CONVERSATIONAL

THE STRUCTURE OF EXPERT-NOVICE

CONSULTATIVE INTERACTIONS

TERESA L HOOD

Thesis submitted for the degree of Doctor of Philosophy, University College, University of London.
January 1992
ABSTRACT

Do expert-novice consultations exhibit a consistent pattern to structure across situations? Inadequate analyses and esoteric, small samples hindering recent descriptions of consultation were remedied by a corpus of nearly 100 consultations covering a wide range of topics and subjected to a variety of analyses. First, three widely-different analyses were applied to the same sample and all revealed a consistent pattern across interactions. A Turn-time analysis of turn durations and frequency by role statistically verified a pattern. A Functional Act analysis revealed a pattern using four basic Act Types, Informative, Request, Evaluation and Justification. A detailed Conversational Analysis found consistencies in exchanges of Opening, Pre-closing, Closing, and Question-Answer with an optional Insertion Sequence; unexpectedly, the Answer multi-utterance did not circumvent intervening talk.

How is the consultative structure exhibited? Two novel methods supported the existence of four structural states in 3-party chaired queries. A model based on constantly occurring turn-types of role and relative duration showed a good fit for states of Opening, Query, Solution and Closing with optional extensions to talk in each. Cluster analyses of non-topic words verified these states with words distinctively occurring in each. Unchaired dyadic consultations corroborated these results although fit was found for only three of the model states: Opening, Query, and Solution; more frequent and longer turn exchanges in the Solution and Closing sections indicated increased on-line diagnosis and negotiation of the solution formulation.

What might this particular consultative structure accomplish? The material exhibited "formal" talk features of turn form, speaker, and topic restrictions and role references, used for both task accomplishment and protection from failure. More successful Expert System interfaces have emulated layman access to the solution process in human-human consultations, suggesting some possible advantage to this structure.
ACKNOWLEDGEMENTS

I would like to thank my supervisor, Dr. Brian Butterworth, for his valuable advice and continuing enthusiasm throughout these years.

My appreciation to all those in the Psychology Department who generously gave their time and counsel, especially Dr. David Green, Dr. Chris McManus, and Dr. Henry Plotkin.

I would like to acknowledge the UCL Computer Centre Advisory Service for their kind help over some months of data collection.

For a cherished friendship I will not forget and could not have done without, I am deeply grateful to Dr. Mehdi Alavi.

For strong and sympathetic shoulders to cry on, thanks to Neda and Simon Bunegar, Bernice Pick, Shahriar Shahidi and all the residents of Room 515.

Above all, my eternal gratitude to my family, especially my parents, grandmother and aunt, for their love, optimism and generous support always.
TABLE OF CONTENTS

CHAPTER 1 LITERATURE REVIEW

1.1. INTRODUCTION
1.2. DESCRIPTIONS OF CONSULTATIONS
   1.2.1. ALTY AND COOMBS (1981) COMPUTER ADVISORY
      1.2.1.1. Methodology
      1.2.1.2. Procedure
      1.2.1.3. Data Collection
      1.2.1.4. Analysis
      1.2.1.5. Results
      1.2.1.6. Evidence from the material
      1.2.1.7. Conclusions
   1.2.2. ZIMMERMAN (1984) POLICE COMPLAINTS
   1.2.3. BYRNE AND LONG (1976) MEDICAL CONSULTATIONS
   1.2.4. CROW (1986) TV CALL-IN SHOW
   1.2.5. CONCLUSIONS

1.3. LOCAL CONVERSATIONAL STRUCTURE
   1.3.1. TEMPORAL PATTERNS OF SOUND AND SILENCE
   1.3.2. TURN EXCHANGE SIGNALS
   1.3.3. SPEAKER INTENTION
      1.3.3.1. Definition of acts
      1.3.3.2. Turn sequences
   1.3.4. CONVERSATIONAL ANALYSIS
      1.3.4.1. Adjacency pairs
      1.3.4.2. Turn-taking rules

1.4. GLOBAL INFLUENCES ON STRUCTURE
   1.4.1. PRINCIPLES OF RATIONALITY AND FACE
   1.4.2. FORMAL TALK
      1.4.2.1. Topic
      1.4.2.2. Role

1.5. EXPERT SYSTEMS
1.6. SUMMARY
1.7. OBJECTIVES

CHAPTER 2 COMPARISON OF STRUCTURAL ANALYSES

2.1. INTRODUCTION
2.2. GENERAL METHOD
   2.2.1. DESIGN
   2.2.2. MATERIAL
   2.2.3. PROCEDURE

2.3. TURN-TIME ANALYSIS
   2.3.1. METHOD
   2.3.2. PROCEDURE
   2.3.3. RESULTS
   2.3.4. DISCUSSION
   2.3.5. ASSESSMENT OF METHOD
2.4. FUNCTIONAL ANALYSIS
   2.4.1. METHOD
   2.4.2. PROCEDURE
   2.4.3. RESULTS
   2.4.4. DISCUSSION
   2.4.5. ASSESSMENT OF METHOD

2.5. CONVERSATIONAL ANALYSIS (CA)
   2.5.1. METHOD
   2.5.2. PROCEDURE
   2.5.3. RESULTS
     2.5.3.1. Opening Exchange Adjacency Pair
     2.5.3.2. First Topic
     2.5.3.3. Question
     2.5.3.4. Question-answer Insertion Sequences
     2.5.3.5. Answer
     2.5.3.6. Closing Exchange
   2.5.4. DISCUSSION
   2.5.5. ASSESSMENT OF METHOD

2.6. CONCLUSIONS

CHAPTER 3 TURN-TYPE MODEL

3.1. INTRODUCTION
3.2. METHOD
   3.2.1. DESIGN
   3.2.2. MATERIALS
   3.2.3. PROCEDURE
3.3. RESULTS
3.4. DISCUSSION
3.5. CONCLUSIONS

CHAPTER 4 CLUSTER ANALYSIS

4.1. INTRODUCTION
4.2. GENERAL METHOD
   4.2.1. DESIGN
   4.2.2. MATERIAL
4.3. CLUSTER ANALYSIS
   4.3.1. METHOD
   4.3.2. PROCEDURE
   4.3.3. RESULTS
   4.3.4. DISCUSSION
4.4. VERIFICATION
   4.4.1. METHOD
   4.4.2. PROCEDURE
   4.4.3. RESULTS
   4.4.4. DISCUSSION
4.5. CONCLUSIONS
CHAPTER 5 APPLICATION TO UNCHAired INTERACTIONS

5.1. INTRODUCTION

5.2 STUDY 1: MODEL AND CLUSTER ANALYSIS CONFIRMATION
5.2.1. DESIGN
5.2.2. SUBJECTS
5.2.3. MATERIAL
5.2.4. PROCEDURE
5.2.5. RESULTS
   5.2.5.1. Model Results
   5.2.5.2. Cluster Analysis Results
5.2.6. DISCUSSION

5.3. STUDY 2: THE CHAIRMAN'S ROLE
5.3.1. METHOD
5.3.2. RESULTS
5.3.3. DISCUSSION

5.4. STUDY 3: CONVERSATIONAL ANALYSIS
5.4.1. INTRODUCTION
5.4.2. RESULTS
5.4.3. DISCUSSION

5.5. CONCLUSIONS

CHAPTER 6 STRUCTURE AND FORMAL TALK

6.1. INTRODUCTION

6.2. ARE CONSULTATIONS FORMAL TALK?
6.3. FORMAL FEATURES OF CONSULTATIONS
   6.3.1. STRUCTURAL CONSTRAINT
      6.3.1.1. Pre-allocation of Form
      6.3.1.2. Pre-allocation of Speaker
      6.3.1.3. Pre-allocation of Topic
   6.3.2. ROLE REFERENCE
   6.3.3. CENTRAL FOCUS

6.4. REASONS BEHIND THE STRUCTURE

CHAPTER 7 SUMMARY: STUDY CONCLUSIONS

7.1. ADVANCE ON CURRENT METHODS
7.2. THESIS QUESTIONS
   7.2.1. CONSISTENT STRUCTURE
   7.2.2. STRUCTURAL ELEMENTS
      7.2.2.1. Opening
      7.2.2.2. Query
      7.2.2.3. Solution
      7.2.2.4. Closing
      7.2.2.5. Conclusions

7.3. POSSIBLE ACHIEVEMENTS OF CONSULTATIVE STRUCTURE
   7.3.1. TASK COMPLETION
      7.3.1.1. Query Multi-utterance
      7.3.1.2. Distinctive Solution Turn Design
   7.3.2. FORMALITY FEATURES
      7.3.2.1. Comparison across genre
7.4. FUTURE APPLICATIONS
   7.4.1. EXPERT SYSTEMS
   7.4.2. METHODS OF ANALYSIS
   7.4.3. FUTURE QUESTIONS
LIST OF TABLES

Table 1. Mean Percentages and Standard Deviations of Turn-time per Temporal Division for GQ Interactions.

Table 2. Mean Percentages and Standard Deviations of Turn-time per Temporal Division for SB Interactions.

Table 3. Means and Standard deviations of Turn-time in the First, Middle and Last Twenty Seconds for the Layman and Expert Roles.

Table 4. Frequency, Mean duration and Percentage of Total Time of Turns for each Role by Programme.

Table 5. Frequency of Act Type in each Third of the GQ interactions.

Table 6. Frequency of Act Type by Role in the GQ and SB Programmes.

Table 7. Ratio and Percentage of Model-fitting Acts in Each Stage by Programme and Examples from Interaction SB6.

Table 8. Estimated Transitional Probabilities for the 4-state Model with Actual Turn-type Pairs.

Table 9. Mean Number of Turns Following Each EM Turn in the Solution Section of FX Consultations.

Table 10. Prominent Clusters of the BG Cluster Analysis with All Temporal Divisions.

Table 11. Prominent Clusters of the WG Cluster Analysis with All Temporal Divisions.

Table 12. Prominent Clusters of the BG Cluster Analysis with Mid-Temporal Divisions 2-9.

Table 13. Prominent Clusters of the WG Cluster Analysis with Mid-Temporal Divisions 2-9.
Table 14. Prominent Clusters of the BG Cluster Analysis with All Model Sections.

Table 15. Prominent Clusters of the WG Cluster Analysis with All Model Sections.

Table 16. Prominent Clusters of the BG Cluster Analysis with Model Query and Solution Sections.

Table 17. Prominent clusters of the WG Cluster Analysis with Model Query and Solution Sections.

Table 18. Proportion of Interactions Containing the "Are" Cluster Words in the Query and Solution Sections.

Table 19. Proportion of Interactions Containing the "A" Cluster Words in the Query and Solution Sections.

Table 20. Actual Event Frequencies for the 4-state Model from the CC Interactions.

Table 21. Actual Event Frequencies for the 3-state Model’s Solution/Closing Section from the CC interactions.

Table 22. The number of CC interactions containing the "are" cluster words in the Query and Solution sections.
LIST OF FIGURES

Figure 1. Percentage of talk by Chairman in Temporal Divisions for the GQ interactions.

Figure 2. Percentage of talk by Chairman in Temporal Divisions for the SB interactions.

Figure 3. Percentage of talk by Layman in Temporal Divisions for the GQ interactions.

Figure 4. Percentage of talk by Layman in Temporal Division for the SB interactions.

Figure 5. Percentage of talk by Expert in Temporal Division for the GQ interactions.

Figure 6. Percentage of talk by Expert in Temporal Division for the SB interactions.

Figure 7. Estimated Transitional Matrix for the 4-state model.

Figure 8. Between-group average (BG) Cluster Analysis with All Temporal Divisions.

Figure 9. Within-group average (WG) Cluster Analysis with All Temporal Divisions.

Figure 10. BG Cluster Analysis with the Mid-Temporal Divisions 2-9.

Figure 11. WG Cluster Analysis with the Mid-Temporal Divisions 2-9.

Figure 12. BG Cluster Analysis with All Model Sections.

Figure 13. WG Cluster Analysis with All Model Sections.

Figure 14. BG Cluster Analysis with Model Sections Query and Solution.

Figure 15. WG Cluster Analysis with Model Sections Query and Solution.

Figure 16. Estimated Transitional Matrix for the 4-stage Model from Chapter 3.
LIST OF APPENDICES

n.b. All consultation material is available from the author to interested parties as transcriptions, cassette recordings or on computer disk.

Appendix 1. Transcription Notation.

Appendix 2. Transcriptions of GQ and SB Radio Query Interactions.

Appendix 3. Transcriptions of Initial Sample of Fix-It Phone-In Interactions (FX1).

Appendix 4. Transcriptions of Large Sample of Fix-it Phone-In Interactions (FX2).

Appendix 5. List of the Turn-type classifications for the FX1 sample.

Appendix 6. List of the Turn-type classifications for the FX2 sample.

Appendix 7. List of Frequent Non-Topic-Specific Words for Cluster Analyses.

Appendix 8. Transcriptions of the Computer Advisory Phone Consultations.

Appendix 9. List of the Turn-type classifications for the CC sample.
CHAPTER 1: LITERATURE REVIEW

1.1. INTRODUCTION

Consultation is a very valuable type of conversation. It often involves professional situations where the expert time is frequently in demand and consequently limited. In addition, there is usually a shortage of human experts (Rich, 1983) because their knowledge is often gained only through accumulated experience. These limitations of experts and their time has been such that they have encouraged the development of Expert Systems, i.e. computer systems which emulate human experts who give advice in specialized areas. The modelling of the task of consultation therefore has been found useful for the development of expert systems. However, the modelling of the human conversational interaction involved in consultation had been less of a concern, with poor results. (see section 1.5.) It would be useful to identify and to model the step-by-step process of consultations not only to emulate it but to understand its achievement.

This thesis investigated the structure of the course of a consultation in order to establish whether a consistent pattern existed across situations. That is, regardless of the individual participants or of the topic of the expertise domain, does an invariant structural pattern to consultations exist?

Atkinson (1982) suggested that professional-layperson interactions such as doctor-patient consultations were "formal" events recognizable by people through systematic differences from other conversation, e.g. an extended question-answer series. Further, he proposed that conversationalists could identify "formal" talk from hearing only sections of it. From this, one might suppose that local distinctions, e.g. conventional phrases, were involved as systematic differences, not being able to build up a global understanding of the topic from a section of the talk. So, if consultations were
recognizable in this way, it would likely exhibit distinct structural differences to other talk.

If this were so, the distinct structural features should be consistent across the individual occurrences of consultation in order to identify them as one event. Further, participants involved would have to recognize and adhere to these characteristics of consultation in order to accept and perform a recognizable consultation. In this thesis, the conversational structure of consultation was investigated for such a consistent structural pattern across situation and for any such pattern’s particular characteristics.

Assuming that consultations have a distinctive structure, one would suppose that the structure was accomplishing something in particular with regard to consultations. What might this be? It could simply involve the consulting itself or it might go beyond this to deal with the relationship between the expert and novice or conversational difficulties that might arise from the task. Likely purposes of a distinct consultation structure were also examined in this thesis.

Prevailing descriptions of the structure of the consultative process are few. Instead, many descriptions of consultation simply list isolated acts, without regard to sequential position or completeness in description of the entire consultation interaction. Of those descriptions of consultation focusing on the entire process of the consultation only four complete studies were known to the author. The analysis closest to the tenor of this thesis was examined in depth and three others were assessed generally.

1.2. DESCRIPTIONS OF CONSULTATIONS

1.2.1. ALTY AND COOMBS (1981) COMPUTER ADVISORY QUERIES

Alty and Coombs (1981) studied consultations at university computer advisory services. Their chief aim was to make recommendations about deficiencies in human-human consultations, in this case, concerning computer problems. Similar to this thesis, they investigated the distinctiveness of the interactions as a type across different
individuals and different situations. Their objective was to assess whether advisory interactions in general were sufficiently similar to be regarded as an identifiable category.

1.2.1.1. Methodology

The analysts chose a goal analysis because they wanted to determine the extent to which the user's needs were fulfilled during the interaction. It was stated that a list of goals was needed in order to provide a frame of reference so that the researcher could differentiate relevant from "accidental" structure. What is meant by "accidental" structure though? Should not this structure also be considered? It appeared that the analysts used the goals in order to generalize a structure first, which would then be fitted to the material.

As stated in the study, the method was first to ascertain the various goals of each statement. Then, the participants' lists of goals were used in order to suggest stages of the consultative process. Finally, specific behaviours and functions were described according to stages already defined. The structural similarity found was artificially created from the strong goal summary. All these statements pointed to the material being fitted to a pre-determined structure.

1.2.1.2. Procedure

More specific concerns about the analytical procedure surfaced in the description of the recordings. Firstly, the analysts themselves remarked on the small sample size, chosen arbitrarily to be fourteen. The process of collection, transcription and analysis was considered too time-consuming to allow larger numbers although ample material was available with an estimated 60 queries recorded.

A sequence of seven successive advisory sessions was randomly pre-selected for each of only two advisors throughout one week. It is unclear why successive sessions
were used instead of a balanced distribution over time of day and of week nor is it clear why only two advisors were studied. Using only two advisors made reliability unclear. Advisor results were likely to be biased due to repetitive individual strategy and also repetitions of recall from the two individuals. In fact, the researchers remarked at the increased variation in the goals given by the users, implying a lack of variation from the repeated subjects, the two advisors.

Another concern was the presence of the analyst and recording equipment in full view during the recording. The users were asked to participate immediately prior to the session, possibly focusing awareness on the recording process. These factors may have influenced subjects. A second sample did remedy these and other methodological faults, but it was not used in the original analysis of goals and divisions. The second sample was only used afterwards "to check the validity of the findings from the first sample" (p. 27) and so, the decisions about the structure being sought had already been made.

1.2.1.3. Data Collection

Transcriptions were divided by the experimenters into simple "utterances". An "utterance" was defined as any speech bounded by speech of another participant or a period of silence more than two seconds. These were not the participant's divisions and it could not be known that they were the best ones or even adequate ones for the goal analysis. In a subsequent session with experimenters, both participants were led through a written transcript of the conversation and asked to declare his/her reason for making each of his/her own utterances. This was done in order to gauge the mental state and attitudes of each participant during the consultation. At the end of the session, subjects were asked to group the entire transcription into episodes.

Several aspects of the debriefing process could have affected the accuracy of goal recall. Firstly, there was a delay of some days before the debriefing session, decreasing
the chance of recall accuracy. Secondly, before recall of local goals, the user twice was asked several general questions about his assessment and attitudes of the query and solution which might have interfered with later attempts to recall original feelings and motivations. Also, participants were asked to recall states of mind throughout the interaction; it would be difficult to recall at the debriefing stage changes in perspective about concepts as they were being developed. Finally, transcripts were presented in written form and not the medium in which they were first processed which also would likely have had a detrimental effect on the accuracy of recall.

1.2.1.4. Analysis

Both the goal lists and the transcription divisions were used to confirm the division of conversation into episodes and stages. The eventual decision about the episodes and stages was made using only a classification of the goals. Unfortunately, the analysis was undertaken by an experimenter and an advisor, both potentially biased. Also, the division was really only at the global level with lower level units described by the experimenters through observation. Major divisions of the interactions were assessed to be three episodes: Definition of Query, Formulation of Answer, and Communication of Solution, with eight stages within the episodes to be discussed below.

Similar studies were undertaken in four other universities in order to validate the results. Although some of the testing techniques were improved, e.g. immediate debriefing, there was a less random selection of users and still, on average, only three advisors per sample. It was taken that similarity at five different sites indicated that the "advisory interaction" was indeed a clearly identifiable form of exchange. However, the results were only similar in that "almost all" of the conversations could be divided into the same three episodes found before. It appeared that these interactions did not undergo a complete re-analysis but were only inspected for the structure already found. Even then, only the relatively loose structural division of the three episodes could be
decisively found; differences were discernible at the lower levels of this structure.

