examining the results of this study in detail it is appropriate to note that observers seemed sensitive to the presence of coherence in assessing whether a sequence constituted an interruption. Whilst the majority of judges always took the sequences to represent interruptions, for some observers the presence of cohesion gave rise to judgements that no interruption had occurred. Such a pattern raises some question as to the equivalence of technical and 'common-sense' definitions of interruptions, and suggests that the temporal qualities of talk - as perceived by observers - are modifiable through its content.

The sense in which coherence seems to 'repair' the temporal mis-placement of utterances is evident in the similarities of observers ratings of the appropriateness of the extracts from the vantage point of the speaker, and as an 'impartial' observer. The presence of cohesion led to consistently higher ratings than where it was absent, and whilst the temporal placement of the interruptions did not seem to bias the judgements of observers in its own right, a significant interaction with cohesion is apparent. Thus where interruptions arose across the flow of speech (i.e. were rated as T-) but were coherent, they were judged as being equally as appropriate as interjections which were both transition relevant and cohesive. In contrast interruptions arising at similar temporal locations but without cohesion between turns were viewed as particularly inappropriate. This result suggests that coherence seems to 'repair' the temporal break of interruptions, and that observers show a primary orientation towards this textual feature. However the interaction between cohesion and temporal and placement suggests some sensitivity towards this latter feature, such that the absence

of both qualities is indeed notable by observers.

In the only directly comparable study known to this author, Argyle (1975) found that the location of interruptions at sentential clause boundaries (and in some conditions at clause boundaries within sentential units) was viewed as significantly more appropriate than their initiation within the flow of speech. Whilst this result seems apparently disconfirmatory of the present findings, it is of interest to note that <u>within</u> the class of non-cohesive exchanges arising across the speech flow were indeed viewed as less appropriate than transition relevant interruptions. Whilst no statistical evidence is offered here, the factor of cohesion may account for the apparent discrepancy of results.

When observers adopted different roles in making their judgements (those of the speaker and of an impartial judge) they tended to perceive all interruptions as less appropriate when in the speaker role. Nonetheless the differential patterning of ratings across the classes of interruptions remained consistent within roles. It may be that this bias in results relates to the notion that speakers do indeed have a right to the floor, and that all interruptions are equally unwelcome from this vantage point. The lack of differential response to cohesive interruptions <u>between</u> roles suggests that a general factor such as this, rather than any more specific influence, is responsible for this result.

Rating of the open-ended comments on the interruptions suggests that the presence of coherence across an extract is more likely to lead to its positive evaluation; as is consonant with the results discussed above observers did not seem sensitive to the location of the interruption with respect to the speech flow.

The sensitivity of observers to cohesion seems mirrored within the interaction, where the frequency of counter-claims for the floor is significantly increased by the absence of cohesion

across the turns; in contrast temporal placement does not influence the rate of re-interruption.

This result stands in marked contrast to that of Morris (1971) and Morris, Meltzer and Hayes (1971) who suggest that vocal amplitude, and not speech content, will determine the outcome of an interruption sequence. Thus it was found that where a current speaker raised his/her voice above that of the interrupter, this was highly correlated with the maintainance of the floor by that speaker. A similar heightening of vocal amplitude by the interrupter seemed to be markedly less effective. However, in many cases the speed of resolution was too fast to permit effective understanding of the interrupting utterances speech content (Morris op cit p 327), suggesting that these interruptions were characterised by markedly short periods of simultaneous speech. (A modal length of 0.3 seconds is quoted by Meltzer et al (op cit)). As the duration of simultaneous speech increased, the less able the amplitude model becomes in predicting outcome. This suggests that sequences utilised in this study would be relatively free from such effects.

There is considerable evidence to suggest that interactants are sensitive to the coherence between turns at talk. In producing the interruption, however; interrupters seem more sensitive to the temporal placement of the interruption, such that the 'speaker-state' signal was more likely to be displayed across the speech flow. Thus auditors seem sensitive to the location of their utterances with respect to the speech of their partners. Since the function of such a signal is to indicate the imminence of a turn claim within simultaneous speech and to ensure the success of such a claim (Duncan and Fiske 1977) the lower frequency of the display in association with transition relevant interruptions suggests that these locations are perceived as possible completion points into which speech may be interposed. In this respect the cohesion of the interruption is not a significant factor; it neither influences the rate of signal display, nor does it alter the rate of subsequent counter-claiming of the floor.

This result seems to introduce two levels of concern for interactants, which reflects a noteable division in the research efforts of workers who have studied conversation. Listeners seem sensitive to structural concerns in the production of their utterances, and most noteably such concern is oriented to the temporal placement of their talk. Earlier studies in this thesis have demonstrated that whilst the current speaker can influence the timing of turn claims through non-verbal signals, much of the variation in temporal patterning of such claims seems to relate to a concern to place speech within boundary points defined - to a degree - by the language being produced. Once having achieved this structural task, however, it seems that the language being used becomes of more relevance; not only does it seem that utterances should be characterised by cohesion, but such cohesion can reflexively modify and in a sense account for turn claims arising at 'irregular' locations. It is almost as though interactants are faced with 'how' to take a turn, and 'why' the turn is taken; as this study has demonstrated these activities are linked.

Research into interaction has often focussed upon either of these two issues; within social psychology non-verbal behaviour has been focussed upon as workers attempt to understand how conversationalists achieve a regular patterning of turns. Linguists and related disciplines within sociology have expressed more concern with the language used in producing turns. The work in this thesis suggests an interplay between these levels of analysis; this implicit theme is considered in the final overview.

CHAPTER 9:

GENERAL DISCUSSION AND OUTLINE OF A MODEL

The models of turn allocation principally considered within the literature are rather few, and only Duncan and SSJ seem to present a coherent account of this process. Neither of these models have any point of contact, and in some respects they cannot both be correct. Duncan proposes that turn allocation is operated principally through content-free turn-yielding cues considered to act independently and additively, such that a linear relationship exists between the presentation of cues and the probability of a turn taking attempt. The system is modifiable through the presentation of the speaker gesticulation signal, whose display 'cancels' the yielding qualities of any of the above cues. This model has no recourse to the content of dialogue as a resource for the operation of the turn system; within the SSJ model this is the only factor influencing turn allocations, and no non-verbal cues are considered. [1] It is not simply that the two models are inspecting differing aspects of the same process; their conclusions are mutually negating of the other.

Duncan's linear model emphasises the equivalence and independence of cues; in contrast SSJ focus upon the production of transition relevant locations through the completion of 'unit types'. However, some modification of each system might reduce their apparent incompatibility. Certain unit types are defined by clausal completions (as would be the case with sentential and clausal units), and would therefore be terminated by at least one of Duncan's turn yielding cues. Were Duncan's model to relocate clausal completion as a more significant yielding cue than the remaining signals - thereby replacing the notion of independence and additivity of cues with a more incremental model - then some reconciliation would be achieved.[2]

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[1] Whilst intonation is referred to as an implicit factor within their schema it is not allocated any formal or explicit role

[2] The role of non-verbal factors in SSJ, whilst neglected, are not denied. Thus their exclusion from the model is perhaps more a matter of ommission and does not contribute directly to incompatability with Duncan's schema