1.2.1.5. Results

Stages within these episodes were described as follows:

Definition of Query
1. Presentation of the Query
2. Clarification of the Query

Formulation of Answer
3. Identification of sources of information
4. Collection of background facts
5. Formulation and testing of hypotheses to a solution

Communication of Solution
6. Statement of the Solution
7. Justifying the Solution
8. Closure

Briefly, the query was presented typically in a single utterance with perhaps some background facts added. Mutual agreement of the query may then have been sought by participants. Solicitation of information sources, e.g. a listing of the programme commands, and of background facts was made through a series of questions to the user in preparation for a formulation of the solution. The user was then instructed in the solution and the advisor may have justified it in order to clarify it in his/her mind. Finally, a Closure stage was executed with a brief thank-you exchange.

1.2.1.6. Evidence from the material

The validity of these stages was questionable. The analysts stated that at least one stage, Clarification of Query, was not generally recognized by the user. In a negotiated interaction, it would seem unlikely that one group could not identify an occurring stage. Even more paradoxically, many stages could not always be recognized by the analysts. For example, the stages of background collection and hypothesis-testing were only identified as separate from the list of goals and not from observation. In addition, the analysts found they could only define the stages within the Solution
Formulation episode in general terms because these varied greatly; more detailed analysis of these stages was abandoned.

Even where stages could be identified, their boundaries were often difficult to delineate, especially in the Clarification of Query stage and between the Information Collection and Hypothesis Testing stages. The entire episode of Communication of Solution "was not always clearly divisible" because the solution statement itself was often expressed instead as the advisor's final statement in Episode 2.

In many cases, the stages appeared only infrequently. Typically, information was available from the command listing of the programme in which case the Identification of Sources stage did not take place. The Clarification of Query stage was not present in most conversations; it was only clearly present in three of the 28 interactions. The Justification of Solution was declared by the analysts to be unnecessary and only present in 32% of the interactions as a very brief stage. So, these stages could not be accurately determined in several instances, even by participants on whose goals they were based nor did they always occur.

Assumptions were also made about the internal thoughts and feelings of the participants. Advisors were said to ignore any information "thought" to be incorrect or any tentative solutions from the user. Also the fact that comments made in justification of the solution appeared to be primarily for the advisor to clarify his own thoughts. This could not be known by the analyst. The entire existence of the Clarification of Query stage was based on the advisor regarding the initial statement of the query to be ambiguous to the advisor, although presumably, this was not explicitly stated by the advisor.

1.2.1.7. Conclusions

Therefore, although a reasonably complete investigation of consultations within the computer domain had been attempted, a number of aspects weaken the study's further
Firstly, in contrast to this thesis, they confined themselves to the one domain of computing problems. Although this was an explicit aim, a move beyond the domain of computer problems in this study might have been beneficial. Investigation of the consultation across expertise domains would afford a more complete and reliable assessment of any invariant structure. Secondly, the sample size was too small effectively generalize. Also, the presence of analyst and equipment during recording may have changed the normal course of events in unpredictable ways. Finally, the analysis itself should be validated. The analysis used a list of goals in order to define a framework to which all material was then compared; no analysis was undertaken completely from the recorded talk itself. Also, the more detailed descriptions of some stages could not be made precisely or accurately. Some of the statements in the generalization from analyst observations appeared to be unsupported. The validity of the study's results, therefore, is in question.

1.2.2. ZIMMERMANN (1984) POLICE COMPLAINTS

Zimmerman (1984) examined "service calls" in order to investigate the link between talk and its social occasion. Observation of complaint calls to the police was claimed to reveal an underlying organization of distinct clusters of activity, each performing a specific function. These were as follows:

1. Opening/Identification
2. Complaint/Request
3. Interrogative Series for consensus on details
4. Remedy/Response Offer
5. Closing

The fairly large sample size consisted of 125 calls, but they were collected only during a two-hour period on one weekend night. It was even noted by the analyst that a skewing of incident type was likely, e.g. an increase in drink-related crimes. In addition, the structure may have been artificially constrained in form and type due to prompts from the computer programme used to log the specific relevant information.

In contrast to the other studies presented here, Zimmerman (1984) considered
generalization beyond his primary domain to a class type of "service" call. He proposed that instances of service calls had their own unique organizational details but that they all had in common a single purpose, a set of interim responses, and a final response to the request. However, only three examples of other "service" calls were quoted.

The method of analysis used was observational and descriptive. Different interactions were observed and similarities noted. Generalizations were then made from these similarities. However, the exact procedures used by the sole analyst were not specified and may not have been explicitly developed to ensure unbiased assessment.

1.2.3. BYRNE AND LONG (1976) MEDICAL CONSULTATIONS

Byrne and Long (1976) undertook a review of the accomplishment of medical consultations in order to provide information for a medical field interested in communicating with patients effectively. Although a very large sample of 2500 consultations was considered, no systematic conversational analysis was used. Byrne and Long (1976) relied on a similar method to Zimmerman (1984) of observation of similarities between interactions and then intuitive generalizations made. The generalizations were of "events", a unit left undefined, consistently occurring. These events were then placed in a "logical" order. Therefore, nothing except the analysts' own observations suggested the "structure" they described and so no confirmation of it can be said to have been made. Not surprisingly, they noted that the six phases rarely appeared in practice and should be treated as an ideal. These six phases were:

1. Establishing relations in an opening exchange.
2. Reason for attendance prompted and given.
3. A verbal or physical examination.
4. Consideration of the condition for agreement on details.
5. Detailing of treatment through instructions, or Further investigation through questioning.
6. Termination of the interaction.
Naturally, confinement solely to medical consultations would prevent the results from being readily generalizable consultations across situations. In fact, there is some evidence that medical consultations vary slightly in structure with regard to other consultations, as discussed later in this chapter. In this case, the structure described would not be generalizable to other instances of consultation.

1.2.4. CROW (1986) TV CALL-IN SHOW

Crow (1986) specifically set out to study television call-in talk in order to highlight its advantages and disadvantages to participants. So, the material was confined to a very specific domain, sexual problems, and to only one situation of it, telephone queries to a television sex therapy show Good Sex. Generalization from this study would be hindered not only by the exclusion to one topic but the intimacy of the topic itself; structural changes were attributed to topic intimacy, e.g. increased emphasis on thanks and compliment sequences for particularly weak calls. Also, the programme format was well-known to callers and the expert, not a native English speaker, was a practised veteran of this programme. Therefore, aspects were likely to be very esoteric and idiosyncratic. For example, it was noted that the expert’s opening act rarely deviated from its own particular form.

Like the analysis of the two previous studies, Crow (1986) made observations about the general structure of talk in these calls. However, he claimed that these judgements were based on the particular features evident in the talk rather than any prior assumptions by the analyst. He used his own "pragmatic analysis" (Crow, 1983) with hierarchical units of episode, sequence, and act, i.e. the minimal pragmatic unit. These units supposedly reflected the coherence or shifting of topic but were never specified. The analysis itself was a "focus" on the sequences found in the majority of calls that were seen to fall into four "fairly distinct" sections. These were supposedly reflected in patterns of talk, e.g. syntactical repetition. Then, observations were made of the
lower-level structure and acts. There seemed to be no more systematic testing of their distinctiveness from each other. The four sections were: 1. Opening, 2. Problem formulation, 3. Advice, and 4. Closing.

The television call-in shows involved a confusion of media between participants with the caller receiving visual cues but the expert only aural cues; gestures and facial expressions were not even transcribed. The sample included only 25 calls out of 46 calls recorded all from the same programme in a single week. The calls are all pre-screened and selected so a certain lack of randomness existed.

1.2.5. CONCLUSIONS

Therefore, in all the above studies, three major faults surfaced. First, the analyses used could not be guaranteed as reliable and were not validated; even those analyses not relying solely on experimenter inference were not re-analysed by another method. In all the studies, at some point, descriptions of the structural pattern were inferred by experimenter observation. Both Byrne and Long (1976) and Zimmerman (1984) solely inferred the structure intuitively from experimenter observations of major "events" occurring in the consultative process. Crow (1986) inferred stages from patterns made by the participants themselves, however the patterns were still identified only by the analyst. Alty and Coombs (1981)'s stages were defined from a generalization of participant's "goals" at the global level although they found that their assessment of participants' responses could not be precise; description at lower levels of stages was through experimenter observation. In this thesis, by contrast, a number of analyses were undertaken in order to ensure verification of the stages identified.

Secondly, only one specific expertise domain was considered. In some cases, e.g. the medical consultations and the sex therapy show, it would be likely that the topic may have had some effect on structure that would not be clear for a general view of consultations across situations. This thesis remedied the problem by considering a wide
range of expertise domains. Finally, small or biased samples were overwhelmingly evident. This thesis presented a large corpus of work which naturally occurred free from experimenter presence.

Nevertheless, the consultations seen in each study were recognized as distinctive by analysts. More importantly, common goals and stages were identified by the speakers themselves and these assessments were found to be stereotyped in structure and its contents, i.e. types of utterances such as instructions. (Alty & Coombs, 1981) Alty and Coombs (1981) concluded that the "advisory interaction" was a clearly identifiable form with a consistent structure. Similarly, Zimmerman (1984) theorized that the structure of his calls represented a particular social event, i.e. "calling the police". Crow (1986) noted that his query calls exhibited some pragmatic features that were not typical of conversations in less formal circumstances.

The consultations in the above studies were proposed to contain aspects consistent with a type of interaction of a problem-solving (Alty & Coombs, 1981), service-oriented (Zimmerman, 1984), and advice-seeking nature (Crow, 1986). The consultations investigated were thought characteristic of a certain interaction type that might be defined as "providing a service of problem-solving".

So, the descriptions of the process of consultative interactions found in the literature have not been verified themselves. Yet, similarity and distinctive structure to consultations as a whole was indicated. In addition, this thesis remedied all concerns of domain, sample, and analysis type restrictions.

1.3. LOCAL CONVERSATIONAL STRUCTURE

Many researchers have proposed that, in general, talk must have some structure to it in order to avoid communicative chaos. (Duncan 1972, 1973; Yngve, 1970) After investigating these specific analyses of consultation, analyses of conversational structure in general were then considered in regard to the study of consultations. The structure
of consultation may simply be a variation of general conversation structure. Zimmerman (1984) proposed that the structure of police complaints was due to well-known conversational procedures that accomplished the task rather than any unique format. Similarly, Crow (1986) believed that his consultations were a variation of everyday conversation, subject to the same structural expectations. The level at which structure should be defined in order to analyse most suitable the course of consultation must be determined. It might be local behaviours such as sound, act, turn, turn sequences, or conceivably some more global aspect, e.g. role, topic.

1.3.1. TEMPORAL PATTERNS OF SOUND AND SILENCE

Perhaps the simplest form of interaction structure that has been studied is alternating sound and silence periods. These are very simple units, however, not always even 'speech from non-linguistic sounds or one speaker from another. Units of sound and silence, then, may not be sufficient to distinguish any distinctive structure for consultation.

Patterns and mathematical descriptors in talk have been found to be consistent across situations at this level. However, precisely what these patterns represent in a higher level explanation of conversation process is unclear. They may simply reflect the alternation of turn evident in most talk and may not be detailed enough to identify any distinctive exchange within consultations.

Chappie (1939; 1940) was one of the first to study human interaction quantitatively with regard to the sequential process rather than behaviours isolated from their sequential position. He was concerned with the sequence of the durations of activity/non-activity in the progress of an interaction. Certain ratios were found to be consistent across individuals. After plotting durations of actions cumulatively to give a series of slopes, each individual showed his own constant ratio between fast and slow rates. Deviations from this ratio, however, were uniform across the interactions of
different individuals. These deviations were typically unusually slow rates which consistently followed slopes maintained over an unusually long time, indicating adjustment within conversation. (Chapple, 1939) Adjustment within conversation may be at a communicative level below any that would be characteristic of consultations. Also, these deviations from the ratio were only individual events and did not suggest any pattern reflecting the entire interaction.

With Henderson et al. (1966), Goldman-Eisler found a regular long-term structure occurring within an interaction with successive speech-silence ratios. Sections of "long pauses with short utterances" were found to alternate with periods of "short pauses and long utterances", or hesitant and fluent periods, respectively. The hesitant phase was hypothesized to include the necessary cognitive planning for the fluent phase. Similar cycles were found by Butterworth (1975) to be associated with idea units coinciding with gross semantic and syntactic units. Henderson et al. (1966) proposed then that temporal patterns in talk were due to internal cognitive planning periods alternating with subsequent periods of its output. If these cycles are due to individual planning, then a consistent description across situation, of interest to this thesis, would be unlikely.

In contrast, Schwartz and Jaffe (1968) mathematically modelled the same temporal patterns from the Henderson et al. (1966) article and suggested that the regularity found could be simply chance variation occurring within a Markov process rather than individual cognitive planning. If it was assumed that the sound-silence ratios were exponentially distributed and the temporal pattern built up by alternatively sampling from the two distributions, this would be characteristic of a Markov process.

Similarly, Jaffe et al. (1967) modelled the structure of interaction using a logical four-state system of binary states between two people (A,B), i.e. "00" both silent, "01" B vocalizing, "10" A vocalizing, and "11" simultaneous speech. Sequential dependency in a 4x4 transition matrix showed a good fit for a first-order Markov model. Although there is some question about a first-order model as the exemplar, still the satisfactory
modelling of interaction suggested a consistent pattern across individuals.

A second model (Jaffe & Feldstein, 1970) corrected for loss of speaker individuality in the first model in which all actions were treated as if they came from a single source. The second model assumed that participants made independent decisions to speak or not, at any one time, with probabilities conditional on their joint history. The result revealed, however, that interacting speakers were not as independent as the separate-source model assumed and some interdependence of the participants seemed to exist. These models supported the existence of overall consistent patterns to conversational structure independent of situation as well as an interdependence between speakers. What does the Markov pattern represent in real terms and to participants? Does it reflect the participants’ efforts to conform to a particular structure? It may simply represent the exchange of talk, which would not necessarily specifically identify consultations.

Using simple sound or silence units meant reliable coding and easier calculation of large samples of data. They also meant simple divisions of conversation without regard to higher-level characteristics. For example, "possession of the floor" was gained through the first sound of one speaker and maintained until the first clear sound by the other speaker, whether these were significant contributions to the talk or not. So, the simplicity of sound or silence units may not be useful for explanation at higher levels of the organization of interaction. (Jaffe & Feldstein, 1970) The pattern of cycles or alternation between these two activities of sound and silence were likely reflective of a higher level exchange of turn.

1.3.2. TURN EXCHANGE SIGNALS

The most salient component of conversation was considered by many researchers to be turn exchange (Duncan, 1972; 1973; Duncan & Fiske, 1977; Feldstein & Welkowitz, 1978; Jaffe & Feldstein, 1970; Kendon, 1967; Sacks, et al. 1978; Yngve, 1970; Zimmerman, 1984). The turn and exchange of turn are closely connected to the
development of the topical organization of the conversation. (Yngve, 1970) Consecutive
turns are specifically oriented to for their sequential relevance. (Moerman, 1972) Each
turn displays comprehension of the previous turn and motivation for the next.
(Zimmerman, 1984)

Talk is achieved through the taking of turns. (Schegloff, 1982) Although turns
are very valuable for topic control and must be specially solicited, turn exchange is still
very efficient with little overlap of talk. (Sacks et al. 1978) The phenomenon of "one
speaker at a time" and an avoidance of simultaneous speech has been noted (e.g., Jaffe
& Feldstein, 1970) in this culture (e.g. Reisman, 1974). How is efficient turn exchange
accomplished? It has been claimed that observable signals must exist in order for
people to exchange turn so efficiently. (Duncan, 1972, 1973; Duncan & Fiske, 1977;
Kendon, 1967; Orestrom, 1983) Even the interval of silence before a switch of speaker
was proposed a "signal". (Jaffe et al., 1967) Identification of turn exchange at the local
level of "signals" was thought to be beneficial.

Duncan (1972, 1973) proposed that all participants indicated his or her status
with regard to the turn and its exchange through the display of any one of several
behaviour signals according to a set of rules. All of Duncan's rules operated with a
redundancy of widely-varying signals operating through relative changes, e.g. a relaxation
of posture rather than any fixed motion. In this way, the rules could be enacted even
without a particular modality available and so, would be viable across all situations and
individuals.

Duncan (1972, 1973) found an extensive range of behaviours used as turn
signals. This included paralinguistic activity such as intensity, pitch height, and extent,
e.g. drawl. Body motion was also noted, including head gestures and movements e.g
nodding, turning and head orientation, facial expressions, postures and shoulder, hand,
foot and leg movements. Certain stereotyped sounds or words were also catalogued,
e.g. filled pauses, sociocentric expressions, e.g. "you know". For example, the turn-
yielding rule, signalling to the listener permission to claim the turn, involved any or all of the following: 1. a rising or falling intonation at the end of a phonemic clause 2. a drawled or stressed last syllable 3. relaxation of body motion used during the turn, 4. certain stereotyped expressions, e.g. "you know", 5. an unfilled pause, a head turn towards the listener, or a decrease in pitch and/or loudness.

Duncan and Fiske (1977) and others (Orestrom, 1983; Schaffer 1983, 1984) found, however, that the physical behaviours first studied weren’t the primary cues to turn exchange. Syntactic and semantic cues appeared to be the primary cues. Talk filtered to exclude syntactic and semantic cues indicated that intonation alone was not sufficient for listeners to identify turn and paragraph boundaries. (Schaffer 1983, 1984) The obvious content completion of the utterance was proposed to make a physical signal of turn exchange unnecessary. (Duncan & Fiske, 1977) Therefore, despite Duncan (1972; 1973)'s early results with behaviours, recent studies suggest that higher-level syntactic and semantic cues are the primary "signals" of smooth turn exchange. (Duncan & Fiske, 1977; Orestrom, 1983; Schaffer 1983, 1984) So, perhaps concentration on higher level units than behaviour would be beneficial in the study of structure as defined by turn and turn exchange. Consultation, notably involving information transfer, might be best characterized at a structural level using semantic units.

1.3.3. SPEAKER INTENTION

1.3.3.1. Definition of acts

It would seem that semantic and syntactic features best describe the structural feature of turn exchange. If so, due to the multi-functionality of the word form, the conversational intention of the participant should be considered rather than specific content for study across situation.

Researchers using "intention" of the participants in the analysis include the prominent studies of Bales (1950), Sinclair and Coulthard (1975) and Labov and Fanshel
All these studies based their categorization of units on the "illocutionary act" of an utterance, i.e. the intent performed through the saying of that utterance. (Austin, 1962; Searle, 1979) Sinclair and Coulthard (1975) simply considered the intention of the speaker in managing the discourse, e.g. eliciting a response, responding, signalling boundaries within the talk.

However, do social considerations also play a part in intentional acts in consultations? In Bales (1950) utterances were classified according to interpersonal intent, i.e. who performs what in relation to whom. This resulted in personality categories such as "seems friendly" and "dramatizes" as well as communication categories, e.g. "gives information". However, this focus on individual personality traits would not be useful in a description across situations.

Labov and Fanshel (1977) incorporated more general social dimensions when categorizing a unit’s intent. They used assumptions about the participant’s social relationship, specifically shared and unshared knowledge. For example, using A-events (those only A speaker knows about) and B-events (which only B knows about), if A makes a statement about a B-event, it is heard as a request for confirmation because A is not in a position to state anything about an unknown B-event. In addition, intention was also interpreted using inferred information from the surrounding context and paralinguistic cues, e.g. laughter.