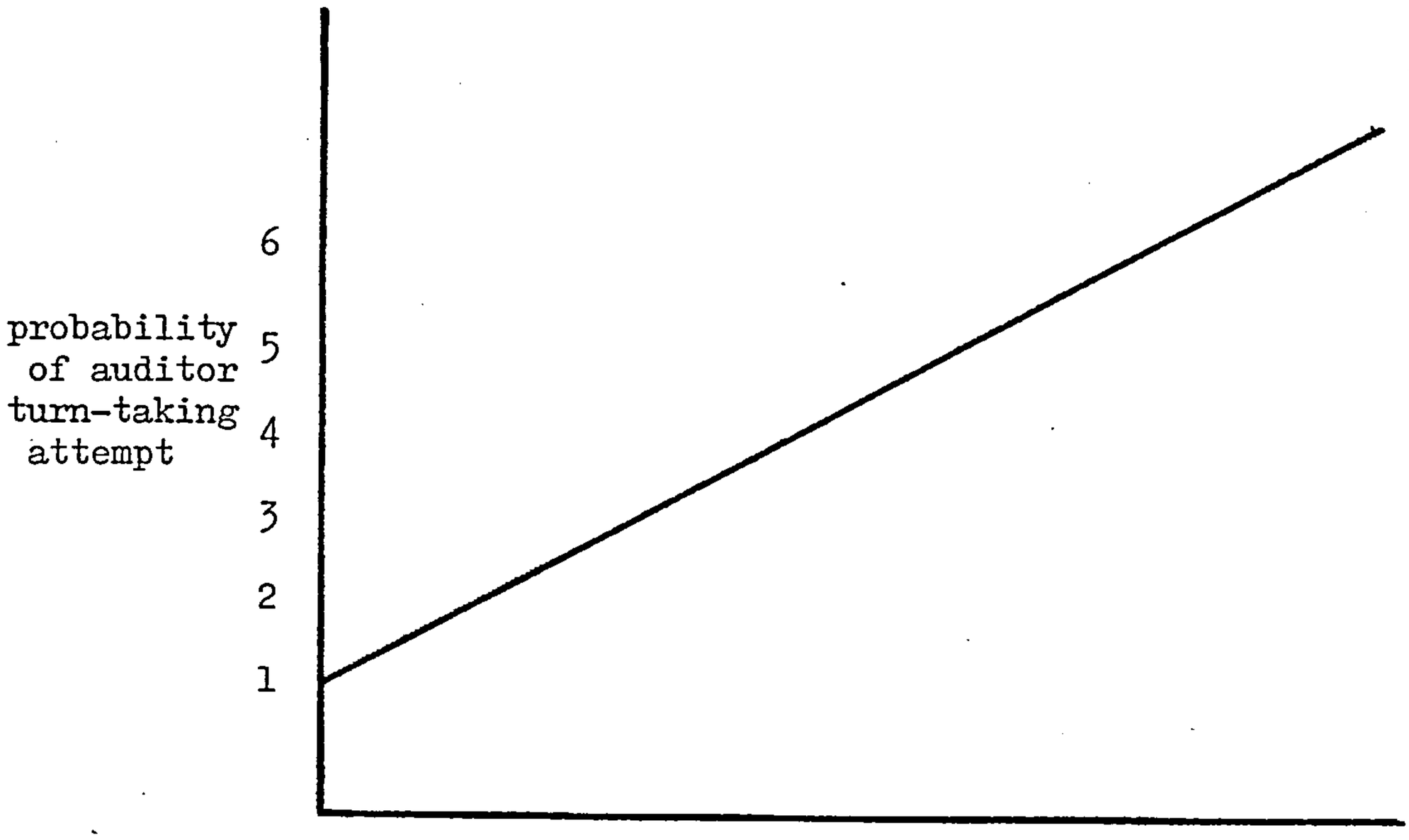
Evidence from Chapter 6 does not support the linear model proposed by Duncan. In particular it would seem that clausal completions are highly associated with turn endings and points of auditor interjections, and that where the remaining cues are displayed they are associated with this linguistic feature. This suggests that cue displays are not independant and additive , and that a linear increment in the yielding qualities of turn endings characterised by increasing numbers of yielding cues is most unlikely (A further critique upon the linearity of the model is offered by Beattie (1981 a) who, as noted in the introduction, has pointed out that close inspection of Duncan's data reveals that only a modest correlation exists between the number of cues displayed and the probability of a turn taking attempt).

The present research suggests that clausal endings, together with associated paralinguistic cues, form a boundary point within natural speech, recognisable as a function of speech production rather than as a consequence of turn allocational mechanisms. In this way the turn-yielding 'cues' may be viewed not as additive, but as adding emphasis to boundary points in a fashion which is not linear, but in some sense incremental (see Figure 9). As may be seen from the diagram this incremental model might be perceived as having linear qualities, particularly where the content of the cues constituting the 'signal' display is not considered.

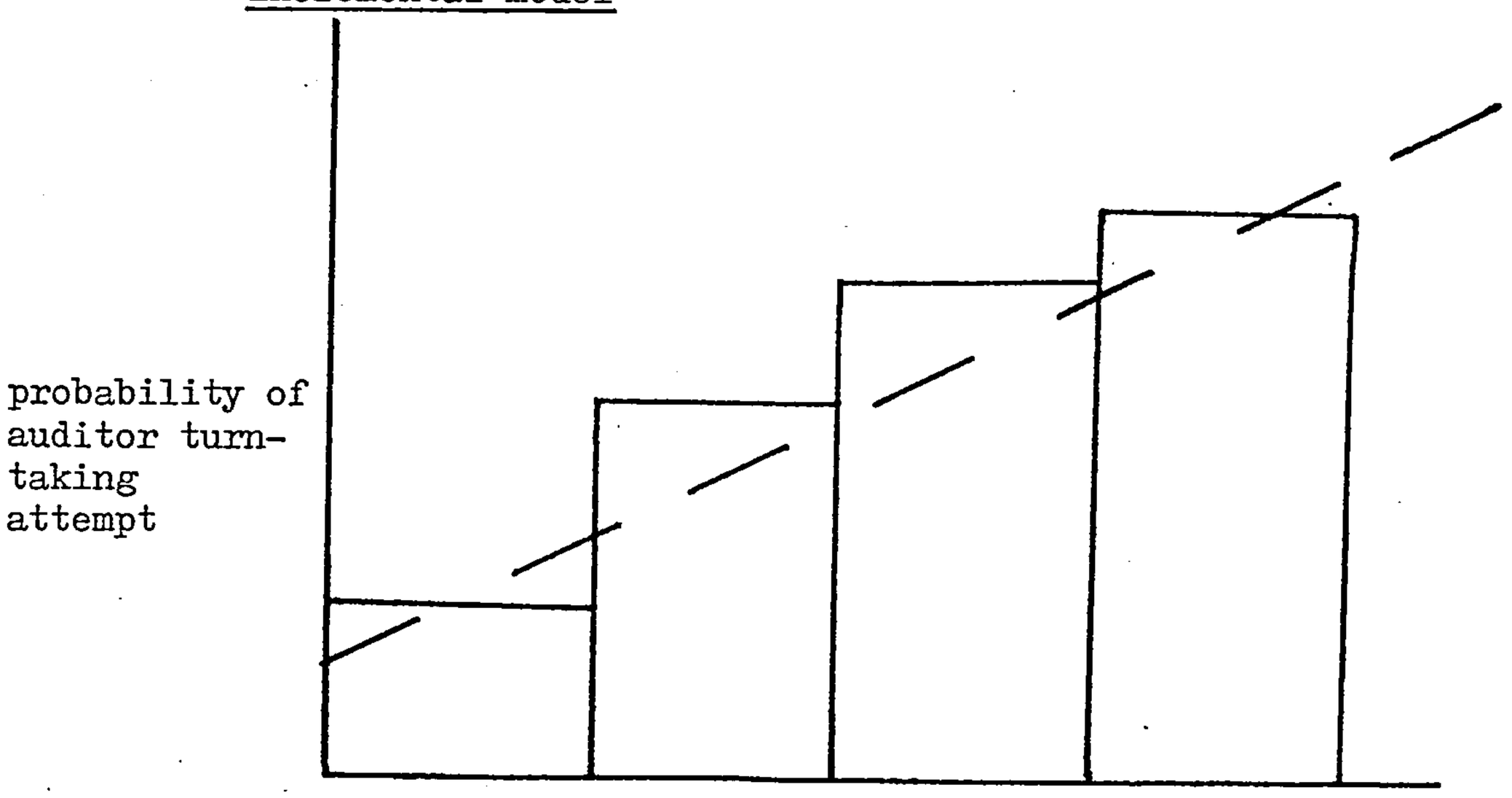
Such an incremental system would become perfectly compatible with that proposed by SSJ, where the notion of unit types conforms (in some cases) to that of clausal completions. The role of additional non-verbal cues in emphasising boundary points would not be addressable within the SSJ system, since the completion of the unit type is a minimal but sufficient aspect of their schema. Whilst this need not be over-problematic where the detection of boundary points within speech is concerned the excision of extra-linguistic features would make it difficult to account for the location of auditor turn-claims at only some - and not a majority - of transition relevant locations.

FIGURE 9 : DIAGRAMATIC COMPARISON OF LINEAR AND INCREMENTAL MODELS OF 'CUEING'

pacé Duncan, (independent cues of equal value)



Incremental model



e.g. gesture termination, drawl, socio-centric sequence, pitch, ideational completion, 'look-up' cue in certain contexts

The identification of boundary points of turn-allocational relevance is crucial to both systems. Within Duncan's work this process is achieved through turn-allocatory cues whose production is considered as specific to the action of speaker switching, and in this sense is viewed as intentional. In contrast SSJ propose that in the absence of specific linguistic turn-allocatory devices - such as questions - the auditor self-selects through the identification of boundary points within speech. Evidence from Chapter 6 strongly suggests that such boundaries are frequently associated with the completion of a syntactic clause. In the light of this evidence the status of accompanying paralinguistic behaviours to these boundaries becomes problematic. Their clustering at clausal boundaries suggests that they could be viewed as behaviour modulated by speech production processes, and in this sense they would be 'natural' accompaniments to the speech flow.

The concept of 'natural' accompaniments is derived from the work of Grice (1957), who considers the notions of 'natural' and 'non-natural' meaning, with the latter meaning resulting from a speaker's intentional use of an act to convey a message, and the former denoting those occasions on which such meaning is merely inferred. Power and Martello (in press) note that clausal completions and their associated terminal intonation contours and non-verbal behaviours can be taken as 'boundary indicators' <u>within</u> speech, forming part of a segmentation that is internal to the production of talk. Thus the cessation of gesture appears to relate to the terminal portions of periods of cognitive planning (Beattie 1978 b), and can therefore be viewed as a factor which is internal to the utterance. Whilst no empirical evidence is offered, observation of gestural patterns in individuals who are monologuing-as exemplified by television presenters - suggests that their non-verbal behaviours continue to cluster at boundary locations when there can be no question of speaker exchange.

Were it to be the case that the cues observed by Duncan are natural accompaniments to speech, then it is not credible to also view them as aspects of an additional and intentionally derived turn taking system. Rather they acquire such status <u>through</u> their recognition by co-participants as natural accompaniments of boundary locations. This shift in perception of cues - from a non-natural to natural derivation - has important implications for the location of control in speaker switching, since it places this with the auditor rather than the speaker.

A further Gricean concept permits some understanding of the rules which auditors might utilise in this process. Through 'conversational implicature' (Grice 1968) meaning can be conveyed indirectly through presumptions of rationality and co-operativeness. Thus where behaviour appears to be 'out of context' participants will assume that some meaning may be derived, and that following these principles this may be achieved indirectly. It is by virtue of conversational implicature that the speaker gesticulation and continuation signals could be seen to operate, since they are, in a sense, de-contextualised from their linguistic substrate in being natural accompaniments at irregular locations. Presumably, therefore, participants observing (for example) gestural activity across clausal boundaries may infer that a speaker intends to continue talking not because in producing such activity the speaker necessarily intends that such implication should be drawn, but because of the contrast between the production of gesture and their location at points usually associated with their cessation.

It seems therefore, that at no point need concepts of direct intentionality be introduced in order to account for the informational value of speaker behaviour in identifying boundary locations. However, that intentionality <u>need</u> not be adduced in order to account for the turn taking process does not imply that it <u>never</u> appears. Conversationalists acquainted with some intuitive knowledge of turn regulatory mechanisms can quite clearly employ them to good effect. Thus holding up ones hand to

a co-participant at an angle of ninety degrees to a fully extended arm would convey a clear interactional intent, whilst not usually being a natural accompaniment of speech, and its use seems to follow as an 'extension' of the speaker gesticulation signal. Such clear signalling, however, might be taken to imply a certain passionate need to hold the floor, and it is proposed that whilst intentional use and manipulation of floor-holding devices (both linguistic and extra-linguistic) is a feature of talk, it is more usual for them to arise as natural accompaniments to speech.

Thus it is proposed that auditors self-select to take a turn at points which, based on their linguistic intuitions, are identified as boundary locations and that it is this process, rather than that of speaker selection, that generates the temporal structure of dialogue. Certain linguistic usages, such as the adjacency pair format may act to produce turn switching, though it may be noted that these are not utilised in the majority of turn transitions (Coulthard 1977), and are more likely to appear in specific settings. Thus they may be used frequently between two strangers becoming acquainted, or in classroom interaction (Sinclair and Coulthard 1976); in the dialogues examined in this research direct elicitation was relatively uncommon.

Much of the research literature is oriented towards the elucidation of processes which would account for smooth switching (e.g. see Kendon 1967, Duncan and Fiske 1977). It is proposed that this enterprise conflates the concept of a boundary location with turn endings, and that a failure to distinguish the two leads to the above emphasis. In this regard it would seem more appropriate to suggest that auditors attempt to place their talk at boundary locations not because they wish to achieve a smooth speaker switch as such, but because they are oriented towards achieving turn transitions with 'minimal interactional trouble'. In this research most auditor turn taking attempts arose at boundary locations whether or not the resulting

switch could be classified as smooth or as an interruption. Further where interruptions arose at boundary locations, they were more likely to be characterised as 'overlaps' (Ferguson 1977), where the first speaker completed his/her utterance. By placing talk at such locations auditors may be more likely to engage in minimal overlapped talk, or (where the boundary location is in fact a terminal juncture) no overlapped talk at all. In contrast it does seem that placing talk across the speech flow is more likely to result in a simple interruption, with a break in the first speakers utterance. Under these conditions such factors as overloudness (Meltzer, Morris and Hayes 1971) may be of importance in determining outcome, whereas at boundary locations the interjection is, in a sense, more appropriate (e.g. see Argyle 1975, Duncan and Fiske 1977).

This would suggest that auditors locate boundaries of at least two types, one an elaboration of the other in being a point of completion, the other of <u>possible</u> completion. Thus factors such as ideational completeness and the use of linguistic devices and non-verbal accompaniments may lead an auditor to distinguish a point of completion. Boundary locations within speech will not always be characterised by such terminal characteristics, and will be more in the nature of junctures at which some degree of transition relevance is available. However, as Ferguson (1977) notes some interruptions can arise because,whilst the first speaker appears to have reached a completion point, an auditors hypothesis that speech is finished is revealed as inaccurate. Beattie (1981 b) provides some examples of this. from political interviews in which Mrs.Thatcher would appear to mis-use natural accompaniments to her talk, thereby misleading her inquisitor, as in:

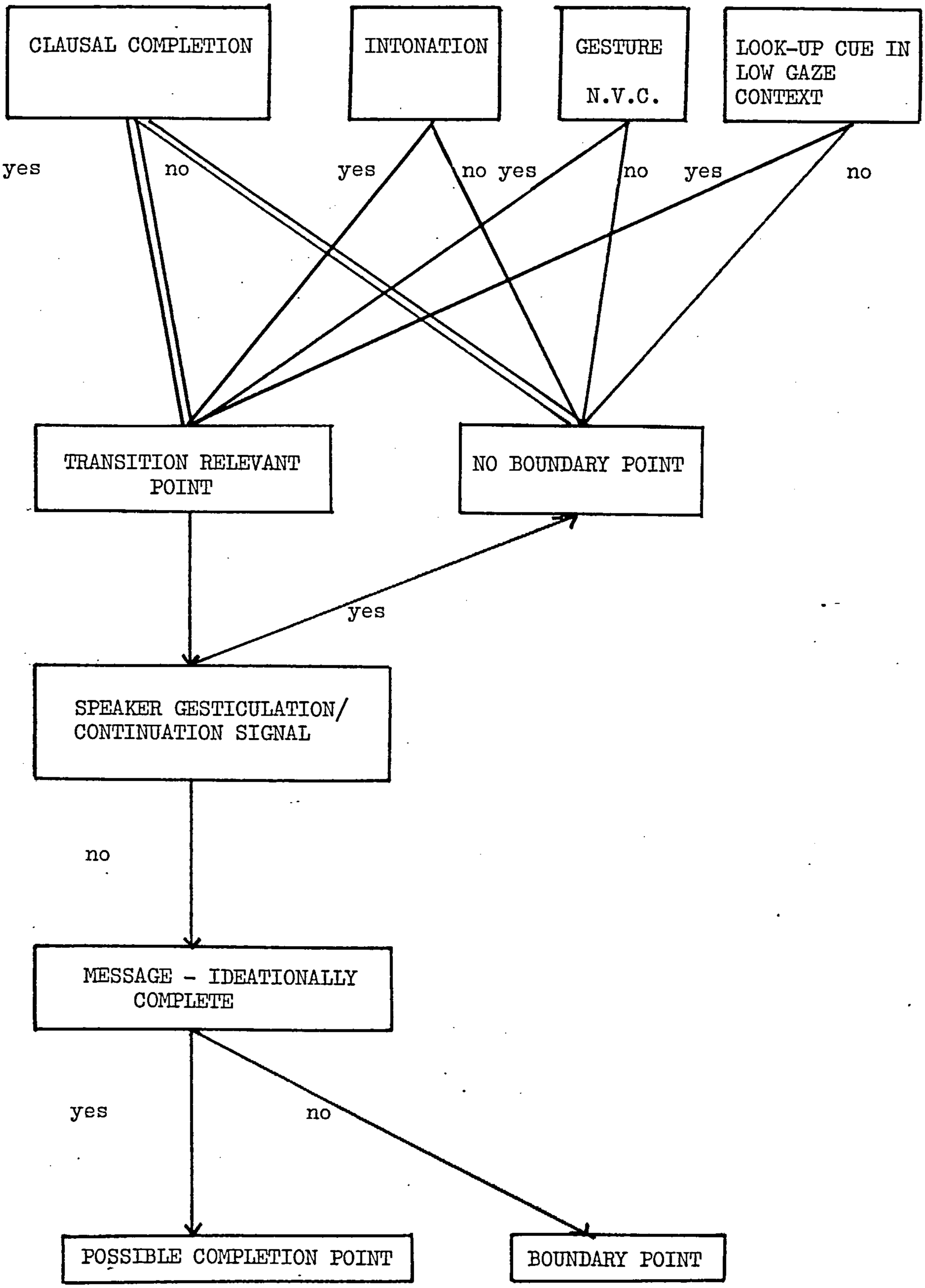
Mrs.Thatcher: The police do a fantastic job
Denis Tuohy: Coming //
Mrs.Thatcher: and we must support them in every way possible
Denis Tuohy: Coming to the end of our time ... (etc)