The Labov and Fanshel (1977) analysis, however, was limited by its reliance on analyst’s interpretation of these intentions. Some steps of the analysis, it was admitted, could not be precisely accomplished. Others involved considerable analyst inference, affecting reliability and accuracy. For example, the "expansion" step of the analysis, which expanded the meaning into the nearest equivalent in text terms, e.g. filled-in inferred information, resulted in an expanded version of the question "When do you plan to come home?" which read approximately:
"When are you leaving my sister’s house where your obligations have already been fulfilled and returning as I am asking you to a home where your primary obligations are being neglected, since you should do this as head of our household?” (p 50)

Labov and Fanshel (1977) developed much of their intentional act taxonomy during the analysis of a single therapeutic interview, which is not good for a study of structure across situation. Many researchers devised intentional act categories artificially, although intuitively. Whether they were actually those known and used by interactants was not the main concern, making validity of the categories questionable. Often, as noted in Taylor and Cameron (1987), they were not based on close analysis of actual data but rather on isolated examples drawn from the experimenter’s intuition. Perhaps social influences and utterance intention would be more accurately interpreted through an emic viewpoint?

1.3.3.2. Turn sequences

Labov (1970, 1972; Labov & Fanshel 1977) proposed sequencing rules to connect actions and account for coherence within the interaction. Their fundamental sequencing rule was the obligation to respond to a request, even though the response may be to delay or to refuse the request. (Labov & Fanshel, 1977) The response may even be another question which according to the rule of "embedded requests", would be heard as asking for information necessary to respond to the original request. A listing of conversational sequences of acts included a request sequence, which might be potentially relevant to consultations:

REQUESTS
1. Speaker A: request X
2. Speaker B: give X, carry out X, or refuse
3. Speaker A: acknowledge, reinstate, redirect, retreat, mitigate, renew, accept, reject, or withdraw
Sinclair and Coulthard (1975) found that their main structural "unit" of the interaction was also a sequence of acts. It was the most concisely described and the most clearly informative "unit". This sequence, or "exchange", consisted of three "moves" that transmitted information: Eliciting, Informing, and Acknowledging. (Coulthard & Brazil, 1979) Subsequent investigation of other talk revealed notable differences only at this turn sequence level. For example, doctor-patient consultations were found to have typically longer and shorter exchanges with more or less feedback moves than in the classroom talk, reflecting a prevalence of short terse questions. (Coulthard et al., 1981) This example indicates that, perhaps at the level of turn sequences, intentional acts of conversation would reveal a distinct pattern to consultations.

1.3.4. "CONVERSATIONAL ANALYSIS"

One perspective that incorporates both the emic viewpoint and turn sequences is "Conversational Analysis" (CA). Conversational Analysis attends to the overt display by participants of the negotiation of the conversational process, which is based on conventions to which the participants, as part of a society, are oriented (Garfinkel, 1967). Many CA features focus on local negotiation of actions between participants within sequences of turns, which appeared important in the previous discussion.

1.3.4.1. Adjacency pairs

Sequencing of turns is very strong in an "adjacency pair". This is two adjacent turns by different speakers with a "conditional relevance" between the turns, i.e. the first utterance makes the second utterance relevant and necessary. (Schegloff, 1972) Conditional relevance usually compels the specific form and speaker of the next turn. Failure to complete a pair must be justified. Therefore, the first part of the pair must necessarily have some recognizability through syntax, conventional words or phrases, or
sequential position in order to alert the second speaker. (Schegloff & Sacks, 1973) Adjacency pairs ensure a close sequence of two particular utterances that require this; such sequences particularly relevant to consultations are question-answer and greeting and closing exchanges.

In the question-answer adjacency pair, questions are often readily recognizable by their syntactic form and/or intonation. Conditional relevance of this pair means an answer will be expected as the second part and even questions in this slot will be assumed to be in preparation for the eventual answer. A question in the second-part slot causes an "insertion sequence" in which this question is first answered before the original question is answered. (Schegloff, 1972) As requests for information are intuitively integral parts of consultations, question-answer adjacency pairs and insertion sequences would be likely features although whether they would follow the characteristics outlined above is not known.

The closing of a conversation must be negotiated explicitly in order to satisfactorily and clearly end talk by all parties. Schegloff and Sacks (1973) determined that closing is conventionally accomplished using a terminal exchange adjacency pair in which the decision to close is proposed and accepted. Given that adjacency pairs must be distinctive to ensure they are recognizable, its position, as well as conventional words, signal the closing exchange. Closing is generally located after a "pre-closing" exchange pair.

First parts of pre-closings basically fill a turn without starting a new topic. This allows the next-speaker to complete the pre-closing pair and start the closing, or to initiate a new line of talk and pre-empt the closing. Some topics may not have gotten into previous talk and the pre-closing allows the last opportunity to introduce them. Schegloff and Sacks (1973) identify the following forms for pre-closings:
1. "topic-independent" fillers, e.g. "well"

2. topics which are closing-relevant, e.g. request satisfaction, making arrangements, remedy for complaint

3. topic bounding, e.g. formulation or summation, especially for monotonically conversation

4. reiteration of previous material in the conversation, e.g. the initial topic

5. conventional closing statements e.g. "thank you".

Are certain forms of pre-closing distinct to consultations? For example, satisfaction of the request for information or an offering thanks for the advice given would seem to be probable issues for consultations.

Another example of an adjacency pair is the greeting exchange. In telephone conversations, the greeting-greeting adjacency pair allows identification and recognition of the other, usually accomplished visually (Schegloff, 1979); this has been found in phone-in query shows (Crow, 1986; Zimmerman, 1984). In these cases, it is preferable that the identification of the other person takes place through voice recognition from the conventional greeting phrase. The contents of the first turn, by the called party, is therefore designed towards the expected caller's recognition ability. For example, a business switchboard operator would answer with the name of the company. The widely- presumed difference between status of experts and novices may encourage a specific type of opening exchange, perhaps making specific reference to roles.

In general, adjacency pairs might likely be found in consultations but are they of similar forms or are they distinct? In adjacency pairs, the current speaker, in effect, selects the next speaker by the type of first-part turn and also sets constraints on the next turn type. (Sacks et al., 1978) Adjacency pairs are a type of turn-allocation technique found as part of a more general set of rules.
1.3.4.2. **Turn-taking rules**

Sacks, Schegloff and Jefferson (1978) proposed a set of turn-taking rules that accounted for local variations in conversation yet also allowed a description of a general structural organization in conversation applicable across situations. These rules specifically consisted of two components and three rules. The components entitle the speaker to only one initial unit-type, e.g. sentential, clausal or lexical, for which turn completion is imaginable by the hearer; the point of projected completion is called the turn-relevance place (TRP). At this point, the rule set comes into effect and the turn is given either directly to the next speaker or taken by self-selection according to the ordered set of rules:

1. If next-speaker is selected, e.g. if the current speaker directly addresses a next-speaker by name, the next-speaker has a right and obligation to take the next turn,

2. If no next-speaker is selected then the first to self-select, i.e. to start speaking, has the right to the turn,

3. If none of the above options occur, the current speaker may self-select and continue speaking.

The rule set re-applies recursively at the end of each TRP and transfer of turn may potentially occur. Because the TRP makes turn change relevant at the end of every unit, the speaker is under pressure to minimize the turn size or to override the bias in order to avoid interruption. Therefore, turns that consist of more than one utterance unit, "multi-utterances", must be specially achieved by the participants. (Schegloff, 1982) This must be noticeably accomplished either by a pre-announcement, e.g. "I have two points", or by a gloss over the transition point, using speech acceleration, pitch drop or breath suppression, and/or syntactic connections. Termination of a multi-utterance must be signalled. This signal may be through a summation, formulation or question. (Schegloff, 1982) The explanation of facts or instructions, for instance, may take the form of a lengthy multi-utterance in consultations. If so, must
they still be specially achieved in the way described?

Other turn types have been identified involving a transcendence of the minimal turn size pressure. For example, dispreferred responses are less desirable alternatives in a second-part position of an adjacency pair. They seek to maximize the period before its completion. Therefore, they tend to be longer and to include some delays, requests for clarification, e.g. "what?", partial repeats, and turn prefaces, e.g. "uhhh". (Pomerantz 1978, 1984)

Sharrock and Turner (1978) proposed a set of "givens" or default assumptions inferred from unusually lengthy turns for the circumstances. They consisted of explanations for states differing from the "given" or usual ones. For example, in calls to the police, the time of the event complained about is assumed to be immediately prior to the call and the problem is assumed to be the caller's own, both unless otherwise stated in multi-utterances. Zimmerman (1984) noted similar expectations of the explanation of the situation. Perhaps there are default assumptions associated with each consultative domain and the individual circumstances may dictate the relative length of the turns concerned; this would hinder a general structural description across situations.

The set of turn rules was proposed by Sacks et al. (1978) to systematically vary in different situations. Specifically, the turn allocation feature was thought to move along a continuum of pre-determined constraint. Debates, for example, were cited as having a far stricter turn pre-allocation and an increased turn size than general conversation. Where would consultations fall along such a continuum? Perhaps the very fact that the talk is a consultation may dictate the structure.

1.4. GLOBAL INFLUENCES ON STRUCTURE

The structure of consultation may be a product of more global influences than local determination of turn and of turn sequences. General guiding principles may be followed to form talk's structure. The particular situation of consultation itself may be
dictating its structure.

1.4.1. PRINCIPLES OF RATIONALITY AND FACE

Grice and his followers (Grice, 1975; Levinson, 1983; Sperber & Wilson, 1986) proposed the use of general principles of rationality governing conversationalists' organization of structure. Basically, these principles were said to guide conversationalists in cooperative behaviour. According to the Cooperative Principle, they were counselled by four maxims: Quality, Quantity, Relevance and Manner. These aimed to make contributions to talk truthful, concise, relevant, and unambiguous, respectively. As Taylor and Cameron (1987) point out, general principles may be useful as a broad descriptive theory but conversationalists may not actually use these principles in practice.

Additional considerations, however, may exist for participants in consultations as the situation involves a difference in roles not general to all talk.

Brown and Levinson (1987) proposed three speaker considerations in order to satisfy both rational and "face", i.e. sense of social worth, needs: communicate the message content, be efficient, and maintain the other's face. From the myriad of ways to communicate the same message, selection depended on the relative need of these considerations, e.g. how urgent the message was, how threatening the act was likely to be. Acts that were potentially very face-threatening would be modified by the speaker to ease the threat. These include acts threatening both positive face, i.e. to be approved of, and negative face, i.e. to be left unimpeded.

Are consultations potentially face-threatening interactions? Requests and advice-giving, both salient actions in consultations, potentially threaten the hearer's desire to be unimpeded because the speaker wants the hearer to do something. To counteract the potential imposition of consultations, the speaker can use a structure involving negative politeness, which maintains or offers social distance using deference or "hedges". Examples of this strategy include indirect expressions, passive
voice, hedges, e.g. "it seems to me", token acceptances, e.g. "well yes but.", and pre-announcements, e.g. "I'd like to ask you a big favour". Alternatively, if the speaker was most concerned with stating the message with maximum efficiency, a "bald" statement, i.e. just the message without any moves to soften it, could be used, e.g. imperatives. However, the speaker must be able to afford to ignore the recipient's face through a position of power or a special need for urgency, both potentially relevant in consultations.

Goffman (1981) also proposed general social constraints on talk including the "ritual" constraint to maintain "face". Mutual acceptance of all participants' roles was a basic feature of it and the situation and role, not simply the talk, influenced the structure of the talk. (Goffman, 1967) For example, in the classroom, a teacher's role is to expand on a student's knowledge, not to gain from it, giving the distinctive, "exam" question sequence, i.e. teacher query, pupil answer and teacher evaluation of answer. However, Goffman also described ritual constraints which kept open communication channels and topic continuity so, it was not made clear what, if any, difference exists between the social face aspects of ritual constraints and normal conversational mechanics. Also, it was not clear whether the characteristics of ritual constraints were also be found in consultations or indeed whether they were followed by conversationalists at all in general. As found with the pre-defined classification schemes of speaker intention, these general principles were also based on isolated examples drawn from the experimenter's intuition, as noted by Taylor and Cameron (1987).

1.4.2. FORMAL TALK

"Formal" interaction types are frequently defined by their distinctive structure. Atkinson (1982) suggests that people recognize "formal" talk by comparing it to normal conversation and finding normal conversational features differentially occurring. This
difference usually takes the form of set restrictions on the wide number of alternatives normally appropriate in speech. Wolfson (1976) suggests that people define a "formal" event by its specific rule(s); he found that the interview is widely defined by the interviewer's exclusive rights to ask questions of the interviewee.

Consultations are distinctive and have been identified by some as talk located in formal settings. According to Zimmerman (1984), the identification of a complaint call to the police is recognized as such by its location within a formal framework which affects the structural organization of the interaction. Atkinson (1982) noted that many small professional interactions, e.g. consultations, should be included in the study of "formal" talk although at present this was not widely the case. Identification of any "formal" features that may occur in consultations may enlighten the structural description of this interaction type.

Events in formal settings were proposed to have some prespecified size and ordering of turns forming different variations of the turn-taking system. (Sacks et al., 1978) Greatbatch (1988) suggested that formal talk involves a systematically charged turn-taking system that pre-sets aspects of local management, e.g. order, size and content of turns. Also, he proposed that other systematic differences existed in the formal talk of news interviews that were a result of constraint on the production of turn type. Constraint of the more variable aspects of conversation, e.g. turn structure, would seem to be a feature for "formal" talk. Typically, formal events involve rigid turn structure, a central focus, and adherence to role. (Irvine, 1979) Two important components affecting, or being affected, by the structure of formal speech are role and topic. (Erin-Tripp, 1973)

1.4.2.1. Topic

Expert-novice interactions exhibit monotopicality, the expected confinement to one topic during the interaction, in order to focus attention on the relevant issue.
Ervin-Tripp (1973) noted that the occurrence of certain speech activities, e.g. introductions, may depend on the conventions of the particular situation. Evidence for topic restrictions in certain formal situations can be found in apologies for deviation, e.g. "to get back to the question". (Ervin-Tripp, 1973) If it is then assumed that topic is conventionally constrained in talk of formal situations and that topic is a key factor in a speaker's tactics (Ervin-Tripp, 1973), monotopicality could be violated to effect. In doctor-patient consultations, the doctor may strategically change the topic away from medical issues to more personal themes in order to "demedicalize" the situation. (Silverman, 1987)

Does monotopicality or restraint of topic affect structure? Atkinson et al. (1978) observed that a meeting's chairman controls the topic by pre-allocating turn rights; they proposed that this was done through the "authority" of the role. In interviews, Wolfson (1976) concluded that the interviewee didn't have the right to introduce new topics but rather he knew he was expected to confine himself to answering the questions. This was found to have changed the structure of narratives in interviews from those found in spontaneous conversation. Interview narratives were more concise, had less detail, were in summary form, and contained emphasis on the part relevant to the question.

Is topic controlled by the use of conversational features rather than through role authority? The use of question-answer series is well documented in consultations. (Alty & Coombs, 1981; Byrne & Long, 1976; Coulthard & Ashby, 1975; Crow, 1986; Fisher & Groce, 1990; Mishler, 1984; Silverman, 1987; Zimmerman 1984). In the conversational sequencing of questions-answers, the participant answering the question and conventionally simply does that no more and so the questioner is reserved the right to talk again. (Sacks, 1972) In other words, the questioners in a question-answer series typically control the topic in the series. In practice, Coulthard and Ashby (1975) noted that due to the greater frequency of initiations of request for information by doctors over patients, patients found it difficult to introduce topics.
1.4.2.2. Role

Role differences in terms of status or dominance has been noted in syntactical and lexical selections. Situations where one role has status over the other see more use of role address, e.g. Mr Chairman, Doctor (Ervin-Tripp, 1973), of intensifiers, e.g. "very", empty adjectives, e.g. "divine", hypercorrect and polite grammar, and hedges, e.g. "I guess". (Lind & O'Barr, 1979)

Do these roles of "expert" and "novice" have an effect on structure at the level of turn and turn exchange? Frequency of interruption in conversation seen as index of personality trait of dominance. (Roger, 1989; Rogers & Jones, 1975) But not every interruption is an expression of social dominance but simply one factor in asymmetrical distribution that helps defines participant's input. (Huls, 1989) Roger (1989) found indications that conventional social norms may override any effect from a dominant personality trait, at least in the first 5 minutes of an interaction.

Coombs and Alty (1984; Alty & Coombs, 1981) have investigated experts and novices interacting in computer advisory services. They found no conclusive evidence that experts had more control in conversation, as defined by initiation of question-answer adjacency pairs and amendments to previous statements. The belief that experts have control of consultations came from doctor-patient consultations which are widely reported to be asymmetrical, that is that the participation by one role is greater than that of the other. According to Fisher and Groce (1990): "Doctors, by virtue of their location in the social structure, have an institutionally based, interactionally accomplished position of authority - an authority that patients lack." (p. 225) Many researchers reported that the asymmetry in these consultation were due to more control of information, and therefore topic, through more question and request initiations by the doctor. (Coulthard & Ashby, 1975; Fisher & Groce, 1990; Mishler, 1984) However, Tannen and Wallat (1986) investigated similar medical situations in which it didn't occur but rather information was negotiated. Recent researchers (e.g.
Mishler, 1984) of medical dialogue have warned of a bias towards the doctor as dominant because the patient’s speech was not closely investigated. Fisher and Groce (1990) observed patients' topic control by adding explanations to answers to doctors’ requests as a strategy for entering information into the talk.

Clark and Wilkes-Gibbs (1986) and Isaacs and Clark (1987) found that through a directed matching task that information was able to be negotiated between experts and novices through the strategic use of referents and that these were mutually exchanged over the interaction with an apparent goal of maximum efficiency. That is, subjects assessed and adjusted to their partner’s demonstrated expertise level within the talk itself.

The evidence of negotiation and adjustment to expertise levels suggest that perhaps the asymmetry of doctor-patient consultations is unique to it. The diagnosis involved in doctor-patient consultations would be a long series of question-answer pairs initiated by the doctor. (Byrne & Long, 1976; Heath, 1986) As control of turn in question-answer pairs returns to initiator, this would make such interactions naturally asymmetrical. Therefore, this rigidly dominant expert might not be typical of consultative interactions in general.

So, the stereotype of the dominant expert must be questioned. Roles may simply be used when convenient for the management of the interaction rather than absolutely determining the action. (Strong, 1979) Silverman (1987) found that patients could question the doctor’s right to ask "inappropriate" questions. (p.31) In addition, dominance of the expert cannot be judged by the layman’s absence from the negotiation of the solution because he/she may simply choose to avoid the responsibilities of dealing with a problem when someone else could. (see e.g. Silverman, 1987; Zimmerman, 1984)
1.5. EXPERT SYSTEMS

Expert systems have great potential but to date this has not been fully realized. (Coombs & Alty, 1984; Frohlich & Luff, 1990; Kidd, 1985) Perhaps lessons about the structure of human-human consultations could be used to improve expert systems interfaces. Examination of expert systems interfaces may give an indication of deficiencies in the structure of the human-computer consultative interaction and in its overall accomplishment.

User communication with many expert systems has been curtailed largely through the employment of restrictive and inadequate dialogues. (Coombs & Alty, 1984; Kidd, 1985) Typically, communication is through a series of rigid menus limiting the user’s ability to present the query to a particular set of options. Kidd (1985) noted that slow and inflexible dialogues made the achievement of certain types of tasks, e.g. troubleshooting, extremely difficult for users because they were prevented from freely and quickly volunteering information.

Users were also hindered from communicating with the computer during the solution. Many systems do not provide enough information upfront for adequate explanations of the solution. (Coombs & Alty, 1984; Frohlich & Luff, 1990; Kidd, 1985) Yet, typically users are prevented from interrupting the solution in order to request additional explanations or to provide relevant information out of sequence. (Elsom-Cook, 1985) The user, therefore, would seem to require a more active role and increased access to communicate with the expert system.

1.6. SUMMARY

The consultation, a potentially valuable occasion of talk, was investigated for a possible consistent structure across situations. Specifically, a description was undertaken of a consistent pattern to the structure of consultations, its characteristics and its possible specific achievements. Other investigations of the structure of the consultative process
were found to be, in general, esoteric confined to one topic domain or even one circumstance, precluding any generalization across situation. In addition, small samples and unvalidated observational analyses made the results questionable and more rigorous testing desirable.

The literature on conversational analysis in general was reviewed with particular regard to the study of a possible consistent pattern to the structure of consultation. Consistent temporal patterns have been found, across individuals, using the simple units of sound-silence. However, a thorough explanation of these patterns was not forthcoming and they may be too subtle for a distinct description of any pattern to consultative structure.

For higher level explanations, the turn and turn exchange, salient features of conversation, have been studied in various forms. Rules of turn exchange, proposed by Duncan (1972, 1973) and Sacks et al. (1978), could be described across modality and individual differences which makes these types of rules viable in a generalized description across situation. Studies of turn exchange "signals" indicated the importance of higher-level semantic and syntactic characteristics over behaviours. Consultations' concern with information transfer would appear to support the importance of the semantic aspect of this talk in a structural description. Yet, the multiple forms of an utterance had to be categorized in order to generalize across situation. One widely-used method was by speaker intention (Austin, 1962; Bales, 1950; Labov & Fanshel, 1977; Searle, 1979; Sinclair & Coulthard, 1975) but these categorizations were largely devised intuitively by the analysts and their validity was unclear. In addition, the question of whether a categorization should include social considerations, e.g. Labov and Fanshel's (1977) shared and unshared knowledge, and how these could be reliably determined was apt for consultations involving the assumed differences in expertise between participants. Additionally, these studies all indicated sequential relationships between utterances at the turn-exchange level.
The features of Conversational Analysis, e.g. adjacency pairs, were also able to overcome the multiple forms of utterance-types and so, were highly generalizable. Certain adjacency pairs outlined, e.g. question-answer, were ideal for situation-free structural description of consultation; the development of adjacency pairs from the overt displays of the individual participants supported their validity. However, specific delineation of the forms was not made and so, reliably identifying them in the potentially distinct talk of consultation was not clear. Turn size, typically minimized by the demands of the turn taking rules, may be subjected to restrictions either from a predetermined pre-allocation thought to occur in particular situations (Sacks et al, 1978) or due to violations of preferences (Pomerantz, 1984) or assumptions in content, especially relevant to consultation requests (Sharrock & Turner, 1978; Zimmerman, 1984). Consultation could certainly be subject to all three restrictions on turn allocation and size indicating that the situation might dictate the structure.

More global influences on structure were examined in relation to consultations. Topic would seem to be constrained in consultations which may be assisted through turn control of the typical question-answer series or through topic pre-allocation to roles. The stereotype of asymmetrical role involvement was not overwhelmingly supported by the literature. Instead it appeared that the negotiation of the task itself is the overriding structural influence. This was also indicated from an examination of the deficiencies of human-computer interfaces of expert systems.

1.7. OBJECTIVES

An investigation was made with the aim of a valid description to the consistent structure of the consultation across situations. What must participants know and follow about consultations in order to accomplish one effectively? How do they indicate that they are performing them? Do the participants use conventional conversational features to accomplish these tasks? Do any distinctive features of consultation stem directly from
its particular task of query satisfaction or are other factors involved? The thesis attempted to answer these questions more rigourously than previous investigations by using a large number of naturally-occurring consultations dealing with a number of expertise domains analysed by a variety of different methods.

Due to the largely intuitive descriptions of consultative structure in the literature, the thesis necessarily looked at a variety of methods with which to verify suggested structures to consultations. The first study, described in Chapter 2, consisted of detailed analyses of a sample of radio query programme interactions using methodologies of Turn temporal behaviours, modelling of intentional acts, and Conversational Analysis. The specific types of information about structure resulting from each of these analyses was summarized. Insights into the benefits of each methodology from the first study were used to devise two types of analysis that were carried out on a large sample of radio phone-in material. The reliability of objective measures and the powerful predictability of models were combined in a model of turn source and relative length. The development and fit was described in Chapter 3. Conventional phrases found in consultations were investigated using cluster analyses of non-topic-specific words. The cluster analyses and verification of the result were reported in Chapter 4. In addition, the results of these two analyses were applied to the study of unchaired dyadic telephone interactions to a computer advisory service in Chapter 5. In Chapter 6, the existence of formal features in this type of interaction was assessed with attention to roles and constrained structure. In the final chapter, conclusions about the structure of consultative interactions and future analysis of this interaction type were reached and discussed.

The transcription notation of all the material was based on the conventions developed by Jefferson. (see Appendix 1) The level of transcribed variables encompassed phonetic and gross paralinguistic aspects and above. Paralinguistic activities, for example, included intonation, emphasis, and relative speed and loudness. The durations of pauses were estimated by the analyst at three levels. Inhalations,
laughter and other non-linguistic sounds were described symbolically or verbally. All transcriptions were made before either the experimental hypotheses or analytical tests were formalized.
2.1. INTRODUCTION

The literature review of Chapter 1 explored what unit would be beneficial in a structural analysis of the course of an interaction. A variety of units have been considered including sound-silence durations, intentional acts, turn and turn sequences and the global influences of rational principles, social considerations and situation formality. It was reported that turn and turn exchange were considered to be essential elements of the organization of conversation. (Duncan, 1972; 1973; Duncan & Fiske, 1977; Feldstein & Welkowitz, 1978; Jaffe & Feldstein, 1970; Kendon, 1967; Moerman, 1972; Sacks, et al. 1978; Yngve, 1970; Zimmerman, 1984) Also, temporal patterns of sound-silence durations have been found in conversation. (Butterworth, 1975; Henderson et al., 1966; Jaffe & Feldstein, 1970) So, it was hypothesized that turn durations, as speech durations, might reveal structural patterns when considered in sequential position. Time measurements could be subjected to statistical tests, although usually the spontaneous and sequential nature of conversation makes application of these tests difficult.

Several studies (Duncan & Fiske, 1977; Orestrom, 1983; Schaffer 1983, 1984) suggested that higher-level semantic indicators played a primary role in determining turn exchange. So, it was proposed that concentration on semantic units would be useful for a structural analysis of consultations. Researchers such as Sinclair and Coulthard (1975; Coulthard & Brazil, 1979; Coulthard et al., 1981) and Labov and Fanshel (1977) categorized utterances by intention, rather than content, to overcome the multi-functionality of words and to allow generalization beyond individual interactions. The classification of utterances into act categories allowed modelling of the interaction in terms of patterns and possible hierarchies.

The most informative structural "unit" found by Sinclair and Coulthard (1975)
was actually a sequence of three acts. A fundamental sequencing rule, proposed by Labov and Fanshel (1977), required an obligation to respond to a request. Sequences of turns are salient units of structure with turns often linked in pairs. Conversational Analysis (CA) focuses on participants’ own display and negotiation of talk through sequences of turns. These sequences and their form are based on a proposed turn-taking mechanism which also explained some turn forms, e.g. multi-utterances. Because the Conversational Analysts recognize a wide range of individual relevancies, the analysis concentrates on the actual data. It is descriptive and no analytical decisions are made a priori, in contrast to categorization schemes. (Taylor & Cameron, 1987) The analyst identifies the participants’ own negotiation of an interaction’s structure, assumed to be displayed within the talk.

Which method reveals beneficial information when applied to the analysis of consultation structure? Three analyses, Turn-Time, Functional Acts, and CA, were undertaken with a sample of consultations and the results assessed for their description of the underlying interactive structure of consultations. Although generally criticism has been made concerning the above approaches individually (Roger & Bull, 1989; Taylor & Cameron, 1987), no comparison of these methods exists in regard to the structural analysis of one particular interaction type.

2.2. GENERAL METHOD

2.2.1. DESIGN

The six radio consultations underwent three different analyses: an analysis of turn duration and frequency (Turn-Time), a Functional Act analysis (Functional), and a descriptive CA analysis (CA). The results of each analysis were discussed with regard to the ability to explain and describe the consistent structure of these radio queries. Specifically, did the analysis answer the questions: is there a consistent structure to consultations, how is it exhibited, and what might it accomplish? After all three
analyses were completed, the results of each method were contrasted with the others. The object was to discover the method or methods which augmented a description of a general, content-free structure of consultations across varied situations and interactants.

2.2.2. MATERIAL

The material consisted of six complete query interactions from radio query programmes, involving approximately 4300 words. In these consultations, a novice asked one or more questions of an expert on either gardening or small businesses topics. Radio programmes were used because of the easy access, varied topics and clear delimiting time constraints. These were naturally-occurring consultations from well-known radio programmes; no experimental artifice was involved. Three interactions were transcribed from each of two programmes. Both programmes were recorded on Wednesday, 11 November 1987 in London.

Gardener's Question Time (GQ), a frequently-run query programme, was recorded on BBC Radio 4 at 10 am. Typically, participants from an audience were invited to ask gardening questions to a panel of experts in face-to-face interactions broadcast to a radio audience. Interactions GQ1-GQ3 were taken from this programme. These interactions involved one female and two male experts, a male chairman and one male and two female novices. Specifically, GQ1 involved a female novice with a female expert and also a male expert. In GQ2, the same female expert and a different male expert interacted with a female novice. The male expert from GQ1 and a male novice interacted in GQ3. The experts were designated by the Chairman in all cases except for the second expert of GQ1, who spoke without being prompted.

A programme hosted by Gloria Hunniford, normally a "chat" show, conducted a phone-in episode inviting questions to an expert on small businesses (SB). Interactions SB4-SB6 were taken from this programme which was heard on BBC Radio 2 at 2:05 pm. It involved one female expert, one female chairman and two female and one male
novices; the male novice appeared in SB6.

2.2.3. PROCEDURE

Recordings were made of Gardener's Question Time and Gloria Hunniford using a radio-cassette recorder. A initial review of the recordings was made to eliminate from consideration interactions with incomprehensible sections due to, for example, faulty phone lines. Three interactions of optimal technical quality were chosen from each programme.

First, a mainly orthographic transcription was made by hand for each interaction. This draft was corrected during a second review of the recordings. After transferring this transcription to computer, a printout was used to check the transcription against the recording.

At this point, paralinguistic activity and other details were added to the transcription using conventions developed by Jefferson (see Appendix 1). Briefly, this included indications of all extraneous linguistic sounds, e.g. inhalations, descriptions of recognizable non-linguistic sounds, e.g. clock chimes, and suggestions of tempo, stress, intonation and pause lengths. This procedure was done at least twice before editing the computer file. A final check of the transcription was made, again using a printed copy and the original recordings. The final transcriptions of each interaction appear in Appendix 2.

Each speaker was marked as either the Chairman (C) or the host of the show, a Layman (L), an Expert (E) or one of two Experts (E1 or E2). It should be noted that these labels were taken from the tasks suggested in the radio programme and were not, and should not be, prejudiced by any historical stereotypes of roles. The speech of each new speaker was started on a separate line; all the lines were numbered. Only after the transcriptions' completion were the procedures for each type of analysis specified and carried out.
2.3. TURN-TIME ANALYSIS

2.3.1. METHOD

In order to study major effects on structure, the behaviours chosen for this analysis were turn and simultaneous talk. These were also identifiable, observable and measurable behaviours. Turn was defined as a unit of talk by one speaker that made a meaningful contribution to the talk, i.e. not a back-channel, until another such unit was started by another speaker. Parts of the turn overlapped by the speech of another were still considered part of the whole turn; completely overlapped speech was not counted as a turn. Back-channels made by the "listener" were considered to be any one of the following:

1. minimal responses, e.g. "yeah", "umhm", "I see", "right", "okay"
2. brief comments, e.g. "sounds good", "oh I can believe it", "me too"
3. brief requests for clarification or repetition
4. brief restatements or repetitions of the speaker’s immediately prior thought
5. completions, or "fillers" of the speaker’s phrase to allow the speaker to continue. (Duncan, 1972, 1973; Yngve, 1970)

Simultaneous talk was also investigated because it is considered violatory in this speech culture (Jaffe & Feldstein, 1970) and its frequent occurrence could signify problems of turn exchange (Cook & Lalljee, 1972). Simultaneous talk was defined as an occurrence of speech overlapping the turn-holder’s speech, which was also a legitimate turn attempt, i.e. not back-channel speech or cut-off speech. This was regardless of whether it was entirely overlapped, e.g. GQ1 (111-112):

C Thank you for the question Mrs. Young
L [Thank you very much]
or only partially overlapped, e.g. GQ3 (12-14):

E And of course you bring them in yeah
L [And then I put them inside in the uh
greenhouse.

The study of behaviours according to their sequential position has been found to be far more useful than summed calculations (e.g., Duncan, 1972; Taylor & Cameron, 1987). In order to study the sequential changes of the behaviours in this study, because of the variations in total duration of the interactions, each interaction was divided into ten equal time sections according to its total duration. The decision to use ten sections was based on observation that such division would be large enough for meaningful measures but small enough to detect changes in interactional patterns.

The duration and frequency of turn and the frequency of simultaneous talk occurrence was examined within these sequential divisions; these were delineated for each programme type and within each role, i.e., Chairman, Layman and Expert. In addition, a trend analysis was carried out on the first, middle and last twenty-second periods for the two main roles of Layman and Expert; the Chairman role did not have sufficient time in talk during these periods to be useful to the analysis.

2.3.2. PROCEDURE

The total duration for interactions 1-6 were as follows: 218 seconds, 115, 83, 159, 225, 235, respectively. Each interaction was divided into ten equal temporal sections based on their individual duration. Therefore, the length of each temporal section for interactions 1-6 was 21.8 seconds, 11.5, 8.3, 15.9 22.5, 23.5, respectively. Percentages of total turn-time by role and programme per temporal division were calculated. Duration in seconds and frequency of turns by role and programme also were calculated for temporal division.
The amount of turn-time in the first, middle and last twenty seconds of each interaction was calculated for the two roles of Expert and Layman. Two trend analyses were performed investigating both linear and quadratic trends. A one-way Analysis of Variance (ANOVA) was performed with the variable of Role (either Expert or Layman) and the repeated measure of amount of seconds in turn for each twenty-second period.

In addition, the frequency of simultaneous speech events, or interruptions, was tabulated for each temporal division in each programme.

2.3.3. RESULTS

Mean percentages and standard deviations of total talk in each temporal division by role are given in Table 1 for the GQ programme and in Table 2 for the SB programme. Overall, the higher percentages of talk by Chairman and Layman occurred in the initial and final few divisions. Overwhelmingly, the Expert's highest percentages occurred consecutively in the middle divisions. For example, the mean turn-time percentages across both programmes in section 1 were 26% and 30% for C and L, but 0% for E; in section 7, they were 2% for both C and L, but 16% for E. Again in section 10, mean percentages of talk were 27% and 12% for C and L, but only 4% for E.

For each interaction, the percentages of time in talk for Chairman in each temporal section are shown in Figure 1 for GQ interactions and in Figure 2 for SB interactions. Similarly, Figures 3 and 4 chart the Layman role's talk percentages for GQ and SB interactions, respectively. Figures 5 and 6 show talk-time percentages for the Expert role in the GQ and SB interactions, respectively. In general, these figures revealed a general U-type curve for the Layman and Chairman and an inverse bell-shape for the Expert. More variability in the pattern occurred in the SB interactions than in the GQ interactions for each role. Specifically, this was manifested as more talk by both Layman and Chairman in the middle of the SB interactions.
Table 1. Mean Percentages and Standard Deviations of Turn-time per Temporal Division for GQ Interactions.

<table>
<thead>
<tr>
<th>Div.</th>
<th>C</th>
<th>L</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.7 (s.d.9.6)</td>
<td>45.1 (5.8)</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2</td>
<td>38.8 (22.9)</td>
<td>20.6 (17.8)</td>
<td>4.2 (6.7)</td>
</tr>
<tr>
<td>3</td>
<td>2.9 (5.0)</td>
<td>11.4 (10.4)</td>
<td>10.6 (2.2)</td>
</tr>
<tr>
<td>4</td>
<td>0.0 (0.0)</td>
<td>3.8 (6.6)</td>
<td>12.3 (2.0)</td>
</tr>
<tr>
<td>5</td>
<td>0.0 (0.0)</td>
<td>0.0 (0.0)</td>
<td>13.7 (0.4)</td>
</tr>
<tr>
<td>6</td>
<td>0.0 (0.0)</td>
<td>0.0 (0.0)</td>
<td>13.7 (0.4)</td>
</tr>
<tr>
<td>7</td>
<td>0.4 (0.8)</td>
<td>0.0 (0.0)</td>
<td>11.7 (0.4)</td>
</tr>
<tr>
<td>8</td>
<td>3.8 (6.5)</td>
<td>2.3 (4.0)</td>
<td>12.9 (1.8)</td>
</tr>
<tr>
<td>9</td>
<td>0.0 (0.0)</td>
<td>2.9 (5.1)</td>
<td>13.1 (1.4)</td>
</tr>
<tr>
<td>10</td>
<td>27.5 (16.9)</td>
<td>13.8 (17.4)</td>
<td>6.2 (5.6)</td>
</tr>
</tbody>
</table>
Table 2. **Mean Percentages and Standard Deviations of Turn-time per Temporal Division** for SB Interactions.

<table>
<thead>
<tr>
<th>Div.</th>
<th>C (s.d.)</th>
<th>L (s.d.)</th>
<th>E (s.d.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24.8 (5.7)</td>
<td>15.4 (0.6)</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2</td>
<td>1.6 (2.8)</td>
<td>16.6 (8.5)</td>
<td>5.3 (9.2)</td>
</tr>
<tr>
<td>3</td>
<td>0.0 (0.0)</td>
<td>9.7 (9.7)</td>
<td>11.4 (10.5)</td>
</tr>
<tr>
<td>4</td>
<td>5.9 (0.0)</td>
<td>14.1 (8.2)</td>
<td>8.0 (9.0)</td>
</tr>
<tr>
<td>5</td>
<td>7.9 (7.4)</td>
<td>16.0 (8.8)</td>
<td>6.3 (7.7)</td>
</tr>
<tr>
<td>6</td>
<td>6.3 (10.8)</td>
<td>13.6 (11.2)</td>
<td>10.7 (12.3)</td>
</tr>
<tr>
<td>7</td>
<td>3.1 (5.3)</td>
<td>3.4 (5.4)</td>
<td>19.4 (7.9)</td>
</tr>
<tr>
<td>8</td>
<td>6.7 (8.2)</td>
<td>0.4 (0.8)</td>
<td>20.5 (3.9)</td>
</tr>
<tr>
<td>9</td>
<td>17.4 (10.1)</td>
<td>0.3 (0.5)</td>
<td>17.2 (5.0)</td>
</tr>
<tr>
<td>10</td>
<td>25.9 (8.1)</td>
<td>10.4 (3.1)</td>
<td>1.2 (2.1)</td>
</tr>
</tbody>
</table>
Figure 4. Layman mean percentage of time in talk in SB interactions.

Figure 3. Layman mean percentage of time in talk in GG interactions.
Figure 5. Expert mean percentage of time in talk in GQ interactions.

Figure 6. Expert mean percentage of time in talk in SB interactions.
The means and standard deviations for the amount of time in turn for Layman
and Expert roles in the first, middle and last twenty-second periods of each interaction
were calculated and displayed in Table 3.

Table 3. Means and Standard deviations of Turn-time in the First, Middle and Last
Twenty Seconds for the Layman and Expert Roles.