It may be possible for the reader to supply the intonation pattern appropriate to Mrs.Thatcher's first utterance, with a primary stress on 'fantastic' and a falling intonation across 'job'. This implies that distinctions between actual and possible completion points may be arbitrary, and that an auditor can never do more than to hypothesise that possible completions are present. The above example is important in suggesting that this is the case,and importantly emphasises that the temporal patterns examined by researchers, in which interruptions and smooth switches are present, is always viewed retrospectively, whereas for participants temporal structure is achieved projectively. This inbalance of perspective would tend to under-estimate the degree to which auditors and speakers are engaged in a complex process of hypothesis testing as to likely points for the initiation of talk.

Figure 10 outlines a series of factors which may be utilised by the auditor in inspecting stretches of talk for transition relevance. This diagram attempts to summarise much of the discussion to this point in schematic form. The cues utilised to recognise boundary points tend to be associated with clausal structures, and it is proposed that the presence of a clause boundary together (principally) with a terminal intonation contour will define a transition relevant location. Additional behavioural features will aid this process, and here may be considered the yielding cues identified by Duncan, the look-up cue (under conditions of low gaze levels and with no gaze shifting (Kendon 1967, and see Chapter 5) , ideational completeness and the context of the message being delivered. The quantitative influence of these additional factors is unclear, though the incremental model described by Figure 9 suggests their proposed mode of action.

Once having identified a possible completion or boundary point the likelihood of further speech following the clause boundary may be gauged from non-verbal factors such as those identified in Chapter 6 (the speaker gesticulation signal and head aversion). Other workers have also identified the use of

FIGURE 10 SCHEMATIC DIAGRAM OF PRIMARY LEVEL PROCESSING



a filled pause at such junctures as having a floor-holding function (Ball 1975). It would seem that the rate of production of this characteristic is increased by a higher 'threat' of interruption (Beattie 1977), and whilst this would seem to confirm its interactional role, its effectiveness seems limited to the delay rather than the prevention of turn claims.

Linguistic factors might also be employed whose character provided for continuation, as in:

C's Conflict H51

H: Yes, well, can I just say this though love, (etc)

However, the floor holding properties of such devices are not clear and certainly not invariably successful, as in:

(same dialogue W37)

W: But it's just that to me, I'm going to speak bluntly // now
H: Well you do love

The role of non-verbal signals in differentiating completion-like points where a clear intention to continue talking is present from those where speech may be completed seems more clear, and where these arise they act to negate all boundary-like features. In this sense the direct comparability of Duncan's speaker gesticulation signal is apparent, where on the display of this behaviour all values of the 'display' of turn yielding cues are 'reset to zero' (see Duncan and Fiske op cit p 198).

Figure 11 shows the major differences between the model proposed here and that advanced by Duncan.

Once having reached some form of hypothesis as to the point reached by the speaker the auditor is now presented with a further set of decisions, since even where a boundary point exists a turn claim may fail to be initiated, and equally speaking turns can be initiated across the speech flow. In order to understand this it may be necessary to invoke at least two levels of 'processing', one addressed to the identification of suitable junctures for speech, and a secondary level at which choices are

FIGURE 11: MAJOR DIFFERENCES BETWEEN DUNCAN MODEL AND PRESENT PROPOSALS

DUNCAN ET AL	PRESENT MODEL
1: Turn transitions achieved through speaker production of yielding cues indicating termination of turn.	1: Turn transitions principally arise through listener perception of boundary points within speaker's talk.
2: Turn yielding cues independent and additive in their effect.	2: Turn yielding cues clustered around linguistic units (principally clausal structures) and are incremental in their effect.
3: Turn transitions and turn maintainance controlled principally through non-verbal behaviour.	3: Turn transitions operated principally through linguistic features, non-verbal behaviour acts in turn maintainance.
4: Non-verbal behaviour (both turn-yielding and maintaining) produced intentionally as a cue to these procedures.	4: Non-verbal behaviour usually produced as part of speech production, and acts through rules of social interpretation (conversational implicature)
5: Interruptions result from transgressions of the system.	5: Interruptions accountable to perception of boundary points, and variations in use relate to secondary level decisions.
6: Temporal structure arises under control of speaker.	6: Temporal structure can be controlled by speaker, but principally arises through listener's placement of talk around boundary locations.

made about when to speak. At this level may be considered the factors examined in Chapters 7 and 8, such as the modification of temporal placement through lexical tieing, and the variation of initiation points of turn beginnings as a reflection of strategy. These two features will be considered separately; quite clearly a number of additional choices exist to modify speech style, and a focus on these issues is not intended in any way to indicate their primacy.

A number of decision factors might be adduced to account for the initiation of speech at completion/boundary points or within the flow of speech. Certain of these factors will relate to the role relationships obtaining between participants, and will therefore be external to the particular sequence of interaction, as will be the personality characteristics of the interactants; others will relate precisely to the production of particular sequences of the interaction. Thus, as reviewed earlier, interruptions will be less likely where the encounter is more formal (Giles and Powesland 1975), and where role relations between the participants emphasise the greater power of one over the other (ibid). Within the range of less formalised encounters the sex of the participants (Zimmerman and West 1975) and their personality will be important. Particularly crucial in reducing the number of interruptions is a lack of confidence by one speaker (Natale et al 1979). In contrast more simultaneous speech is initiated by individuals high in need for social approval (ibid) or secure and 'not overly dependent on the approval of others' (Welkowitz 1974).

From Chapter 7 it is evident that factors internal to the interaction will also influence the location of auditor turn claims. In more co-operative - affiliative sequences there is a greater use of smooth switching, as compared with other portions of the dialogue. In contrast controlling sections of talk are characterised by a greater use of interruptions, though (perhaps at first sight counter-intuitively) angry episodes contained no more interruptions than smooth switches. These patternings may be

understood as exemplifying inter-relationships between content and structure, such that the meaning of what is said is reflected in the temporal patterning of talk. This is an important relationship, since such stylistic variation can operate as a powerful interactional resource. Thus whilst in co-operative modes allowing a co-participant to have his/her say provides a structural representation of strategy in which social action mirrors and therefore actualises the content of speech. In contrast maintaining the floor in dominant episodes through a greater use of interruptions exemplifies a desire to retain control of the encounter.

This interpretation receives greater force and precision when the interruption type used under differing strategic conditions is considered. Within controlling episodes there is a greater use of transition relevant initiation points of interruptions, a location more often associated with overlapped interruptions. Since these forms allow for the completion of the first speaker's utterance, control of the floor is established with minimal interactional 'trouble'; such completion allows for a greater probability that the first speaker will not feel agrieved at not being heard out, whilst simultaneously depriving them of the initiative for continuing further talk beyond this completion point without creating further simultaneous talk.

Such a concern with location is not evident in the form of interruption used in angry episodes. Here the high frequency of simple interruptions suggests that interactants are simply concerned with getting their point across, and the cutting-off of talk mirrors the emotional flavour of the encounter.

Clearly therefore the strategic concerns of interactants will influence their decision as to the temporal placement of their talk, and some of this strategic flavour will presumably relate to a particular role that interruptions can play in manipulating the flow of information through an encounter. Thus interruptions may often be used to prevent topic change, or to allow comment on items that threaten to be passed over.