<table>
<thead>
<tr>
<th>ROLE</th>
<th>First mean</th>
<th>s.d.</th>
<th>Mid mean</th>
<th>s.d.</th>
<th>Last mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAYMAN</td>
<td>14.0</td>
<td>2.56</td>
<td>4.28</td>
<td>6.08</td>
<td>6.65</td>
<td>5.10</td>
</tr>
<tr>
<td>EXPERT</td>
<td>.57</td>
<td>1.02</td>
<td>15.25</td>
<td>7.23</td>
<td>7.32</td>
<td>7.90</td>
</tr>
</tbody>
</table>

The ANOVA trend analysis of these turn-times resulted in significance for a
quadratic trend in the amount of Expert talk $F(1,10)=12.64$, $p<.01$; the linear trend was
not significant. The linear trend for the amount of Layman talk was significant
$F(1,10)=5.41$, $p<.05$ but the quadratic trend was not significant although it did approach
significance. With the small number of 6 subjects per role and some non-random
repetition of subjects in the Expert role, the validity of the results must be treated with
cautions.

The mean duration and number of turns for each role by programme is given in
Table 4 along with the percentage of time in turn overall for each role.
Table 4. Frequency, Mean duration and Percentage of Total Time of Turns for each Role by Programme.

<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>GQ</th>
<th>SB</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROLE</td>
<td>C</td>
<td>L</td>
</tr>
<tr>
<td>No. of Turns</td>
<td>5.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Mean Length</td>
<td>1.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Perc. in Turn</td>
<td>7.4</td>
<td>17.8</td>
</tr>
</tbody>
</table>

Differences between the two programmes included a higher average length of turn for the Expert role in the GQ programme; this may have been due to the use of second experts in the GQ programme whereas the SB programme had only one expert. Also, there were more turns overall in the SB interactions than in the GQ programme (SB=96; GQ=41); this outcome was found within all roles but most notably in the Layman role where, on average, 9.3 more turns occurred in the SB interactions.

Examining only role differences across all interactions, Experts generated longer turns than Laymen with 21.1 seconds on average as compared to 5.5 seconds; the Layman role, with 5.5 seconds, had longer turns than Chairman role at 2.2 seconds. Both Chairman and Layman had more turns than the Expert role, with mean numbers of 8.5 and 9.4 respectively as compared to the average 5 turns for Expert. So, the Expert had the fewest number of turns yet showed the highest average turn length out of all the roles; this finding was slightly more pronounced in the GQ programme.

There were 16 interruptions overall: 5 in section three, 3 in section six, and 8 in section ten. Thirteen of these (81%) were made by the Layman. Eight interruptions occurred in each programme but those occurring in section six were all from the SB programme. Only twelve interruptions were also full turns, out of 137 total turns in all
2.3.4. DISCUSSION

From the trend analyses and the graphs, there is evidence of a largely consistent sequential pattern of turns for each participant role. There were two patterns, nearly opposite. The Expert spoke mostly in the middle of the interaction in few turns of relatively long duration. Both Layman and Chairman spoke almost exclusively at the beginning and end of the interaction, mostly in short turns although the Layman had a few turns of longer duration. Both these roles took more turns than the Expert. The Layman spoke more in the beginning than in the end in a linear decline. So, the interaction progressed with, initially, Chairman and Layman in many short turns, with the Layman adding a few longer turns. This was followed by the Expert using fewer, longer turns with a return then to Chairman and Layman engaged in frequent short turns. This configuration recurred across all the interactions encouraging closer investigation of a sequential pattern, although further study may be unproductive with this analysis.

The Expert's characteristic of few long turns was found more concretely in the GQ programme rather than SB interactions, despite different individuals within the GQ Expert role. Also, the GQ programme had fewer turns in each role and more stable patterns across interactions than the SB programme. However, no reason for this difference between programmes was forthcoming from this type of analysis other than some conjecture about the more practised format of the GQ programme. Solely a query show in contrast to the SB "chat" programme, the GQ programme may have had a more well-known and pre-fixed format. Nevertheless, the programmes were not radically different in the measures studied and encouraged continued exploration for a common structure for this type of interaction.

Comparatively few turn exchanges took place with simultaneous talk. Interruptions mostly took place at the end and in section 3 with interruptions in the
middle section during the SB programme. Speculatively, these sections may be parts of the interaction where turn exchange is more problematic or exchange is greatly expected and therefore, over-anticipated. The exact reasons for this and for the prevalence of interruptions by the Layman, however, cannot be gathered from this type of analysis because no consideration is made of content.

2.3.5. ASSESSMENT OF METHOD

How many of the questions does the Turn-Time analysis answer? Most clearly, it answered the question of whether a common structure exists. A distinctive and consistent pattern could be seen via this method and was statistically supported by the analysis. A general pattern of when participants were likely to speak, for how long and at what general rate of turn change was revealed. No more precise identification of the stages of the pattern could be determined because the temporal "standardizing" used to isolate the sequential pattern was arbitrary and individual interactions accomplished in different times were likely to differ in measures of time. Deciding what segmentation would be optimal was not clear with this type of analysis.

So, the question of what the structure consists of was only somewhat answered. There was an indication that certain stages of the interactions could be characterized by speaker role and turn features. For example, the interaction beginning and end were characterized by Chairman and Layman short, frequent turns. The middle of the consultation contained few long turns by the Expert. However, description could only be made with the behaviours studied which were not necessarily the ideal ones. Therefore, the Turn-time analysis allowed only a general description of a consistent pattern of the structure using only the turn behaviours chosen a priori.

The Turn-Time analysis added little to an explanation for what consultative structure might accomplish. It couldn't explain, for example, the increased occurrence of simultaneous talk in certain sections nor differences between the programmes. Also,
no explanation of specifically how the participants were accomplishing this particular pattern was immediately evident.

2.4. FUNCTIONAL ANALYSIS

2.4.1. METHOD

Coding utterances as functional acts through a classification scheme then permits investigation of the sequential patterns and hierarchies of these acts within and across interactions. The six consultations in the sample were segmented and coded according to a classification scheme described by Danziger (1976). He developed a general, flexible scheme to deal with diverse situation types in contrast to the typical schemes which were esoteric and couldn't be easily generalized to other situations without adaptation (Taylor & Cameron, 1987).

Danziger (1976)'s scheme was designed to deal with all situations in a complete manner and to be easily and reliably employed by untrained coders. Four major categories were proposed: Informative, Evaluation, Request and Justification. These categories could be divided still further depending on the particular analysis. The units of the scheme were basically independent clauses although fully defined as "meaningful clauses" expressing a single idea.

Units are classified into the four categories of the scheme by an exhaustive series of binary decisions based on the category definitions. If an utterance served two functions, the coder was directed to use the context in order to decide and use only the primary function. Although the scheme hasn't been widely applied, it has been extensively tested in a series of studies by Greenglass (1971a; 1971b; 1972) showing a high reliability across raters for classification into the various categories. The resulting acts were examined for sequential patterns across interactions as well as for a possible hierarchical structure and overall framework.
2.4.2. PROCEDURE

First, the interactions were divided into units of analysis according to Danziger (1976). Roughly, the criteria for a unit was an independent clause. Specifically, the criteria were any of the following:

1. Clauses

An independent clause by itself or along with one or more dependent clauses was considered a unit.

   a. A unit included the dependent clause with its independent clause even if a different utterance separated them; in this case, the dependent clause would usually elaborate or explain the independent clause.

   b. Dependent clauses connected to an independent clause could be distinguished by an initial subordinating conjunction or pronouns, e.g. "who", "which", "that", "if", "when". Independent clauses connected to other independent clauses was usually preceded by a coordinating conjunction or a conjunctive adverb, e.g. "and", "but", "or", "because", "so that", "for".

2. False starts

Words not conveying the speaker's meaning and/or incomplete in meaning were not counted as utterances, e.g. "well uh".

3. Interruptions

   a. If one independent clause was interrupted by another independent clause (either from the speaker or the listener), each was scored as a separate unit.

   b. A dependent clause alone may be a unit if it occurred after an interruption that was preceded by a non-utterance; the non-utterance would not be counted as a unit.

4. Repetitions

A repetition was not counted as a separate unit if it contained exactly the same words and intonation and no unit intervened between repetitions.
5. Single words

Single words or combinations of words without clear subject and predicate were counted as units only if they seemed to be full units of conversation.

6. Acknowledgements

Affirmations, negations and confirmations, e.g. "yes", "no", "that's right", were typically counted as units. However, if there was an immediate continuation to explain or to elaborate, or if there was a preceding statement which took this as a tag question, then they were not counted as separate units. (p. 200-203)

After the segmentation, each unit was categorized as Informative, Request, Evaluation, or Justification; categorization was done twice to ensure greater accuracy. First, a decision was made about whether the relevant unit was objective, i.e. Informative, or non-objective. An objective unit conveys a neutral item of information about the external world. There should be no interpretation or justification which would be signalled by phrases such as "it might be", or by adjectives like "pretty". It does not contain any expression of doubt nor refer to the subjective state of the speaker. It typically follows a request for information and may be a narrative objectively recalling an event. Therefore, the speaker must be in a position to know the fact.

If the unit was non-objective, and so not classified as Informative, the coder must then decide whether it is a Request or an assertion. A Request requires a response from the addressee; this includes all questions, commands and all units placing requirements on the listener. An assertion expresses an opinion or feeling.

Assertions were then further classified as either Evaluations or Justifications. Evaluations are any unit that refer to a person's preferences, approvals or certainties. They include phrases like "correct", "I don't know", "I like this one". Justifications are attempts to justify any non-objective response in order to make it more creditable. They are typically introduced by the connectives "but", "because", "so", "well", "if", and "therefore".
This resulted in four Act Types: request (r), evaluation (e), informative (i), justification (j). Acts were also considered in connection with their speaker: Chairman (C), Layman (L) or Expert (E). For example, for the Chairman, the acts would then be Chairman-request (Cr), Chairman-Evaluation (Ce), Chairman-Informative (Ci), and Chairman-Justification (Cj).

An example of segmentation of units and the coding of acts from a section of Interaction SB6 was outlined below. Units were separated here and this does not signify any actual break in the talk. In this example, the initial Request was a question and so required a response of an answer. The next two acts were simply facts of information. The Evaluation was so coded because the phrases "as I understand it" and "the advantage" indicated an interpretation or opinion. The Justification statement attempted to back up this favourable evaluation.

<table>
<thead>
<tr>
<th>ACT</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr</td>
<td>C um why uh I mean any idea why that is Sarah</td>
</tr>
<tr>
<td>Ei</td>
<td>E um th-the it was a scheme bought out about a year ago umm</td>
</tr>
<tr>
<td>Ei</td>
<td>a-and the advantage of the scheme is that you (.) know exactly what it’s going to cost you</td>
</tr>
<tr>
<td>Ei</td>
<td>whereas um on the normal sort of basis which is w-what occurred before and still occurs with some b-banks, is at the end of the um month or the quarter or however often your charges are are drawn up you don’t really know um the basis on how the charges are made</td>
</tr>
<tr>
<td>Ee</td>
<td>and um the standard business tariff as I understand it th-the advantage is that you know exactly what it’s going to cost you</td>
</tr>
<tr>
<td>Ej</td>
<td>so you know where you sta:nd .hhh</td>
</tr>
</tbody>
</table>

Firstly, the data was examined as simply the Act-type alone without regard to the speaker. The distribution of Act-types across the sequence of an interaction was examined generally. Then the Acts were considered along with their speaker. These were also calculated for frequency.
Acts in sequence were examined for recurring series, possible hierarchies and sequentially-based patterns; a general model was developed.

2.4.3. RESULTS

The frequency of each Act Type in each third of the GQ interactions was given in Table 5. Request Acts tended to occur in the beginning of the interaction but less frequently in the middle and end. For example, in interaction GQ1, a Request Act occurred three times in lines 1-10 but then not again until once each in lines 71 and 103, out of a total of 113 lines. Evaluation Acts were fairly evenly dispersed throughout the interaction but tended to occur in the last two-thirds; Informative Acts tended to occur more in the beginning and end.

Table 5. Frequency of Act Type in each Third of the GQ interactions.

<table>
<thead>
<tr>
<th>ACT TYPE</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request</td>
<td>14</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Informative</td>
<td>17</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Evaluation</td>
<td>12</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Justification</td>
<td>1</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

Considering Acts with their source role, Table 6 displays the counts of Act Type by Role Type from all the interactions.
Table 6. Frequency of Act Type by Role in the GQ and SB Programmes.

<table>
<thead>
<tr>
<th>ACT TYPE</th>
<th>Chairman</th>
<th>Layman</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request</td>
<td>40</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Informative</td>
<td>10</td>
<td>53</td>
<td>38</td>
</tr>
<tr>
<td>Evaluation</td>
<td>24</td>
<td>55</td>
<td>75</td>
</tr>
<tr>
<td>Justification</td>
<td>0</td>
<td>8</td>
<td>24</td>
</tr>
</tbody>
</table>

The majority of Chairman acts were Requests. The Layman's prevalent Act Type was evenly divided between Informatives and Evaluations. The Expert mostly used Evaluation Acts and, to a slightly lesser extent, Informative Acts. This last result was more pronounced in the GQ programme where the Expert role made 38 Evaluation Acts and 20 Informative Acts in contrast to 10 Justification Acts and only 7 Request Acts.

Looking at patterns across the interactions, one general model could be devised using the following notation:

[] possible repetition,
() optional,
/ either or,

and the following abbreviations:

Chairman C, Layman L, Expert E,
Request r, Evaluation e,
Informative i, Justification j.

Given that the Request Act required a response of either an action, i.e. a complex verbal task, or of information, the entire sequential pattern was separated into sequences of acts involving a Request and its response.
The formula then and its stages would be:

1. \((Ci + [Cr + Le/i]) +\)
2. \(C(e)r + Lir +\)
3. \((Cier) + [ (E(ei)r + Le/i ) + Eiej] +\)
4. \((Cr + Liej) +\)
5. \( ( [C/Lr + [ (E(ei)r + Le/i ) + Eiej] ) +\)
6. \([Ceir + Leij] + (Cr/e(i))\)

One concession in order to simplify the pattern was that the Acts in each term, i.e. bounded by a plus sign, could be in any order and occur any number of times. The ratio and percentage of the total Acts in each stage that complied with the model for each programme are shown in Table 7. In addition, the relevant line numbers from interaction SB6 for each stage are listed as an example.

Table 7. Ratio and Percentage of Model-fitting Acts in Each Stage by Programme and Examples from Interaction SB6.

<table>
<thead>
<tr>
<th>Stage</th>
<th>GQ Programme</th>
<th>SB Programme</th>
<th>SB6 Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (optional)</td>
<td>0/0</td>
<td>20/25 (80%)</td>
<td>1-13</td>
</tr>
<tr>
<td>2</td>
<td>14/15 (93%)</td>
<td>20/34 (59%)</td>
<td>14-21</td>
</tr>
<tr>
<td>3</td>
<td>67/69 (97%)</td>
<td>44/64 (69%)</td>
<td>22-51</td>
</tr>
<tr>
<td>4 (optional)</td>
<td>0/0</td>
<td>11/20 (55%)</td>
<td>52-64</td>
</tr>
<tr>
<td>5 (optional)</td>
<td>24/24 (100%)</td>
<td>54/55 (98%)</td>
<td>65-80</td>
</tr>
<tr>
<td>6</td>
<td>19/20 (95%)</td>
<td>36/36 (100%)</td>
<td>81-92</td>
</tr>
</tbody>
</table>

Stage 1 was an informative statement by the Chairman followed by a possibly recurring request for information of the Layman. It only occurred in the three SB
interactions. The request recurred twice in SB4 and five times in SB6. Although only 80% of the acts were shown to obey the model, this result was biased due to interaction SB5 which had only 3 out of its 5 acts valid.

Stage 2 involved the Chairman making a request of Layman, sometimes after an evaluation; the Layman responded with an informative statement and a request of Expert. This sequence occurred in all interactions, with a recurrence in SB4, although the Chairman’s preceding evaluation only occurred in the SB interactions. Again the low percentage of "valid" acts for the SB programme in Table 7 was due to only 6 valid acts out of 18 in interaction SB5; good compliance though was found with the GQ interactions.

Initially, in stage 3, optional Chairman evaluations and requests of the Expert were found in all the GQ interactions and in SB5. Then, a possibly recurring sequence of the Expert requesting information of Layman transpired in 5 out of the 6 interactions. This recurred once in GQ2, GQ3 and SB4, twice in SB6 and three times in SB5. The one mandatory sequence in this stage was one of Expert information, evaluation and/or justification. No requests occurred in this term. However, Li- beginning sequences did occur within this sequence in interactions GQ1 and SB6 (lines 41-54). The comparatively poor compliance of the SB programme in this stage could be attributed to the Expert Informative, Evaluation, and/or Justification sequence in which SB4 only had 5 out of 9 conforming acts, SB5 had 9/14 and SB6 had 4/15. The GQ interactions fit the model fairly well.

Stage 4 was optional request by the Chairman that resulted in Layman informative, evaluative and justificatory acts. Only the SB interactions contained stage 4. However, interaction SB6 had only 4 out of 12 acts which obeyed the model.

In Stage 5, the Chairman or the Layman could optionally request the same sequence found in Stage 3 consisting of optional Expert request and mandatory Expert information and evaluation. Stage 5 was found in 5 out of 6 interactions and recurred
once in SB5 and SB6. All interactions complied well with the model at this stage.

The last stage was obligatory and usually repeated. Chairman Acts of either Request, Evaluation and/or Informative initiated the stage followed by the Layman performing an Informative, Evaluation and/or Justification Act. In addition, an optional follow-up may occur with a request or evaluation by the Chairman possibly with information. This stage followed the model closely in all interactions.

2.4.4. DISCUSSION

The interactions could be well modelled with, on average, 82% success as a series of sections characterized as optional or obligatory, and recurring or not. Stage 4 had the lowest percentage of compliance with 55% and stage 5 had the highest with 99% followed closely by stage 6 with 98%. However, only by going back from the categorization scheme to the initial transcripts and interpreting the full function of these stages could they be fully understood.

Looking at the initial transcripts, it could be seen that stage 1 was an introduction, greeting and perhaps introductory talk between Chairman and Layman. For example, in SB4 (lines 1-4):

C Marion Tapp * is on the line from Weston-Super-Mare, G’d afternoon
Marion
L Good afternoon
C I suppose it is coming down in stair rods with you in Weston is it?
L =Oh absolutely yes

Because the stage only appeared in the SB programme, it probably wasn’t a necessary part of the interactions although it may have appeared in a different form in the GQ interactions. However, this cannot be precisely determined from this analysis.

Stage 2 was a prompt by the Chairman for the Layman to then ask the query. An optional Evaluation was an acknowledgement of the preceding talk. From Interaction SB4 (lines 5-7), an example of this stage is given below:
C: Mis’rable day<Anyway glad you called in, * so what’s your question.
L: The question is father and son * are in business together? * and the
son gets married .hh and the wife joins in the business. (pause) Do they
need a partnership agreement.

Atypically, in SB5, a number of Evaluation and Justification Acts occurred in an
unusually lengthy section whereas a Request Act didn’t occur. A Request Act may be
essential for this section and the SB5 section was lengthy in anticipation of it.

In Stage 3, the Expert typically gave a solution sometimes after a Chairman
prompt and/or Expert questions of the Layman. The Li- sequences found in some of
the interactions were offers of additional information that the Expert might need. One
example of this was in SB6 (lines 22'-47):

E I think you have a word with your bank manager * and see if you
can go back to your old basis if you if you really w- * have worked it
all out and you find it’s going to be much more expensive .hh um I I
suspect that your bank manager actually thought he was probably doing
you a favour in putting you on to this new scheme because for some
people i::s i- * it is it can be advantage because you do know what it’s
going to cost you .hm um so
L: [yes I have actually been to the bank manager=
E: [right
L =and I uh I’ve got nowhere. He says um well that’s what he’s
going to do and that’ll be that .hh um * and he agreed wi’m me it
E: [((sigh))
L: would be a forty percent increase

Stage 4 contained Chairman follow-up questions of the Layman with the Layman
responding. In Stage 5, the Chairman or Layman asked a second question or follow-up
question of Expert. In GQ1 and GQ2, a request was made for a second expert’s
solution.