Once having interrupted linguistic features of the utterance seem capable of modifying the interactional impact of the interjection. The factor of cohesion investigated in Chapter 8 seems to provide a link between the structure of interaction and its content, demonstrating a further resource available to participants for the modification of the patternings of speech they are producing. In particular the production of an exchange structure (Sinclair and Coulthard 1976) seems to compensate for the presence of disfluency in speech. This finding is particularly important, since it allows for simultaneous speech to arise without it necessarily being perceived as a negative act. In this way a greater flexibility of temporal style may be seen as permissable through the linguistic repair of deviations from the one party at a time ruling. This concept provides an important bridge between content-free models in which turn-taking cues act to signal turn transitions and the exclusively linguistic concerns of discourse analysts. Thus it is clearly not the case that the form of speaker switch arising at any point within a dialogue can be reduced to considerations of accurate temporal placement on the part of auditors, deriving from a concern to avoid overlapping of speech. It would rather seem that whilst observant of regularities within the current speakers speech - as are exemplified by the primary level of processing referred to in this section - auditors are also influenced by the interactional impact of particular choices of switching patterns. Specifically it is proposed that the choice of particular forms of turn transition (conceived of both in terms of temporal and referential patterning) generates at a micro-analytic level some of the strategic force of an encounter, and there exists, by virtue of this character, a mutually reflexive relationship between these two levels. This contention suggests a synthesis between the structure and content of dialogue, achieved through the joint consideration both of turn-taking style and the textual form of talk. The organisation of turns at talk is therefore both a reflection of and a contributor to the sequencing of interaction.

Implications

It has been argued that there exists a close relationship between the content of talk and the form of turn transition, such that strategic aspects of talk may be represented not only through what is said, but the way in which participants mesh together. Thus angry interchanges seem more likely to contain simple interruptions and co-operative periods of talk more smooth switches; the temporal patterning both reflects and constitutes strategy and the social construction of that strategy (see Chapter 7). Further, there would appear to be relationships between the temporal patterning of utterances and the content itself, such that coherence across interruptions can act to modify the possible reading of these switches as interjections into the others interactional space.

These arguments have implications which may be demonstrated by consideration of the current practice of social skills training, as advanced by Trower, Bryant and Argyle (1978). These authors present a manual of training exercises for individuals considered to be 'socially unskilled' which contains detailed procedures for enhancing and modifying their social behaviour.

Turn-taking skills are discussed under three headings:

(a) content - or the requirement for a continuity of theme across utterances
(b) timing - the " smooth temporal synchronisation of speaking turns and the avoidance of simultaneous speech (interruptions) and non-response (delays)."
(c) turn taking - consideration of the cues that "signal intentions to start or terminate speaking turns"

(all quotations ibid p 221)

The separation of these three areas of 'meshing skills' is theoretically problematic, since as noted above, the present research indicates that there are inter-relationships between the content of talk and the form of turn transition. However, it is clear that the purpose of the work is primarily didactic, and the following comments will be directed towards its sufficiency in describing interactional technique.

The heading of 'content' covers the continuity of topic across utterances, and the problem of topic shifting. Adopting the terminology used in the present research, topical continuity is achieved through the production of 'item matches' between utterances (Vuchinich 1977). Thus the presence of logical relationships such as causality, effect or identity acts to produce cohesion between turns. The following exchange exemplifies the last of these relationships (from Trower et al op cit p 222).

A: My car is giving trouble again, and its only just been serviced. It's infuriating

B: I've had a similar experience. I had mine serviced two weeks ago... (etc)

Topic shifting is less clearly explicated by Trower et al. It is noted that "topics may change gradually" (though the nature of this process is not elaborated), but where more elaborate topic change is required clients are recommended to "wait until there is a lull in the conversation (and) interrupt with an apology and a justification such as 'I'm sorry but there's something I must tell you' ". This advice seems to compound problems of topic change with the issue of floor-claims, and neglects the observations of Sinclair and Coulthard (1975) which suggest that topic change is more regularly achieved through 'exchange structure' formats. Such units, discussed earlier, have their boundaries between utterances, and are constituted by the joint construction of both participants. This contains alterations in the content of talk within the utterance, since these structures (as argued in Chapter 7) contain cohesive links between turns following which topic change may be managed. There seems no theoretical reason for restricting the production of exchange structures to portions of talk containing only smooth switches, and indeed the use of cohesive interruptions - particularly at boundary locations - might be an important skill in entering into and controlling encounters.

The neglect of interruptions as a potentially skilled activity seems to arise from the adoption of a similar model to that of Duncan, and as schematised in Figure 9. This leads to the perception of an optimal patterning of turn-taking in which smooth switching is 'preferred', and with a minimal latency between turns. Whilst it may be the case that the cues described by Duncan are present at turn endings, the work in this thesis (and elsewhere, e.g. Beattie 1981 A) suggest that their appearance as turn yielding signals is more appropriately construed as associated with speech production. Thus as Trower (1980 p 337) notes "speech ... (forms) ... the structure of interaction such that most non-verbal behaviour is organised around it". The important role of non-verbal behaviours in maintaining the turn and in adding emphasis to boundary locations is recognised, but it nonetheless seems more appropriate to view turn-taking as a process constructed through the listeners perception of boundary points within the speakers talk, a process guided primarily by linguistic intuitions.

Such an emphasis locates certain interruptions as skilled processes through their initiation at transition relevant locations, particularly within a model which suggests that the temporal patterning of talk is constructed with reference to these points. Thus rather than aiming to place talk so as to produce smooth switches participants could be construed as aiming to place talk within boundary points, thereby achieving turn transfers with a minimal overlapping of speech. The perception of these as smooth switches or interruptions arises subsequent to turn claims, a factor discussed above and exemplified by the patternings induced by Margaret Thatcher's precise, if misleading, use of prominent boundary location.

Whilst it is clear that not all interruptions display such organisation, the proposed model does focus attention on the need to differentiate amongst classes of interruption (for example in terms of their placement with respect to boundary locations) and on their use as an interactional resource. The social skills

model seems to view them as a unitary and rather undesirable phenomenon; trainees are recommended their use "in extreme cases where the other person is reluctant to stop" (Trower et al 1978 p 225) or in attempts to control others. Such advice presumably stems from the speaker-cued model, and from a concern with primary level processing issues rather than the ways in which turn-taking seems to be implicated in strategy (as discussed above).

Reflecting this the social skills manual considers the issue of turn taking within the framework of turn-yielding and maintaining cues proposed largely by Duncan (1972) and Kendon (1967), suggesting the enhancement of these signals through conscious manipulation. Thus:

> "As you reach the end of a period of talking look at the other, finish your verbal message, then look away. If you have been gesturing, return hands to rest as you stop talking. Lower the pitch of your voice (downward inflection) on your last word or two. Optional: use a concluding phrase like 'So that's it' or 'you know'."
> (Trower et al 1978 p 225)

The cues which students are encouraged to emphasise are primarily those which (it has been argued) are patterned with speech rather than being intended as cues to turn taking per se. The present model suggests that these non-verbal behaviours are associated with the speech flow through their link with speech production, and achieve their social importance through rules of social interpretation. If this is so it would be difficult to carry out the above instructions without some desynchronisation of language and behaviour resulting from attentional overload. The advice within the manual seems to treat linguistic and non-verbal elements as separable, a consequence of this treatment of non-verbal accompaniments to speech as cues within the Duncan model. This suggests a status to these behaviours that separates them from an underlying linguistic substrate, and allows consideration of the component parts of interaction as gesture, gaze or speech content without examination of the ways in which these

processes are linked. The present research would suggest that rather than attempting to teach interactional skills through exemplification of the componential structure of encounters, more focus should be placed upon the process of social construction in which these units are placed. The possibility remains that certain individuals have a perceptual deficit in judging appropriate locations for talk, and some separation of this level from that of strategy makes practical sense since one is a pre-condition for the other.

Social skills could fail either at the level of monitoring or in the process of acting upon the information gained from such scrutiny. This reflects Synder's (1974) distinction of high and low self-monitoring individuals, where high self monitoring persons are considered sensitive to the expression and self presentation of others, utilising such cues as guidelines for monitoring and managing their own behaviour, and adapting to the requirements of situations. Such individuals would expect to be skilled in social situations, but only where their perceptual abilities were matched by an appropriate behavioural repertoire.

This distinction suggests that a more serious appreciation of the cognitive factors involved in social behaviour, and their separation from issues of strategy, would allow for a more powerful analysis of social skills deficits. Perceptual skills do seem to be deficient in certain groups of individuals. Thus Rosenberry, Weiss and Lewinsohn (1968, cited in Libet and Lewhinsohn 1973) asked depressed individuals to listen to tape recorded speeches, pressing a button whenever they would say or do something to express rapport with the speaker, It appeared that these subjects tended to show deficits in the timing of their responses, a feature which could be interpreted as reflecting problems of co-ordination and perception.

In addition to the possibility of failing at this first level of interactional analysis there is the further requirement to understand the application of strategic considerations to turn transitions.

This issue is considered by Trower et al, though rather briefly. Sets of behaviour considered appropriate to particular forms

of self-presentation are given. Thus in 'rewarding others' trainees would be recommended to "avoid interruptions and non-response", whereas in order to maintain control they are advised to "use interruptions and non-response". (ibid p 255-256). Such instructions are potentially misleading. The present research suggests that persistent avoidance of interruptions might be read as a rather formal performance, even though it could also be construed as co-operative. Similarly only certain classes of interruption seem to be associated with control. The use, for example, of simple interruptions might lead to the perception of an angry exchange rather than a controlling performance. Much more specific information would be required in order to define competent strategic interactinn patterns. It is likely that intuitive appreciations of these patternings will be inadequate, and that a more detailed micro-analytic investigation will be necessary for their description. The strategic variations in patterning detected in the present study would constitute the beginnings of such work.

An understanding of discourse rules as they apply to the choice of interactional patternings would seem indicated for more effective training, thereby permitting the transmission of strategic information and an appreciation of the subtleties of temporal placement.

Methodological issues

The analysis of social behaviour into component parts may be misleading as to the ways in which those components are perceived within interaction. Thus whilst it might be possible to classify all instances of simultaneous turns as interruptions on the basis of their technical status, it is not clear that all simultaneous turns are perceived by interactants in a similar fashion. The modification of temporal disruptions through the coherence of subsequent utterances reflects the action of the process of social construction. Through this process analytic categorisations of behaviour may diverge from those of social actors, thereby failing to capture the potential range of interpretation available to participants.

The distinctions made by participants are of interest for the light they would cast on the form of discourse rules which operate across encounters. Differences between these appreciations and those of analysts become crucial where prior assumptions would tend to blur the operation of social construction processes, such that methodological categorisation disguised the way in which these units of investigation were utilised by participants. This seems particularly pertinent in the consideration of turn transitions, where complex inter-relationships between the content and form of switching act not only to modify the interactional impact, but also contribute to the process of social construction in their own right. It may be noted that this problem is not restricted solely to the classification of speaker switches. Thus in the anlysis of gaze patterns it seems likely that the accuracy of measurements of eye-contact may not reflect the ways in which variations in the direction of gaze are understood by participants. Thus 'eye-contact' has often been adopted as a measure of gaze behaviour (Argyle and Cook 1976). However, it would seem that participants tend to assume that such ' contact is established even when the gaze of their partner is to other body parts (Stephenson and Rutter 1970), and full facial gaze is unnecessary to receive information from the other (Gibson and Pick 1963). An appreciation of the objective pattern of looking may therefore be misleading as to the way in which interactants are both using and interpreting this behaviour.

A rather separate issue concerns the degree to which situational constraints will influence rules of discourse. Such issues can only be determined empirically, presumably guided by prior investigation of salient situational differences. Thus Forgas (1976) elicited a listing of social events from subjects, and subsequently asked them to assess the similarity of these events to one another. Through multi-dimensional scaling techniques two salient attributes were derived. The degree of involvement or intimacy and the extent of subjective self-confidence emerged as primary factors; a further cluster analysis suggested that the relationship to the interactional partner was also relevant in assessing situations. Through such

techniques the rules which guide the differentiation of encounters from one another might be better understood.

The influence of situational features on the patterning of discourse is suggested by the high frequency of interruptions in the present study as contrasted with investigations utilising stranger dyads. The pre-existing level of intimacy between the couples seems likely to have contributed to this effect; Morton (1978) in a study comparing the behaviour of stranger and marital pairs found a higher frequency of simultaneous speech and a more 'rapid turnover of talk' amongst the latter group. Other interactional features seem influenced by prior acquaintance; Kent (1975) found that conversations between friends contained a higher degree of elliptical content between utterances than was the case in the dialogue of strangers. Both of these studies suggest that between intimates there is a capacity for the manipulation of social constraints such that they are able to ellide explicit procedures for social action. Thus their talk would be characterised by more resort to shared knowledge, with a subsequent reduction in explicit referential linkings, and also lessadherence to 'one party at a time' rulings.

The problem raised by such differences between strangers and couples for analysts rests in the methodologically normative practice of using stranger pairs for most research. The latter form of study may suggest a more componential structure to behaviour than actually occurs in less ritualised encounters. Thus the prominence of an explicit structure between strangers - which would seem necessary in the absence of any common experience or mutually 'agreed' set of interactional procedures - may lead to misleading extrapolations to more intimate meetings.

Clearly a failure to appreciate the appropriate degree of formalised structure appropriate to an encounter could result in a less efficient or flawed interaction. Bernstein (1973), whose original concerns were for the roots of educational failure amongst working-class children suggested that they tended to use a restricted code in their communications. This code is characterised

by an assumption of shared knowledge between interacants, and an inappropriate use of exophoric reference. Quite clearly a part of social competence would consist of an appraisal of the degree to which common understandings were present. Differences between the talk of strangers and intimates may reflect an awareness of the problems which could arise were there to be differences in the code utilised by participants; ritualisation of the encounter would preclude this difficulty. It may be that such codes are present both in the content and temporal structure of talk. Thus Robbins et al (1978) found differences in the non-verbal accompaniments to turn endings between American working and middle class speakers. Whilst all the dialogues in this study were between participants of the same socio-economic background, certain patterns of behaviour would be ambiguous for mixed groups and be confusing in directing attention to the ends of utterances. The problem of negotiating class differences in communication style has relevance to the development of a style of intimacy - a style of which we have little knowledge. We may be in the position of having acquired a technology for understanding the beginnings of the acquaintance process, but the extent to which this permits extension into deeper levels of friendship is questionable.

It would clearly be desirable to sample from a variety of situations and a range of levels of intimacy, studying construction processes from the most ritualised to the least. Through such techniques it should be possible to gain more insight into the construction of encounters, though it is unlikely that any one study would be able to assess more than a limited aspect of this process. The present study is no exception; and it seems appropriate to consider its limitations, and to suggest ways in which its findings could be extended.

Methodological critique and future research

1: Problems of sampling

Consideration of the type and number of interactions commonly studied by analysts of conversation suggests that there is a need to discuss the extent to which results from this area of work may be generalised. The encounters examined are often drawn from highly specialised situations. For example psychotherapy sessions have received considerable attention (e.g. Duncan 1972, Labov and Fanshell 1977); Beattie (e.g. Beattie 1981 c) has studied university tutorial groups. Most frequently interactions between previously unacquainted students are examined (e.g. Kendon 1967). Clearly there can be no claim that these conversations, with their disparate aims and purposes are in any sense representative of a hypothetical class of 'interactions as a whole'.

Ultimately statements concerning the generality of findings rest on the assumption that interactants are representative of the speech community from which they are drawn, and it is by virtue of this, rather than the type of interaction, that generalisation is possible. The features described by conversational analysts may therefore be presumed to arise through social acculturation, and not through individual processes of negotiation. Thus features abstracted beyond the specific content of talk could be expected to have application to other members of the speech community from which the sample is drawn. The extent to which this premise is true can only be assessed empirically, perhaps through examination of a range of subjects and situations, and the subsequent application of statistical procedures.

Within micro-analytic work, however, large numbers of interactions cannot be studied; the time required for analysis is such that severe constraints are applied to the length of research materials. Thus Duncan (1972) studied only two dialogues of nineteen minutes duration. The resources of a large research team has permitted extention of study to only six more conversations (Duncan and Fiske 1977).

The size of the corpus studied in the present research is therefore not unusual in this area of study. Criticism may still be levelled as a consequence of issues of statistical validity and statistical power raised by such small samples. Multiple sampling of behaviour from a restricted range of subjects may give rise to a concern regarding statistical conclusional validity (Cook and Campbell 1978) whereby false conclusions about co-variation are made from unstable sample data. Multiple sampling from such limited populations is not in itself problematic. Precedents and statistical techniques for such a procedure have been established within single case methodology (e.g. see Hersen and Barlow 1976) and it would be inappropriate to view such sampling as invalid in itself. More serious would be the possibility that idiosyncratic features of one or more couple influenced the overall group result. Throughout the studies some care has been taken to examine the patternings of individual couples in order to preclude such artefactual sources of variance. Nonetheless analysis of events which are rather rare in interaction, and which have a low frequency in any analysis,also raises the issue of statistical power. This concern may be a consequence of the constraints imposed through micro-analysis of interaction; the limitations in sample size resulting from intensive investigations are necessarily traded off against the greater statistical power available in experimental designs with larger subject numbers but more superficial or generalised measures.