Stage 6, at the end of the interaction, started with the Chairman moving to
interactive talk with the Layman often by a direct question request for Layman’s
satisfaction or a summation of the solution. For example, in GQ2 (45'-47):

C: Does that help=
L: [Thank you
L: Yes that’ll be very useful
As seen from Tables 5 and 6, information from the Layman and Expert appeared in the beginning and end of the interaction because information was first exchanged in order to outline the problem's background and then given in the solution's directions or repairs. Evaluations were found in the latter two-thirds of the interaction when opinions were given in support of the solution. The Request Act appeared mostly in the beginning probably because most of the questions were asked here including the opening general-interest talk, the query and any prompts for action. The Chairman used mostly request Acts often in the form of requests for action, e.g. query prompt.

2.4.5. ASSESSMENT OF METHOD

The question of the existence of a structural pattern seemed to be positively answered by the successful summarization of patterns into a model. This type of analysis would also allow further reliable demonstration of a pattern, through chain analysis for example. However, the exact sequence of acts had been greatly simplified in the formula and therefore, it was far from a completely precise description of the pattern. Many variations of acts within a turn can accomplish the same thing; a larger unit may be beneficial.

Does this method of analysis reveal what the pattern might consist of? Before this question could be answered an examination of the initial transcripts was necessary. Alternatively, an increasingly specific classification scheme might have helped, although this would be in conflict with the parsimony needed for the development of a model. In any case, the pattern was describable only in terms of the categories devised. It cannot be clear whether these categories were even valid in terms of what the participants actually intended. Some types of utterances, e.g. greeting, did not fit well into the scheme's categories. In addition, categories represented many different types of speech. For example, the Request category contained questions, greetings/farewells, and prompts, e.g. "first question please" (GQ1, line 1). In addition, similar sequences,
e.g. the Cr + Li/e sequences, represented different stages and could only be distinguished by establishing sequential position. For example, in Interaction SB6 (lines 57-64), Cr Li/Le would be Stage 5 except that a Cr Ei section followed. Therefore, although the contents of the stages could be described, the validity of the description would only be as good as that of the classification scheme.

What might this structure accomplish? It appeared that this question could not be fully answered by this analysis, despite intuitive labels for the stages, e.g. introduction, query, solution, possible follow-up questions and closing talk. Why these stages had their particular structure is not altogether clear. For example, why should closing talk be a particular recurrence of Chairman Request/Informative/Evaluation Act followed by Informative/Evaluation/Justification Act by the Layman to end with a final Chairman act? In addition, what optional stages of the model accomplished, especially those that occurred in only one programme, could not be definitively explained. Interactions that did not fit the model well, e.g. SB5, also could not be explained, although they could be identified, because precise content of the talk was not considered.

2.5. CONVERSATIONAL ANALYSIS (CA)

2.5.1. METHOD

The turn mechanism is the basis for many of the features described by Conversational Analysts and conventionally used by conversationalists. Chapter 1 detailed the turn mechanism and its "turn-relevance" place (TRP) which potentially allows turn exchange, and, therefore, the speaker’s loss of turn at each projectably complete unit. So, the TRP exerts pressure on the speaker to either complete all the information within a unit or to override the mechanism. (Schegloff, 1982) Conventional features specifically designed to influence the outcome of the TRP are multi-utterances and adjacency pairs. In addition, unusual or aberrant turns can be identified by their apparent "violation" of the TRP pressure.
Multi-utterances are turns by a speaker of more than one unit that can be projected as complete by listeners. They should be pre-announced in order to suspend the TRP; the topic should be then "wrapped-up" or explicitly finished in order to signal the end of TRP suspension. An adjacency pair's first utterance allows the speaker "control" beyond the turn to constrain the position and form of the next-speaker's utterance; floor then usually returns to the first speaker. The minimal turn pressure also reveals aberrant structures of lengthy turns that fail to fall within the TRP unit due to necessary explanations, or "accountings", of the unexpected content.

These conventional sequences, previously identified by CA, and other evidence of participant organization of the conversation was the basis for this analysis. A global description of common characteristics was made and then, individual interactions were examined in detail with relation to their own particular sequences and negotiation.

2.5.2. PROCEDURE

Each interaction was examined and described in detail with reference to the turn mechanism's resulting features, i.e. multi-utterances and the adjacency pairs of greeting exchange, question-answer and pre-closing and closing exchanges. Their identifying characteristics are outlined below.

Multi-utterances are lengthy turns of more than one "complete unit". They usually have an initial pre-announcement phrase, e.g. "I have two points..." initially. In addition, "rush-through" techniques of accelerated speech, breath intake, and/or syntactic fillers at a potential TRP may be noticeable. Multi-utterances usually end with some form of topic "wrap-up", which is a completion of the turn's topic or function by a summation or repetition. (Schegloff, 1982)

Types of adjacency pairs that can be expected in these interactions are opening exchange, question-answer, and closing exchanges. Parts of the exchange, especially the first part, must necessarily be identifiable to the other next-speaker either by
conventional words, syntax, or sequential position in the interaction. (Schegloff & Sacks, 1973) The opening exchange usually starts the interaction and may include conventional terms such as "hello". There should also be evidence of identification of the speakers in a manner tailored to the expected recognition level of the participants.

The question part of a Question-answer pair can usually be identified by syntax, question words, e.g. "why", or intonation. The answer is then immediately relevant and, as reported in Chapter 1, anything that occurs next will be viewed as relevant to the answer process. This may be another question and answer before the final answer, an "insertion sequence", in order to gain further relevant information.

As outlined in Chapter 1, the recursive nature of the turn mechanism necessitates a pre-closing adjacency pair in order to end the interaction. This must be proposed and accepted before a final closing exchange stops the talk. The pre-closing may be aborted or extended in order to add last-minute talk. In general, the first part of the pre-closing takes up a turn without initiating a new topic where one would be relevant. Pre-closing can take the forms of:

1. "topic-independent" fillers, e.g. "well", "okay"
2. closing-relevant topics, e.g request satisfaction, making arrangements, or complaint remedy
3. topic "wrap-up", e.g. formulation or summation,
4. repetition of previous material e.g. the reason for conversation
5. conventional closing statements, e.g. "thank you".

The closing exchange itself should be the last talk accomplished and usually includes conventional phrases, such as "good-bye", "thank you". 
2.5.3. RESULTS

2.5.3.1. Opening Exchange Adjacency Pair

A standard opening for non-face-to-face interactions accomplishes identification and recognition as well as opening channels. (Schegloff, 1979) In the SB interactions, the Chairman first announced the Layman's name before starting a typical greeting exchange. In the following example, the Chairman identified and demonstrated recognition of the caller before the exchange was then completed with a conventional greeting phrase, "good afternoon".

C Marion Tapp * is on the line from We:ston-Super-Mare, G'd afternoon
Marion
L Good afternoon (SB4, 1-2)

The opening was even more simply accomplished in the GQ interactions. The Chairman prompted the Layman to speak by immediately calling for the query. The Layman then completed the exchange with a self-recognitional, i.e., stating his/her own name. For example, in GQ1 (1-2): "C First question, please. L Beryl Young...". This fulfilled the exchange requirement of identification and recognition (Schegloff, 1979).

2.5.3.2. First Topic

The primary topic is "reportable" as "news" in a description of the conversation; it is the reason the conversation. It is usually the first topic but not always. In the GQ programme, the first topic was always the primary topic. The Layman in a GQ interaction immediately started the query, the primary topic, as the initial topic with only a pause separating the end of the opening exchange and the beginning of the question.

In the SB interactions, however, the first topic was not the primary topic. In contrast to the GQ Chairman, the Chairman in the SB programme retained the speaking turn after the greeting exchange and initiated a first topic of general interest before later prompting the Layman to start the primary topic. The resulting topic change was often
signalled by a topic shift marker, e.g., "anyway" in Interaction SB4 (5°):

C Mis’rable day< Anyway glad you called in, * so what’s your question.

Interaction SB5’s opening exchange, however, was interrupted by a three-turn correction sequence, i.e. repair initiation, repair, acknowledgement, of the Layman’s name. (lines 2-4) After the Chairman identified the Layman in the first part of the greeting, the Layman initiated a repair of her name, which the Chairman corrected. The second part of greeting was never made but rather the Chairman immediately requested the Layman’s question. (lines 6-7)

2.5.3.3. Question

The question, or query, was a multi-utterance in these consultations. The initial utterance in the majority of the interactions was a general background statement that introduced the topic of the question. However, in GQ3, the initial utterance contained the query itself but expressed vaguely, using the phrase "good results":

L Could the panel tell me why I never get good results from freesias. (2-3)

The Layman in interaction SB4 directly pre-announced the multi-utterance with the phrase "The question is...", before adding a series of facts and the question (9-13). Therefore, "pre-announcing" the query simply involved not providing the integral information in the first statement. A "wrapping-up" of the multi-utterance to close the turn was often accomplished by simply the question form itself. In GQ2 and SB6, the "wrap-up" was the specific query. For instance, in GQ2 (2-5):

L Mrs Judith Wilson * We have a small concrete lined pond (. ) inhabited by a number of goldfish: where a variety of water plants thrive when the blanket weed doesn’t choke them. hhh when would be the best time of year to clear the bottom of the pond of dead and decaying leaves
Both GQ1 and GQ3 contained a summation or formulation sentence at the end of the multi-utterance. For example, in GQ1 (2-5):

L Beryl Young. * I have a winter heather and dwarf conifer bed which is now eight years old. Can the team suggest how best to cut back the heathers (.) now rampant .hh which are choking the trees. I trim the heathers annually after flowering .hh but this does not stop them spreading

In Interaction SB5, the query multi-utterance was considerably longer than the others. The Layman started with a statement about atypical ownership: "My question is..for my daughter" (line 8). The relation of another person's question or complaint must be explicitly accounted for because there is a default assumption that the problem is the speaker's (Sharrock & Turner, 1978); therefore, this question violated default assumptions and had to be explained. In addition, the Chairman had to question the Layman about the problem in order to formulate an identifiable query (SB5, 22-33). Finally the Chairman interrupted to identify the issue herself and to request the Expert to start the solution (SB5, 28-30):

C In fact this is what Sara was saying at the beginning maybe you'd like to leap in here with some advice Sara

Normally, if the question was understood, the exchange would continue on to the answer immediately. However, sometimes an explicit formulation of the query by the Chairman or Expert was made before the solution began. For example, the imposed formulation by the Chairman in Interaction SB5, preceded by a prompt to the Layman for the specific query presumably filled the absence of a concise question from the Layman. In interaction SB4, both the Expert and the Chairman similarly re-prompted the Layman for the query by asking for more information (11-13; 24 ). Only after the Layman's second reiteration of the original facts did the Expert take over and maintain the turn.
Chairman interjection between the main query and the solution transpired in all three GQ interactions. In these, the Chairman took the floor after the Layman's query to explicitly formulate the question before directly passing the floor to the Expert. For example, in GQ1:

C Thank you Mrs Young, Daphne how would you tidy up a bed of rampant heathers bearing in mind that Mrs Young gives them a haircut as it is. (GQ1, 6-7)

In the GQ interactions, the queries appeared comprehensible and the exchange should have passed to the Expert and solution without problems. However, because there was a panel of experts, next-speaker would be ambiguous causing the Chairman to intervene in order to select the next speaker from the panel. Therefore, these directions of turn were not typically seen as confirmations of the correct problem formulation; in fact, in Interaction GQ1 (line 10), the expert re-formulated the problem after the Chairman's formulation with the phrase "The problem is..." before continuing the solution. So, concise formulation of the question appeared necessary but also problematic before the solution could be initiated.

2.5.3.4. Question-answer Insertion Sequences

The conditional relevance of the question-answer adjacency pair means that anything other than an "answer" or a conceivable preparation for an answer would be sanctionable. In some of the interactions, a question-answer sequence was inserted between query and answer multi-utterances with these questions recognized as preparation for the solution (Schegloff, 1972). Interactions GQ2, GQ3, SB5 and SB6 all contained a question-answer insertion sequence which included "try" questions, i.e. utterances in statement form with a questioning tone implying a request for confirmation. In this material as well, they were usually followed by a confirmation from the Layman. These "try" questions indicated that the experts had some idea of what the answers
would be and were just confirming them. For example, in SB5 (35-37), the Expert started with a "try" question but continued immediately with the solution without waiting for the answer; the Expert finished this solution even after the Layman interrupted with the "try"-question's answer which showed the solution to be inadequate.

In SB6 (28-34), the "try" inference that the Layman "elected to go on the business tariff" himself was incorrect and the Layman had to elaborate:

E um so what you've elected to choose you've elected to go on this standard business tariff, * you weren't on it before y-
L =I didn't I had a letter from the bank saying that I (.) they were going to change the account over to that (.) to that (.) and that
E [to that
L would be that=
E =to that basis=
L =yes

In Interaction SB4 (27-31), the Expert requested a clarification which the Layman couldn't answer; the Expert interrupted with her own inferred answer before continuing with the solution.

2.5.3.5. Answer

The answer, or solution, was a long multi-utterance. However, in contrast to the vague, topic statements "pre-announcing" the query multi-utterance, the initial statement of the solution multi-utterance was generally a concise solution statement, starting with a phrase such as "I think", "I would", "my advice". To put the essence of an intended lengthy turn in the first unit is contrary to the expected aim of multi-utterance to stave off the TRP. In fact, in Interaction SB5, the Expert gave the initial simple solution in question form, adding another invitation for the listener to claim the turn (line 47-54):
E=have you thought about um suggesting that she goes to (..) one of the advice agencies which are around I mean there are a number of uh advice agencies there's the (..) Department of Employment Small Firms service, there are a number of enterprise agencies .hh now they (..) they can be very helpful to people who are starting up and they can take you through every step y-you need to take um. H-has your daughter thought about that?

All of this emphasized an access available to the Layman not typically permitted in multi-utterances.

Repairs, or corrections, from the Layman often occurred within the solution explication. For example, in interaction SB6 (4/-4'), the Layman explained the result of already having tried the solution and the Expert then continued with an adapted solution. The Chairman or the Layman also directed follow-up questions to the Expert in the solution section. So, the solution was clearly interruptible, another feature not usually found in multi-utterances.

A repetition or summation of the solution typically "wrapped-up" the solution, as sometimes found in the question multi-utterance. However, the Expert in GQ3 finished by moving away from the answer to general comments on the beauty of the flower in question, a technique described in Chapter 1 (30-32):

E and what beautiful flowers they are (..) and what beautiful perfume when you come downstairs you can't whack 'em can you

Second experts gave solutions in interactions GQ1 and GQ2. Both started immediately after the first expert's solution was "wrapped up". Significantly, they did not occur in any other position. Even though they were providing alternatives, these solutions did not interrupt the multi-utterance like some Layman repair-initiations.

In the example below (GQ2), the second expert was prompted after the first expert's formulation to the question of when to clear out dead leaves; the advice was to do it now, if the plants could be easily lifted, and perhaps in May. Both second solutions, GQ1 and GQ2, first reiterated the first Expert's solution, e.g. in the example
below, "Well I would do it twice a year".

E ... (.) But certainly if you can lift them out easily, then to sift out
the most of the the dead and decaying stuff, (.) and then probably
um it wouldn’t do any harm to give it a proper clean out probably
about May when the water’s warming up a bit.
C Stefan
E2 Well I would do it (.) twice a year but now is an excellent time
of year to if you have an electricity supply to your pool ...Is to buy
and install one of these very small (.) pool heaters... (36-38)

Alternative solutions were then given to the earlier stated solution (GQ1) or on related
topics (GQ2), e.g. buying a heater. The "wrapping up" procedure took the form of a
humorous comment and summation in GQ1 (67-68) and a repeat of the solution in GQ2
(42-44).

2.5.3.6. Closing Exchange

As outlined in the Method and Procedure sections, typically the closing procedure
starts with a pre-closure exchange which consists of filling a turn with a topic that is
not new. Checks for Layman satisfaction were the most prevalent pre-closing form,
found in GQ1, SB4, SB5 and SB6. If the primary topic was satisfactorily fulfilled, then
it would seem the conversation could legitimately close. For example, in interaction
GQ2 (45-48), the pre-closure, and then closing, was accomplished by a simple question
to check the Layman’s satisfaction of the solution given.

C Does that help
L [Thank you
L yes that’ll be very useful
C Oh good (pause) who’s next

Rejection of the pre-closing attempt allows additional talk by pre-empting or
delaying the closing. In interaction GQ1 (77-82), a check for satisfaction was met
with rejection of the solution. The Layman commenced a lengthy explanation which
is evidence of the dispreference of rejection of advice (Pomerantz, 1984). The Chairman’s acceptance of this rejection then started the closing exchange.

In interaction SB4 (��, 無しけ), the Chairman summarized the solution which the Layman interpreted as a pre-closing and attempted to start the closing with a "thank-you" statement. However, the Chairman re-opened the interaction for "general interest" talk and only later pre-closed by wrapping-up this talk's topic ( Coconut ). In the other SB interactions, "general interest" talk was also used to end the interaction. For instance, it was only after the "general interest" Chairman-Layman talk in Interaction SB6 ( Coconut ) that the Chairman summarized the original solution to start the pre-closing exchange.

In contrast, in Interaction GQ3 ( Coconut-3椰 ), the Expert pre-closed simply by wrapping-up the solution as seen in the previous section. The Expert moved off the solution and passed the turn to Layman after general comments on the flower’s beauty. The Layman agreed but did not pursue the topic. The acknowledgement was taken by the Chairman as the completed pre-closure and he immediately moved on to the next consultation.

If the pre-closure was accepted, the close exchange could proceed, usually through conventional phrases. Closing in GQ1, SB4, SB5 and SB6 utilized conventional phrases of thanks and/or bye exchanges. In GQ2 and GQ3, however, the Chairman immediately moved on to introduce the next Layman with no proper exchange after the acceptance of the pre-closure. Greatbatch (1988) notes a similar absence of closing exchange in news interviews when the interviewer chooses to continue the on-going broadcast in deference to the audience.

2.5.4. DISCUSSION

The opening was minimally an exchange of short utterances. The GQ interactions showed that this exchange didn’t necessarily require conventional greeting
phrases. However, all the openings included an identification of the new interactant, the Layman, which satisfied the requirements of non-face-to-face interactions.

The primary topic was recognized to be the query and to be the Layman's domain, as indicated by the Chairman prompts. Similarly, the solution was recognized as the Expert's domain because, although the Expert doesn't enter the interaction up to that point, the solution turn was claimed immediately without prompting. However, where a concise problem formulation was absent or a panel of experts made next-speaker ambiguous, an additional formulation was given prior to the solution because the exchange efficiency was in jeopardy. This acceptance of the query as primary topic and the roles that handle the two parts of it indicated some predetermination in consultations.

However, before the solution could continue, concise formulation of the question appeared to be necessary with evidence of re-prompting for more specific queries. Nevertheless, the Expert showed evidence of having a specific solution in mind before starting the solution multi-utterance. Fact-finding questions were often "try" questions that did not require an answer for the Expert to continue. The Expert seemed to be confirming a solution path already chosen.

The query followed a typical multi-utterance format with an initial general statement delaying the crux of the query and a "wrap-up" via a summation of the problem or the question itself signalling the end of the turn. Although the solution multi-utterance also contained a normal "wrapping up", the start of the solution was not characteristic of multi-utterances. The solution started with a simple and direct answer to the question, which fulfilled the reason for the multi-utterance immediately. The fact that this occurred was strong evidence for a pre-determination that the expert was permitted a lengthy turn.