There may therefore be an inevitable balancing of priorities, and this seems accepted within discourse analysis. There are, to the author's knowledge,no micro-analytic studies in which the conversations of more than a very few individuals have been completely examined. Intensive analysis of individual cases can be justified on the grounds that through this information of a kind which cannot be obtained through group based procedures may be acquired (e.g. see Leitenberg 1973)

Further concern that such patternings as emerged may not be applicable to a wider population has been noted above, and concerns the issue of external validity (Cook and Campbell op cit). Both of these validity issues might have been assuaged - to some degree - by increasing the number of interactions studied. Examining only one conversation from each of six couples would not have increased the size of the corpus but would have doubled the subject numbers. The original decision to analyse two conversations per couple was made in order to explore differences in patternings in 'neutral' and conflictual dialogues. This feature has, however, emerged more clearly from content analyses within conversations rather than through variations between them, a finding which was not anticipated at the design stage.

The adoption of particular design-strategies in research of this kind inevitably constrains the form of results and the problems of validity which follow. In attempting to maximise the range and depth of processes studied some loss in subject members seems inevitable. In addition to a restriction on subject numbers there is also a restriction on the range of situations which may be sampled. This advises considerable caution in any claim for the generalisability of the current model across differing situations - such as might be found particularly in stranger dyads (see p.179 of this thesis).

2) Speech content and turn-taking style

In Chapter 7 the relationship of stylistic variations and speech content was examined using the Leary interpersonal circle as a content-analytic scheme. It is noteable, however, that all quadrants of the interpersonal circle were not equally represented across the dialogues. This skewed distribution reduced the power of subsequent analysis, since the ability of the scheme to discriminate amongst switch types predominating in each strategic 'mode' was thereby limited.

A number of modifications to the experimental procedure might have improved on this picture. Reversion both to the original octal system of coding (Terrill and Terrill 1966) and to an utterance-by-utterance analysis, would have increased cell entries. However, the revisions to both of these features of the

analysis was made in order to increase the reliability and efficiency of coding.

Perhaps a more effective solution to these problems would be to maximise the range of strategic features through manipulation of the type of encounters. The two conversations in this study were intended to reflect different types of interaction; whilst this aim was achieved to some degree (there being more angry exchanges in the Conflict discussion - see Chapter 4) greater manipulation of content might be required to increase the variation in strategic patterns within the interactions. Much of the content of the encounters could be considered along the dimension of dominance-submission. It may be, therefore, that increasing the affective intensity of the meetings would result in a greater use of talk clustering across the affiliation - hostility dimension (see Chapter 4). Issues which might have generated such an effect in the present study would have been a focus on specific relationship issues of high salience and intensity. Couples with discordant and unhappy marriages might also display this increased affective range. This would enable a more complete examination of relationships between speech content and temporal patternings.

Further work is also required to distinguish the role of heightened emotional arousal and speech style. Thus it may be the case that both anger and anxiety (as reflected in the DE/FG and HI/JK quadrants) might lead to a greater use of 'misplaced' interruptions. For reasons noted above this issue could not be explored; further research is required to delineate specific patterns of variation.

3) Linear and incremental models of turn taking and their generality

Duncan (1972) has proposed that the increasing probability of a turn taking attempt bears a linear relationship to the number of turn taking cues displayed. In contrast studies in Chapter 6 suggested that an incremental model based on linguistic features

of turn endings might be more appropriate. In the present work there is no direct test of this proposition; such evidence could only be collected through an analysis of the patternings of all cues present at all points of the dialogue. A subsequent analysis of the rate and type of floor-switching could then consider the production and patterning of individual cues in relation to clausal structure, and provide a more rigorous examination of the model.

A further issue concerns the possibility that despite the proposed relationship between speech production and turn taking 'cues' advanced here, particular combinations might nonetheless be more or less salient to the production of turn transitions. Duncan (e.g. Duncan and Fiske 1977) has not presented any data on this feature of the system, despite assertions that no such combinations were present (Duncan 1975); such patternings could only be delineated by the complete analysis of 'cues' across dialogue suggested above. This form of analysis might also be extended to consider whether there are variations in the patterning of cues between differing types of encounter. Thus Robbins et al (1978) found distinct combinations of turn-taking cues in the speaker-switches of American working- and middle-class subjects. Similar differences might also be examined between strangers and intimates, in considering the stability of the appearance of cues. This could be achieved by using a subject pool of intimate dyads, and re-combining them so as to form stranger pairs. It would therefore be possible to detect variation in the frequency of cue display and their patternings across these pairings. Such a study would raise the issue of situational consistency in the features examined in this and other studies, a concern addressed below.

4) <u>Parameters of conversational style</u>

An emergent research concern is the delineation of parameters of conversation which would relate variability in the style of turn-taking to features of strategy, situation and culture. The influence of these factors is well established within sociolinguistics (e.g. Goffman 1975). Changes in speech content, accent and mode of presentation with variations in setting are well documented (ibid).

There are indications that such cultural factors will also be relevant to turn taking style. La France (1974) suggests that black American speakers may use different sets of non-verbal turn-taking cues to white Americans. Robbins et al found different patterns of turn-taking style between American middle- and working-class subjects. The study of non-verbal behaviours - particularly gesture - has long recognised the existence of cultural differences in gesture and proxemic behaviour (e.g. Hall 1966, Argyle 1969), yet there remains a tendency to treat turn taking behaviour as a 'universal' phenomenon. The influence of class and culture might also be supplemented by features of personality and strategy.

Ferguson (1977) has suggested that dominant individuals may use an increased rate of overlapped interruptions. Beattie (1981 c) found a high frequency of this interruption class in the speech of university tutors, but not in students participating in tutorial groups. The present research indicates that rates of interruption may be increased in dialogues between intimates, and that strategy will influence the class of switch type. (see Chapters 4 and 7). The possibility that interactional strategy and markers of interactional status - such as intimacy, role, class and formality - might be reflected in the style of turn transition requires exploration, since these features would be an important resource in the construction of conversation.

Related to this concern is the question of how particular features of talk are understood by participants. Speakers' intuitions may be profitably contrasted with analytic descriptions of talk. Clearly, however, subjects - and analysts - require a clear focus as to the features they wish to examine, since not all questions will make sense to judges. Two procedures may be appropriate. In the first, utilised in the present work (see Chapter 8) subjects were asked to view interaction sequences which were, in some sense problematic. Interruptions - through their transgression of the 'one party at a time ruling' (Sacks et al 1974) - open-up the process of turn taking. Questioning the 'appropriatness' of interruptions seems intuitively reasonable, whereas smooth switches

could not be considered in this way. This approach has some similarities to work in the ethnomethodological tradition where, through transgressions of what are taken to be normative expectations, information as to the operation of these norms is derived (e.g. Garfinkel 1967). A second procedure is exemplified by Rosenfeld and Hanks (cited in Rosenfeld 1977), where subjects were asked to listen to combinations of back-channel signals and to indicate their meaning from a check-list of descriptors. This constraint on the range of potential responses allows somewhat more ambiguous features of interaction to be considered.

Studies using these approaches could be used to test directly the social meaning of interruption classes, and to ascertain how variation in the style of interruptions might be perceived. This could best be achieved by constructing dialogues in which speech content was held constant, but the location of interruption points was varied. Employing these dialogues together with a check-list of descriptors for the episodes would permit elaboration of relationships between style and social interpretation.

Situational variation in the perception of interactional strategy could be explored through the use of a corpus of interaction sequences constructed to include a range of turn-taking styles, and played to judges given different information as to the setting from which they were taken and the relationships between participants. The degree to which particular classes of switch would be perceived as differentially appropriate, for example, between intimates or stranger dyads, or with variations in role relationships, would give insight into the markers which help situate talk.

5) Analysis of style in social skills

The measures derived from the present study might have application to individuals lacking in social skill. Analysis of social skills failure suggests that gross differences of tempo are particularly apparent between the socially skilled and unskilled (e.g. Bryant et al 1976, Trower 1981). It is less clear how the speech that is produced results in the further impression of a lack of social skill, since qualitative examination of their performance has not been attempted.

Further to this the model advanced in this thesis separates 'primary level processing' by which boundary locations are detected, from the strategic manipulation of such points. Subjects previously rated as socially skilled or unskilled could be asked to listen to recordings of dialogue, and requested to indicate points at which they would intervene to fulfill differing interactional strategies. This would give insight not only into perceptual accuracy, but might also indicate the range of strategies available to the two groups to be assessed. This technique might have direct application in the clinical assessment, and, through adaptation as a didactic procedure, the training of social skills.

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APPENDIX I

University of Sheffield

DEPARTMENT OF PSYCHOLOGY
SHEFFIELD S10 2TN Telephone 0742 78555

Professor Kevin Connolly
Professor John Frisby

MARITAL RELATIONS STUDY

As part of a study of marital relations being carried out at the Department of Psychology in the University of Sheffield, we are asking couples aged between 20 and 45 whether they would be interested in helping us by coming along to the Department to talk to us about their marriages. Your names have been chosen at random from the electoral register; we hope that you do not mind us contacting you in this way. Sending you this letter in no way obliges you to participate in this study. However, this type of research depends on us seeing as many different couples as possible, and for this reason I would ask for your co-operation.

In this research we are interested in knowing more about the ways in which married couples feel both about their own marriages and marriage in general. Difficulties can, and often do, arise in marriage and so we are also interested in knowing more about the ways in which couples deal with the conflicts that come up. We hope that in the long run this research will help us to devise more effective methods for counselling married couples who come to doctors for help.

If you agree to participate we will arrange for you to come along to the Department for one session lasting approximately two hours, and this meeting can be held at any time that is convenient to you both, including evenings and weekends; I would add that any travelling expenses that you incur will be refunded. During this time you will be encouraged to talk about your marriage in a frank way; however I would assure you that any information that you disclose will be treated in strict confidence.

The procedure which we will follow after you have arrived at the

Department would be along the following lines:-

1) You will be asked to fill-in some questionnaires which ask you about your feelings regarding your marriage, after which we will talk together about your relationship.

2) I will then play you a tape-recording of an enacted therapy session in which a couple talk about their life together with doctors at the Hallamshire Hospital. You will be asked to discuss together the ways in which what they say about their marriage is similar to issues arising either in your own marriage or in those of your friends or acquaintances. Both this discussion and the talk described below will be recorded; access to these tapes will be restricted to myself and my colleagues at the Department.

3) A second discussion will be concerned with the sort of issues that have come up in your own relationship, and the ways in which you deal with them. I will be asking you to consider some conflicts that have arisen between you both, and to work through one of them together. After this we will talk about the ways in which you dealt with this conflict. I would like to take some time after this to discuss with you your views on the way the session went, and during this time you may like to comment on the procedures which we will have followed.

We will be very grateful if you do decide to help us in this work, which should be an interesting experience for everyone involved. I shall be calling on you in the next few days to answer any questions that you might have, and to see whether you are interested in taking part in the study. Should you feel that you would like to contact me on some matter before this time, please feel free to ring me at the number given above.

Yours sincerely

Tony Roth.

Tony Roth

Postgraduate Research Worker

APPENDIX II INSTRUCTIONS TO COUPLES LISTENING TO BILL AND LINDA RECORDING

The tape you are about to listen to has been made by therapists at the Marriage and Sexual Guidance Clinic at the H. Hospital. This tape was originally made for use in training marital therapists, and consists of an interview with a young couple, 'Bill and Linda'.

Bill and Linda are typical of many couples attending the hospital; their parts are played here by therapists at the clinic. (It is not possible to let you hear an actual interview for reasons of confientiality). In this interview they discuss with two doctors the sort of problems that brought them to the clinic. At first they complained only that they were not getting on so well. Because you will only be hearing a short extract from the interview, it might be helpful to provide you with some background information on this couple.

Bill and Linda 'had to get married' when Linda became pregnant, although Bill says he would have married her anyway. Linda miscarried at 14 weeks and since then has been on the pill. She complains that their sex life is unsatisfying, whilst Bill feels it is 'alright'. At first they lived with Linda's parents, though this arrangement resulted in a number of arguments between them. After a short time they moved to a house of their own. Linda feels she spends much of her time keeping the house clean and that Bill does little to help around the home. On most evenings Bill goes to the pub, and Linda often baby-sits for friends across the road on these occasions. They do not see eye-to-eye regarding their choice of friends, and this has caused a number of arguments.

When the tape finishes I should like you to discuss, in any way that you like, ways in which this couples' problems could have arisen, and perhaps ways in which they could be overcome. I should also like you to consider ways in which the type of issues that this couple bring up are similar to those that you yourselves might have come across, either in your own marriage or in those of your friends or acquaintances.

APPENDIX III INSTRUCTIONS TO SUBJECTS IN CHAPTER 8

STUDY A

When two people are having a conversation, usually only one person speaks at a time. However, as you will know from your own experience, there are times when one person doesn't wait for the other person to finish speaking, and we usually refer to these occasions as interruptions.

In this study we are interested in exploring how people feel about these interruptions, because you can probably think for yourself of times when an interruption has been acceptable, and times when you might have felt a little annoyed at being 'cut-off' in this way. So one thing to bear in mind is that just because an interruption has occured, it isn't necessarily going to be a bad thing.

I will be asking you to listen to some tape-recordings of husbands and wives talking together. All of the extracts you will be listening to end with one partner interrupting the other. I should like you to listen to the extract and then answer each of the questions on the sheets supplied.

Questions (see page 201)

1. Sometimes in conversation when people are 'jumping-in' at the first opportunity, it is hard to tell who is interrupting who. In this question we are interested in asking you who you think is actually making the interruption. Alternatively you might like to comment on whether you would in fact see some of the extracts as interruptions. Obviously this will not be a very difficult question to answer for most of the extracts.

2. In answering question 2 I should like you to put yourself in the position of the speaker, and ask yourself the question:

> To what extent do you feel that the speaker would be right in feeling that his/her partner should have waited before speaking

You can answer this question by making your decision on the scale provided; notice that you are not being asked to make a yes/no judgement. After making this judgement you should say why you made that particular judgement.

3. In answering question 3 I should like you to put yourself in the role of an impartial observer, and to make a judgement of how appropriate it was for the partner to speak at the point he/she did. Rather than define what is meant by 'appropriate' I should like you to rely on your own intuitions. You should indicate why you have chosen the number on the scale that you have, and may use this space to indicate your ideas about appropriateness.

4. When you hear people talking you tend to form an impression of them from the way they speak. Here we are interested in the impression you would get of the person who is interrupting the speaker. After listening to the extract, and considering each extract as a separate incident, you should ask yourself the question: "what would I think of someone who interrupted me in this way?".

You can ask to listen to any extract more than once. A transcript of the extracts will be given to you; this will give some background to the extracts you will hear.

Finally I should like to mention that in this study we are interested only in your reactions to the extracts. There are no particular answers that we are looking for; this is not a test of your abilities.

SCORING SHEET FOR CHAPTER 8, STUDY A

1. Which person is doing the interrupting?

The husband is interrupting the wife _____

The wife is interrupting the husband _____

Any comments? .....

2. To what extent do you feel that the speaker would be right in feeling that his/her partner should have waited before speaking?

PARTNER SHOULD HAVE WAITED					QUITE APPROPRIATE FOR PARTNER TO SPEAK
1	2	3	4	5	

(Circle appropriate number)

Why did you circle the number you did? .....

3. To what extent do you feel that it was appropriate for the partner to interrupt the speaker at the point he/she did?

PARTNER SHOULD HAVE WAITED					QUITE APPROPRIATE FOR PARTNER TO SPEAK
1	2	3	4	5	

(Circle appropriate number)

Why did you circle the number you did? .....

4. Considering the extract you have just heard as a separate incident, what would you think of someone who interrupted you in this way?

.....

APPENDIX 4 ANALYSIS OF VARIANCE TABLES FOR TABLE 38

2 factor ANOVA - taking role of impartial observer

Source of variation	S.S.	df	MS	F	p
Subjects	18.17	14	1.29		
Cohesion	5.28	1	5.28	18.51	0.0007
Cohesion x subjects	3.99	14	0.29		
Temporality	0.29	1	0.29	1.05	0.32
Temporality x subjects	3.92	14	0.28		
Temporality x cohesion	1.35	1	1.35	10.47	0.006
Temporality x cohesion x subjects	1.81	14	0.13		

APPENDIX 4 ANALYSIS OF VARIANCE TABLES FOR TABLE 38

3 factor ANOVA - contrasting role of speaker vs impartial observer

Source of variation	S.S.	df	MS	F	p
Role	7.11	1	7.11	6.74	0.01
Error term	29.51	28	1.05		
Temporality	0.13	1	0.13	0.62	
Role x temporality	0.09	1	0.09	0.44	
Error	6.07	28	0.22		
Cohesion	10.44	1	10.44	36.727	0.001
Role x cohesion	0.005	1	0.005	0.019	
Error	7.96	28	0.28		
Temporality x cohesion	1.93	1	1.93	15.15	0.0006
Role x temporality x cohesion	0.03	1	0.03	0.212	
Error	3.56	28	0.12		