Also contrary to typical multi-utterances, the solution was often interrupted. Repair-initiations often occurred after the initial part of the solution as a statement of fact by the Layman about that part of the solution. It then caused a correction to occur
in the form of a more adequate solution. It should be noted that only due to the immediate presentation of the solution in the multi-utterance could such repairs efficiently take place.

The wrap-up of the solution was enough to start a closing section and finish the interaction. The closing was usually started by a pre-closure check of solution satisfaction, again demonstrating this to be the primary topic. The solution usually was accomplished with a "thanks" and "bye" exchange.

2.5.5. ASSESSMENT OF METHOD

Does CA support a consistent, common structure for consultations? A consistent occurrence of several conventional features in the same order was evident from the detailed analyses of the individual interactions. These features, and therefore the pattern description according to this analysis, were: a greeting exchange, a question-answer exchange as multi-utterances with possible insertion sequences, and pre-closing and closing exchanges. However, the identification of these features' in their specific forms was interpreted by the analyst and therefore, accurate identifications could not be guaranteed. In addition, the analysis did not lend itself to generalization and replicability in all cases was problematic.

The question of what this particular structure might accomplish was much more clear with this analysis than with the others, though individual cases were slightly different. The opening exchange allowed the Chairman to initiate communication and to pass turn to the Layman for the primary topic. The apparent allocation of the main tasks of query and solution to the appropriate persons allowed an efficient interaction, as seen by the fast start of the GQ interactions. Re-formulations of the query and question-answer exchange before the solution ensured a correct formulation before attempting a solution. The initial concise solution statement ensured elimination of inadequate solutions up-front. In addition, the solution
multi-utterance was structured so as to allow the Layman continual access in order to help shape an adequate solution. Often, the Layman's declaration of satisfaction of the solution signaled a pre-close and closing exchange. In short, many of the features found work towards efficient completion of the task.

2.6. CONCLUSIONS

This initial study reviewed the results of a range of analyses using a viable sample size in order to indicate each one's effectiveness in describing consultative structure. The analyses were assessed in relation to three questions: is there a consistent, common structural pattern to consultations? If one exists, what might it consist of? What might it accomplish?

The Turn-Time analysis was able to show a distinctive consistent pattern reliably supported by statistical tests. There were general indications of the characteristics of the pattern, although only concerning the behaviours studied, i.e. turn duration and source; the pattern consisted of frequent short turns by Chairman and Layman at the beginning and end with few long turns by the Expert in the middle. However, the precise stages of the pattern could not be identified because of variabilities in temporal durations between the interactions. In addition, no explanation of the pattern could be made from this analysis.

The Functional Analysis model also reveals a consistent pattern. The analysis was able to generalize an overall model pattern yet still be precise enough to reveal atypical cases. The "stages" of the pattern, though, were artificially devised, based on the Request Act Type and its "response". These stages were: Introduction by Chairman and prompt to Layman to present the query, Layman query request, Expert solution explication, and Chairman and Layman interactive closing. However, the description and reliability of the pattern could be made only as far as the Act Types used; the acts could not be assumed to be reliable, valid or complete. Also, this
analysis could not fully explain why this particular pattern existed or why atypical cases occurred.

The CA analysis showed no continuous progression of stages but rather consistent occurrences of conventional features in a sequential order. These were Opening exchange, Query multi-utterance with a possible Fact-finding insertion sequence, Solution multi-utterance, Pre-closing and Closing exchanges. The question was how to identify the many varying forms of these sequences and how to generalize any overall pattern from the individual varied interactions. Nevertheless, the reasons behind the pattern could all be explained as, in brief, working towards efficient task accomplishment. CA analysis had the greatest explanatory power but, it didn’t lend itself to generalization or empirical experimentation.

Perhaps, combinations of these methods would be ideal: objective behaviours for statistical testing, a model design for a general perspective and the CA features for explanatory purposes. However, such combinations were not easy to see; for instance, operationalization of CA features were very desirable but difficult to achieve. Nevertheless, this thesis reports two novel approaches and their results with a large sample of radio query programme interactions as well as with natural consultations. The methods used were: 1. a model using objective units of turn source and relative length, and 2. a statistical exploration of frequent non-topic words in order to identify any conventional expressions or words to match conventional feature use.
3.1. INTRODUCTION

The results of the structural analyses comparison study in Chapter 2 indicated clearly that a consistent pattern with definite stages existed for consultations. However, agreement on the precise descriptions of these stages did not result. The Turn-Type analysis suggested three sequential stages. A Chairman-Layman phase with short frequent turns by each occurred at both the beginning and end. In the middle was a stage dominated by the Expert with a few long turns. Six stages were found each in the Functional analysis and the Conversational Analysis (CA) but these were slightly different, apart from common query and solution stages. The Functional analysis additionally produced an optional introduction, optional follow-up or second question stages after the solution, and a closing. Other CA sequences included an opening exchange, an optional question-answer sequence prior to the solution, and pre-closing and closing exchanges. Given these different interpretations of the consultative pattern, the question of a coherent description of the pattern’s stages warranted further attention.

A model was thought best to test effectively the validity of many different possible stages. Models allow enough detail for exact, testable predictions yet maintain the generality and flexibility needed for producing variations of the overall structure and, eventually, a coherent theory. Patterns of changes in overt behaviours are assumed to be based on underlying state changes. (Wickens, 1982) Moving between an underlying theory and the overt behaviours, it is possible to uncover less obvious descriptive characteristics that may be useful; this would seem likely in conversation where multiple forms are used to perform similar functions.

A number of researchers have applied Markov models to the study of conversation. (see Hewes, 1978 for a review) Jaffe and colleagues (et al. 1967; Jaffe & Feldstein, 1970) modelled overall sequential patterns of conversational structure using
units of speech or silence in a first-order Markov model. Hawes and Foley (1973) found stable patterns with a 13- and 3- state Markov model involving sequences of act types classified as inhibitive, facilitatory or maintaining of further communication.

A Markov model describes a particular type of probabilistic process. It represents a sequential process of a discrete set of states. Changes, or transitions, from one state to another are describable by probabilities and may be represented in a transition matrix. In contrast to other types of processes, the current state of a Markov process depends solely on the state at a particular preceding time. For example, the state at a time t of a first-order Markov model depends solely on the state at the time t-1, as if all the influential information from the process history was embodied in only this previous state.

Recurrent turn exchange in conversation lends itself to a Markov model. Links between pairs of turns have been recognized by, for example, Conversational Analysts who have described various kinds of adjacency pair sequences including greeting-greeting exchanges (Schegloff, 1979), closing exchanges (Sacks & Schegloff, 1973), question-answer pairs (Schegloff, 1972), and complaint-remedy pairs (Sharrock & Turner, 1978). Request-response exchanges have been described in one form or another by linguists such as Coulthard (Coulthard et al., 1981; Coulthard & Brazil, 1979; Sinclair & Coulthard, 1975), Labov and Fanshel (1977) and Goffman (1981). If the process of spontaneous conversation is locally negotiated in real-time (Schegloff, 1982), pairs of turns are involved necessarily in the presentation and acceptance of conversational tasks. This common relationship between consecutive turns could be modelled by a first-order Markov model.

Given that in Chapter 2 consultation was found to have a consistent structural pattern, it might be conceived of as a process involving transitions from one state to the next, each state characterized by a pattern of various behaviours described with transitional probabilities. This chapter describes the design and relative fit of structural
models of random effect and of 2-, 3-, and 4- states based on the sequential process of Turn-Types. The main objectives were to determine if the existence of a structural pattern was supported by this method and to develop a good structural model for consultations.

3.2. METHOD
3.2.1. DESIGN

The Turn-Time study in Chapter 2 indicated that sections within the interaction have unique characteristics of turn source and length; this study developed Markov models using similar units of Turn-Type. Turn-Type was classified by source, either Chairman (C), Layman (L) or Expert (E), and by relative length, i.e. Multi-utterance (M) or Short turn (S), resulting in 6 Turn Types. Length was determined by the number of independent clauses rated using the classification scheme from Danziger (1976). (see Chapter 2)

Using an initial sample of radio phone-in queries, the models were developed and probabilities estimated; they were then fit to the larger sample recorded from different airings of same programme. The models were based on four specific Turn-Type units that were observed to occur in the same order in all the interactions: CS, LM, EM and a CS final turn. Indeed, the shortest interaction included simply these turns in order, with one additional turn. Based on these four turns in progression, one can hypothesize a sequence of four states, each centred around a turn. Intuitively, these particular Turn Types might represent relevant functions for their states. For example, the Expert Multi-utterance turn in the middle of the order would likely be an Expert explaining the solution. Based on observation of these functions, the states were labelled Opening (O), Query (Q), Solution (S), and Closing (C), respectively.

The progress of the interaction between these four Turn Types was observed to be either 1. an immediate jump to the next Turn Type or 2. a set or series of turn pairs
before the next Turn Type. So, if the move to the next state didn’t occur in response to the previous state’s Turn Type, then the process remained in the state during a intervening series of utterances and their responses before the eventual move to the next state. The occurrence of pair sequences logically follows from the nature of turn exchange in performing conversational tasks. For example, moving from the Opening stage to the Query stage, the next turn after the Chairman’s initial turn was either the Layman’s Multi-utterance of the next stage or a Short Turn by the Layman which then was responded to by another speaker, usually the Chairman, before the Layman could potentially move to the Multi-utterance of the Query state.

Given this, each state was hypothesized to immediately jump to the next state or to continue in the state before eventually moving to the next state, with certain probabilities. The probability of moving to the next state was hypothesized to be different whether it was an immediate or a delayed move to the next state. If there is interim talk before the delayed move to the next state, this could be considered an interim stage or Stage 2. Stage 1 represented the first turn taken with a probability estimating the chance of an immediate jump to the next stage or a move into the Stage 2. Stage 2 of each state estimated the probability of moving into the next state or staying in the Stage 2 at the end of each pair of turns.

Transitional probabilities were estimated from an initial sample of interactions for a full model of the four states. In addition, relevant 3-state and 2-state models developed from versions of the 4-state model were also tested. In addition, a null model, i.e. one which demonstrated no predictive ability at each state, was developed for comparative purposes. Also, a model using estimates of the actual Turn-Type pair sequences, rather than just any pair sequence, was developed and tested to search for an improved model.

Actual frequencies of the state events and transitions were then tabulated from the larger sample. A likelihood ratio chi-square test was carried out for each model in
In order to test goodness-of-fit, which ideally results in the null hypothesis. In addition, the differences between likelihood ratios of hierarchical models result in a likelihood ratio chi-square of its own. This was completed for each pair of models in order to compare them.

In the CA analysis of Chapter 2, the solution was unusual in comparison to typical multi-utterances. On observation, this section’s comparatively long duration and variation in Turn-Type was judged to be worthy of closer investigation. It was assumed that the solution was explicated through Expert multi-utterances in the solution section and Layman turns were then repair-initiations or follow-up questions, as seen in analyses of Chapter 2. Therefore, an investigation of the number of Expert and Layman turns throughout the solution section was proposed to indicate the efficiency in the process of query satisfaction. So, the average number of these Turn Types from the solution start to the interaction’s end were calculated as a general indication of solution explication efficiency.

3.2.2. MATERIALS

The same interactions were used in both this chapter and Chapter 4. They were all recorded from airings of London’s LBC Radio’s Fix-it Phone-in Programme. Each airing consisted of three topical segments, following consecutively, lasting roughly an hour in length. Each segment was on a separate topic involving its own expert specialist. Typically, the Layman phoned in to the Chairman and the Expert who were face-to-face. The Chairman, the same for all the interactions, was female.

Initial, exploratory parts of the studies of Chapters 3 and 4 used a sample of 24 interactions recorded on 28 January 1989 (FX1). (see Appendix 3) On this occasion, twenty-four interactions of good recording quality were transcribed from the show: 10 on gardening, 8 with a DIY theme, and 6 on audio equipment. All the experts in this show were male.
A larger sample of 53 interactions (FX2) from two different airing dates of the same programme were used in the confirmatory parts of the studies. (see Appendix 4)

Forty-one interactions were recorded on 29 July 1989: 14 from a gardening section (G), 12 on hardware (H), and 15 with a jewellery expert (J). An additional twelve gardening interactions (B) were recorded on 5 August 1989. All the experts were male and different from each other.

3.2.3. PROCEDURE

Recordings were made of the Fix-it Phone-in Programme using a radio-cassette recorder. After all the recordings were made, an initial review of the recordings was made. Interactions with sections missing or incomprehensible due to, for example, faulty phone lines, could then be eliminated; in fact, no interactions were immediately eliminated and all calls that occurred in the programmes were transcribed. First, a mainly orthographic transcription was typed into the computer for each interaction. Printouts were used to correct the transcription during a second review of the recordings. Then, paralinguistic activity and other details, e.g. location of simultaneous speech, were added to the transcription using conventions developed by Jefferson (see Appendix 1). Briefly, this included indications of all extraneous linguistic sounds, e.g. inhalations, descriptions of recognizable non-linguistic sounds, e.g. clock chimes, and suggestions of tempo, stress, intonation and pause lengths. This procedure was done at least twice before editing the computer file. A final check of the transcription was made using a printed copy and the original recordings. The final transcriptions of FX1 appear in Appendix 3 and of FX2, in Appendix 4.

Each speaker was marked as either the Chairman (C) or the host of the show, a Layman (L), and an Expert (E). The speech of each new speaker was started on a separate line; all the lines were numbered. The FX1 sample of 24 interactions involved approximately 13,000 words; the FX2 sample contained roughly 30,000 words. Only
after the transcriptions' completion were the procedures for each type of analysis specified and carried out.

Taking each of the initial 24 interactions separately, the turns that were not back-channels were assessed. Back-channels were considered as any one of the following:

1. minimal responses, e.g. "yeah", "umhm", "I see", "right", "okay"
2. brief comments, e.g. "sounds good", "oh I can believe it", "me too"
3. brief requests for clarification or repetition
4. brief restatements or repetitions of speaker's immediately preceding thought
5. completions, or "fillers" of the speaker's phrase allowing the speaker to continue. (Duncan, 1972, 1973; Yngve, 1970)

Non-back-channel turns were then classified by source role and length. In order to determine relative length, independent or "conversationally meaningful" units were first identified using Danziger (1976)'s criteria as follows:

1. Clauses
An independent clause by itself or along with one or more dependent clauses was a unit.
   a. A unit included the dependent clause with its independent clause even when a different utterance separated them; in this case, the dependent clause would usually elaborate or explain the independent clause.
   b. Dependent clauses connected to an independent clause could be distinguished by an initial subordinating conjunction or pronouns, e.g. "who", "which", "that", "if", "when". Independent clauses connected to other independent clauses was usually preceded by a coordinating conjunction or a conjunctive adverb, e.g. "and", "but", "or", "because", "so that", "for".
2. False starts

Words not conveying the speaker's meaning and/or incomplete in meaning were not counted as utterances, e.g., "well uh".

3. Interruptions

   a. If one independent clause was interrupted by another independent clause (by either speaker or listener), each was scored as a separate unit.

   b. A dependent clause alone may be a unit if it occurred after an interruption that was preceded by a non-utterance; the non-utterance would not be counted as a unit.

4. Repetitions

A repetition was not counted as a separate unit if it contained exactly the same words and intonation and no unit intervened between repetitions.

5. Single words

Single words or combinations of words without clear subject and predicate were counted as units only if they seemed to be full units of conversation.

6. Acknowledgements

Affirmations, negations and confirmations e.g. "yes", "no", "that’s right", were typically counted as units. However, if there was an immediate continuation to explain or to elaborate or if there was a preceding statement which took this as a tag question, then they were not counted as separate units. (p. 200-203)

Then, those turns with more than 2 such units were coded as Multi-utterances (M) whereas the remaining were considered Short Turns (S), recalling Schegloff’s (1982) argument about transition pressure making the end of each unit vulnerable to turn loss. Therefore, all non-back-channel turns were coded as one of six possible events: Chairman Short utterance (CS), Chairman Multi-utterance (CM), Layman Short utterance (LS), Layman Multi-utterance (LM), Expert Short utterance (ES) or Expert Multi-utterance (EM). However, due to the low occurrence of a multi-utterance turns by the Chairman, this Turn-Type was counted as a CS Type in tabulations.
Each interaction was divided into four states based on the four invariant Turn Types: CS, LM, EM, CS. The Opening state started with the initial CS Turn-Type and continued until the first LM Turn-Type. The Query state started with the first LM Turn-Type and continued until the first EM Turn Type. The Solution state started the first EM Turn Type and ended with the last EM Turn Type. The Closing section started from the last EM Type and ended with the last turn, overwhelmingly a CS Turn.

Two probabilities for each of the four states were estimated from the FX1 sample by calculating: 1. the number of interactions that immediately jumped to the next state and 2. the number of interactions after each turn pair that resulted in a jump to the next-state. For example, 9 of 24 initial interactions had an LM Query Turn-Type immediately following the initial Chairman turn; therefore, the resulting estimated probability that an immediate jump would occur was .375.

It was hypothesized that an improved fit for the data to the model would occur if more explicit probabilities of the actual Turn-Types occurring in the Stage 2 turn pairs were used. So, the probabilities of the Stage 2 pair sequences were also calculated for the actual Turn-Type pairs that occurred. In addition, a "null" model was constructed by assuming all the transitional frequencies that weren't fixed had equal probabilities.

The FX2 interactions were then divided in a similar manner to the initial sample and the number of interactions counted for a jump to the next state or Stage 2 from Stage 1 and, if relevant, a jump from Stage 2 for each of the four states. The number of interactions moving to next state from the actual Turn Type pairs in Stage 2 indicated from the initial sample was also counted.

The full four-state model, null model and actual Turn-Type model were tested for goodness-of-fit by calculating their respective likelihood ratio chi-squares, using the formula: \( G^2 = 2 \sum f_i \times (f_i / N \times Pr_i) \) where \( f_i \) is the frequency for each event, and \( Pr_i \) is the estimated transitional probability. Degrees of freedom used were: \( df = [rows(columns-1) - \# of Pr] -1 \). When the probabilities were determined from
another sample, they have to be included in the calculation for degrees of freedom.

(Wickens 1982)

From the full four-state model, combinations of these states were used to test less complicated models for fit. Specifically these 3-state models and 2-state models were:

3-state
- Opening-Query-Solution (OQS)
- Query-Solution-Closing (QSC)
- Opening-Solution-Closing (OSC)
- Opening-Query-Closing (OQC)

2-state
- Query-Solution (QS)
- Opening-Solution (OS)
- Query-Closing (QC)
- Opening-Closing (OC)

This was done by collapsing the event counts of states not considered into the preceding section, or into the following section in the case of the Opening. Then, the estimated probabilities for the considered section were fitted to the events in the combined sections. The possible 2-state models of Opening-Query and Solution-Closing were not tested as this involve the collapse of three states of actual event frequencies into one which was thought unlikely to offer a good fit. A comparison of models was accomplished by subtracting likelihood ratio chi-squares from each other to find the optimal model, i.e. one that was not significantly worse than the next most complex one.

The average number of turns from the first Expert Multi-utterance to the end of the interaction was calculated. The average number of EM and LM Turn-Types in this section was also calculated, as well as the figures within separate topic domains from the large FX2 sample. The mean number of turns between each EM Turn-Type was also computed, e.g. the average number of turns between the first and second EM turns in this section.
3.3. RESULTS

The turns that were classified, i.e. not back-channels, were highlighted in bold print in the transcriptions of each interaction in Appendix 3 for the FX1 sample and in Appendix 4 for the FX2 sample. Each interaction's sequence of Turn-Type units appear listed in Appendix 5 for FX1 and Appendix 6 for FX2. The estimated transitional probabilities for the eight stages of Stage 1 and Stage 2 of the 4-state model are in Figure 7. The actual Turn-Type pair probabilities are shown in Table 8. Stage 1 and Stage 2 of each state are identified first by the state, Opening (O), Query (Q), Solution (S) and Closing (C). Then, an additional 1 for Stage 1 of immediate turn and an additional 2 for Stage 2 of remaining pair sequences separates all eight stages. So, for example Stage 1 and Stage 2 of the Opening state were labelled O1 and O2, respectively.

Figure 7. Estimated Transitional Matrix for the 4-state model.

<table>
<thead>
<tr>
<th>t</th>
<th>t+1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O1</td>
</tr>
<tr>
<td>O1</td>
<td>-</td>
</tr>
<tr>
<td>O2</td>
<td>-</td>
</tr>
<tr>
<td>Q1</td>
<td>0</td>
</tr>
<tr>
<td>Q2</td>
<td>0</td>
</tr>
<tr>
<td>S1</td>
<td>0</td>
</tr>
<tr>
<td>S2</td>
<td>0</td>
</tr>
<tr>
<td>C1</td>
<td>0</td>
</tr>
<tr>
<td>C2</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 8. Estimated Transitional Probabilities for the 4-state Model with Actual Turn-Type Pairs.

<table>
<thead>
<tr>
<th>STAGE 2 AT TIME t</th>
<th>NEXT STATE</th>
<th>AT t+1</th>
<th>STAGE 2 AT t+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPENING 2</td>
<td>.81</td>
<td>LSES</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>.08</td>
<td>LSCS</td>
<td></td>
</tr>
<tr>
<td>QUERY 2</td>
<td>.25</td>
<td>ESLM</td>
<td>.31</td>
</tr>
<tr>
<td></td>
<td>.44</td>
<td>ELSL</td>
<td></td>
</tr>
<tr>
<td>SOLUTION 2</td>
<td>.16</td>
<td>EMLM</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.05</td>
</tr>
<tr>
<td>CLOSING 2</td>
<td>.50</td>
<td>LS-End</td>
<td>.125</td>
</tr>
<tr>
<td></td>
<td>.25</td>
<td>CSES</td>
<td>.125</td>
</tr>
</tbody>
</table>

Likelihood ratio chi-squares were then calculated for each model. The likelihood ratio chi-squares ($G^2$) for the various models were as follows:

<table>
<thead>
<tr>
<th>Models</th>
<th>$G^2$</th>
<th>df</th>
<th>goodness of fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-state model</td>
<td>48.58</td>
<td>55</td>
<td>fit</td>
</tr>
<tr>
<td>3-state</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OQS</td>
<td>38.04</td>
<td>4</td>
<td>fit</td>
</tr>
<tr>
<td>QSC</td>
<td>95.98*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OSC</td>
<td>249.72*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OQC</td>
<td>434.76*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2-state</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QS</td>
<td>85.44*</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>OS</td>
<td>239.18*</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>QC</td>
<td>482.18*</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>OC</td>
<td>635.92*</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

* $p<.05$
So, only two models met the goodness-of-fit requirement of supporting the null hypothesis. They were the full four-state model of Opening, Query, Solution and Closing and the 3-state model of Opening, Query, and Solution, in which the Solution probabilities incorporated the Closing events as well. Taking the difference of the likelihood ratio chi-squares to compare these two models, no significance difference was found ($G^2=10.54$, df=2) which means that neither model was a significant improvement over the other.

The differences between likelihood ratio chi-squares of the other models were also examined for significance. The OC and QC models were not of equivalent or better relative fit than the others. The OS model was significantly better than the OQC model but no better than the OSC model. The QS model was significantly better than both the OQC and OSC models but no better than the QSC model.

<table>
<thead>
<tr>
<th>Models</th>
<th>$G^2$</th>
<th>df</th>
<th>result</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSC v QS</td>
<td>10.54</td>
<td>18</td>
<td>n.s.</td>
</tr>
<tr>
<td>OSC v OS</td>
<td>10.54</td>
<td>18</td>
<td>n.s.</td>
</tr>
<tr>
<td>OSC v QS</td>
<td>164.28</td>
<td>18</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>OQC v OS</td>
<td>195.58</td>
<td>18</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>OQC v QS</td>
<td>349.32</td>
<td>18</td>
<td>p&lt;.001</td>
</tr>
</tbody>
</table>

A four-state model using the actual Turn-Type pair sequences did not fit the estimated probabilities in a goodness-of-fit likelihood ratio chi-square test ($G^2=85.86$, df=5, p<.005), i.e. it was significant and did not meet the null hypothesis requirement for goodness-of-fit. The four-state null model with probabilities equal to .50 also did not result in a good fit ($G^2=109.72$, df=63, p<.001). The difference in degrees of freedom for the null model occurred because probabilities were not estimated from another sample.
In comparison to the results of the initial 4-state model, the null model had lower degrees of freedom yet a higher likelihood ratio chi-square score and so was no improvement on the initial model. The difference between likelihood ratio chi-squares for the actual Turn-Type model and the 3-state model resulted in a significant score of $G_2=47.82$, df=$2$ ($p<.001$); this means that even the 3-state model is a better fit to the data than the actual Turn-Type model.

In all the interactions of FX1 and FX2, in the section from solution to end, the mean number of turns was 8.75 per interaction. The mean number of EM Turn Types per interaction was 3.12 and the mean number of LM Turn Types was .62 per interaction. The mean number of turns between EM Turn Types in this section, maintaining the sequential order, and the number of interactions exhibiting that number of EM turns in that sequential position was given in Table 9.

Table 9. Mean Number of Turns Following Each EM Turn in the Solution Section of FX Consultations.

<table>
<thead>
<tr>
<th>EM Sequential Position</th>
<th>Number of Interactions</th>
<th>Mean Number of Turns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>77</td>
<td>3.16</td>
</tr>
<tr>
<td>2nd</td>
<td>69</td>
<td>2.90</td>
</tr>
<tr>
<td>3rd</td>
<td>47</td>
<td>2.79</td>
</tr>
<tr>
<td>4th</td>
<td>30</td>
<td>2.33</td>
</tr>
<tr>
<td>5th</td>
<td>3</td>
<td>1.67</td>
</tr>
</tbody>
</table>

Across specialist experts in the FX2 sample, only the LM Turn Type occurred differently. The LM Turn-TYPES per interaction were:
.2 for Jewellery but
.74 for Gardening B,
.92 for Gardening, and
1.0 for Hardware.

3.4. DISCUSSION

The three-state model of Opening, Query, and Solution/Closing and the four-state model of Opening, Query, Solution and Closing were both found to fit the data well. A null model representing equal transitional probabilities was found to be significantly worse than both the 3- and 4-state models, supporting the existence of a pattern in consultative interactions using units of turn length and source. The non-significant comparison between the 3- and 4-state models and the previous evidence for the presence of a Closing section in Chapter 2 supported the four-state model as the better description of the structure, although the adequacy of its Closing state probabilities cannot be guaranteed.

The four states were defined by the invariant presence of a particular Turn-Type: CS, LM, EM and final CS, respectively. Transitions between these states appeared to take place in one of two ways: 1. an immediate jump to the next state after the first turn or 2. a pair of turns, or a series of turn pairs, with a consistent probability of transition to the next state after each pair. It should be noted that a more complex model including the actual Turn-Types was found to be significantly worse than even the 3-state models of good fit, therefore, the actual Turn Types in the pair sequences could not be well predicted. The Stage 2 turn pair sequences represented further optional talk taking place between the states.

The states could be described roughly from the estimated probabilities. In the Opening state, only approximately 38% of the interactions jumped immediately from the initial Chairman turn to the Layman Query utterance. However, nearly 90% of the
interactions jumped to the Query after the first pair of turns, representing a brief series of turn exchanges. This would be consistent with a quick greeting exchange with an additional prompt for the Query or brief general-interest talk, as observed in the Chapter 2.

In the Query state, again only a third of the interactions immediately moved to the Solution after the Layman Multi-utterance, i.e. the question. After each additional turn pairs, the interaction moved on to the Solution state with a 70% chance. Therefore, any further exchange was relatively brief. This exchange predominantly involved Expert and Layman which was consistent with previously observed interrogative fact-finding sequences.

The Solution state more rarely jumped immediately to the Closing section after the first EM turn; approximately 80% of the interactions continued on to further turn exchanges. After each pair of turns in the continuing sequence, the probability of moving to the next state was still only about 20%, indicating long sequences of interim talk. The Expert and Layman carried out this further talk in mostly Multi-utterances. This interim series of turns might represent Layman-initiated repair sequences or second or follow-up questions with their own subsequent solutions.

In the Closing state, according to the estimated probabilities, roughly two-thirds of the interactions ended immediately after the last EM Turn-Type, the start of the Closing section. An immediate move out of this state appeared to occur more often than in any other section. In the event of interim talk, after each pair of turns, the probability of moving out of the state to end the interaction was high at .75. This indicated a very abbreviated Closing section.

The extreme brevity of the Closing state might explain the lack of significant improvement in higher-order models when simply adding a Closing section to the corresponding lower-order model. For example, a lack of improvement was seen between the 3-state and 4-state models when the additional Closing state was added as
well as between 2-state models and their corresponding 3-state models. A very brief Closing section would seem in conflict with the pre-closing and closing exchanges of CA analysis which would mean at least two pairs of turns. However, the closing may have been pre-empted due to the on-going nature of the radio programme (Greatbatch, 1988). Alternatively, the definition of the Solution state to include all EM turns meant that a pre-closing contained within an Expert multi-utterance would not have been recognized as part of the Closing.

The count of Turn-Types in the solution section showed an overall decline in the number of mean turns between successive EM Turn Types. The initial disclosure of solution found in the CA analysis of Chapter 2 might encourage more immediate interrupting corrections or follow-up questions with less intervening work needed in later stages. In addition, increasing pressure to accept the solution and finish the conversation might also increase later on. The statistics indicated that approximately half the interactions contained a Layman Multi-utterance in the Solution/Closing section so considerable access was available to the Layman, not all of which took place necessarily through Multi-utterances.

The comparatively little interaction by the Layman in the Jewellery section can be explained upon observation of the interactions. These interactions frequently saw the Chairman interjecting questions or comments quite early on in the Solution section. Perhaps this moved the topic away from the Layman’s position or forestalled Layman talk. Perhaps this early turn intervention and topic control resulted in Chairman dominance and curtailment of the Solution section. In any case, some positions in the conversation typically utilized by the Layman may be available to the Chairman as well.

3.5. CONCLUSIONS

The four-state model of Start, Query, Solution and Closing was a good fit of the model and, intuitively, the best acceptable model; moreover, it fit the data significantly
better than a chance model. So, the existence of a pattern was again corroborated in this study. The effective modelling of Turn-Type behaviours indicated that the pattern was well thought of in terms of alternating turns defined by source and relative length. What does this mean? The model reflected the exchange of turns found in general conversation but it also identified certain invariant Turn Types occurring in particular sequential positions. These had consistent transitions between them with optional interim talk sequences.

Also, the four states appeared to be valid in terms of a common structural pattern and should be considered in the description and explanation of it. The states, represented by constantly occurring turn types, might also represent obligatory functions for the consultation: an opening, a query presentation, a solution presentation and a closing. Roughly described from the model, a brief Opening section started with a Chairman utterance. The Layman then started the Query multi-utterance on the first or second opportunity. The Query also moved on quickly though often with a few additional turns. The Solution contained at least one Expert multi-utterance and, very frequently, long sequences of turns before moving on. The very brief Closing section ended with a short utterance.

Most interesting is the presence of the separate Stage 2 in each state. Optional additional turn-pairs represented possible further work to be done in each state. The existence of this optional Stage 2 means that a "context-free", "context-sensitive" (Sacks et al., 1978) structure, i.e. allowing definition across situation, can be hypothesized. Variations in the durations of individual interactions can be accounted for, given the optional Stage 2, yet a consistent sequence of states overall can still be predicted. This option allowed places to resolve individual problems before leaving each state, though these problems may have been common types.

Directly applied, it can be proposed that the Opening state may have included brief greeting exchanges or general interest talk of a friendly nature. The Query
possibly contained a relatively short fact-finding or formulation interrogative sequence. The Solution frequently had a long turn series allowing repairs or further questions by the Layman to adjust the solution between Expert and Layman. Finally, the Closing state rarely had a very brief additional pre-closing exchange to definitively "wrap-up" the closing of the interaction or to include a comment on the solution by the Chairman.

In application, a definitive model might allow real-time prediction of the process and identification of atypical cases and sections as they occur. In addition, a model would permit large-scale, and comparative, testing. However, the sections themselves need to be characterized in a more meaningful way. How did participants signal that these particular sections were being accomplished? This would be especially relevant within the interim turn-pair sequences. Some conversational sequences, described by Conversational Analysts, contain telltale words and phrases in order to incur recognition, e.g. adjacency first parts, or to perform a specific function, e.g. pre-announcements. In the next chapter's study, a cluster analysis to investigate the occurrence of conventional phrases was attempted in order to more precisely identify the states.
Chapter 4 CLUSTER ANALYSIS

4.1. INTRODUCTION

Conventional words and phrases have been identified in particular locations in conversation performing specific functions. Most notably, Conversational Analysis' adjacency pairs which place a constraint on the next speaker are thought to necessarily require some recognizability through conventional words, e.g. "hello" of greeting exchanges, if not by syntax or position. (Schegloff & Sacks, 1973) In this way the next-speaker knows the obligation he/she is under to complete the pair. Often a simple repetition of a conventional phrase given in the first part of the pair fulfils the obligation.

These conventional words or phrases frequently do not make a semantic contribution to the conversational content but rather are non-content function words that work for conversational coherence. Yngve (1970)'s listener back-channels, e.g., "yeah", "I see", "umhm", "me too", signal permission for the speaker to continue the turn. Sinclair and Coulthard (1975)'s "framing" words, e.g. "right", "okay", "now", announce a structuring meta-statement summarizing or preparing for a global structuring of the conversation's content. Some words, e.g. "well" (Schiffrin, 1987; Svartik, 1979) and "but" (Peterson, 1986), are used to alert the listener to deviance from expected coherence, e.g. topic shift, and a possible comprehension problem. Reichman (1978) identified a number of words that were used in conversational coherence functions including "so" which signalled a joining of concepts.

The resulting fit of a model in Chapter 3 indicated that the structure of consultations could be reliably thought of as states of Opening, Query, Solution and Closing. If these states represent distinct functions, might they likely contain conventional words or phrases marking shifts in coherence or task? Might words
commonly used to carry out each distinct function be concentrated in that state? For example, the Layman Query might be a concentration point for words such as "I" or "my" in its explanation of a personal problem. If conversationalists make use of conventional words, the states, and possibly the precise shifts of function or coherence within them, could be identified by means used by the conversationalists themselves.

4.2. GENERAL METHOD

4.2.1. DESIGN

An initial sample of interactions was surveyed to identify frequently-occurring words which were non-topic-specific, i.e., did not directly contribute information about the topic. Relevant sections of these interactions were investigated for differential occurrence of these words using cluster analyses. In order to ensure validity of this technique, two different methods of division of the interactions and two criteria for clustering the words were examined in all possible combinations and the results generalized. One particular cluster of words, occurring in the Query and Solution stages of the consultations, was then verified using a larger sample of similar interactions.

Investigation was made of its specific function by observing the occurrences of each word in the interactions.

4.2.2. MATERIAL

The material for this study was the same as used for the previous modelling study in Chapter 3. All the material came from London's LBC Radio's Fix-it Phone-in programme. The initial cluster analyses used a sample of twenty interactions recorded on 28 January 1989 (FX1). (see Appendix 3) This first sample consisted of 8 interactions on gardening, 8 with a DIY theme, and 4 on audio equipment. Four interactions, GAllen, AStan, AChris, and GAmy, used in the modelling study were eliminated here because their stages were inconsistent with those of the other interactions; for example, AStan and AChris appeared to have overlapping Query and
Solution sections. All the experts in this show were male.

A larger sample of 53 interactions (FX2) from two different airing dates of the same programme were used in the confirmatory parts of the studies. (see Appendix 4)

Forty-one interactions were recorded on 29 July 1989: 14 from a gardening section (G), 12 on hardware (H), and 15 with a jewellery expert (J). An additional twelve gardening interactions (B) were recorded on 5 August 1989. All the experts were male and different from each other. The FX1 sample of 20 interactions involved approximately 11,000 words; the FX2 sample contained roughly 30,000 words.

Recordings were made of the Fix-it Phone-in Programme on three different dates using a radio-cassette recorder. All calls that occurred in the programmes were transcribed. An orthographic transcription was made and then paralinguistic activity and other details were added to it using conventions developed by Jefferson (see Appendix 1). Briefly, this included indications of all extraneous linguistic sounds, e.g. inhalations, descriptions of recognizable non-linguistic sounds, e.g. clock chimes, and suggestions of tempo, stress, intonation and pause lengths. The transcription was corrected against the original recording approximately five times. A final check of the transcription was made using a printed copy and the original recordings.

Each speaker was marked as either the Chairman (C) or the host of the show, a Layman (L), and an Expert (E). The speech of each new speaker was started on a separate line; all the lines were numbered. Only after the transcriptions’ completion were the procedures for each type of analysis specified and carried out.

4.3. CLUSTER ANALYSIS

4.3.1. METHOD

All frequent non-topic-specific words were identified in the FX1 sample. In order to isolate their occurrence in different parts of the interactions, the interactions were divided into stages. The interactions were divided in two ways in order to ensure
First, interactions were divided into ten temporally-equal sections (Temporal) as in the Turn-Time study of Chapter 2. This was a purely objective, arbitrary division and one which would allow a greater separation of clusters than would occur with only a few divisions. Second, interactions were also divided into the four states indicated by the model of Chapter 3, Opening, Query, Solution, and Closing, (Model). This division would produce any clusters tied to these particular states identified from the previous study.

A binomial score, i.e. 0 or 1, of the presence (1) or absence (0) of each of these target words was recorded for all sections resulting from each of the two types of divisions, Temporal and Model. The binomial score, instead of a frequency count, kept the measure as independent as possible by using the interactions themselves as the critical "subject" factor and not allowing multiple occurrences of a word by a participant in any one interaction to unduly affect the analysis.

Hierarchical agglomerative cluster analyses were performed. In this type of analysis, a merging takes place of the nearest pair of words/clusters. The closest words are joined to form the first cluster and then, reiteratively, the most similar word or cluster pair is fused until only one cluster is left. Closeness is judged according to a clustering criterion of similarity which re-calculates scores with each merger.

Identification of prominent clusters must be made through examination of the sequential process of fusion of words to various clusters before the final fusion forming one cluster. However, the interpretation of cluster analyses may change with different clustering criteria of similarity so more than one clustering criterion is usually recommended. (Everitt, 1980) This study used two different criteria in order to ensure a more valid result.

First, the criterion of Between-Group Average Linkage uses the average of the similarities between all the pairs of words in two different clusters where the each
member of the pairs is in a different cluster. Second, Within-average Group Linkage includes, additionally, the two averages of all the similarities between all the pairs of words within each cluster. A third criterion, single linkage, which simply joins the single shortest link between all pairs in the matrix, was also attempted but results proved unsatisfactory in that only one cluster could usually be identified.

Constant repetition of the same subject within a role across the interactions could not be avoided in the case of the Chairman. This may have biased the occurrence of words or phrases ordinarily used by this individual giving an erroneous impression of conventional word usage for that role. In Chapter 2, the Chairman was typically found to be active only in the beginning and end of the interaction. Therefore, in addition to the analyses on the sections from the entire interaction, analyses of the only the middle sections of the interactions were made in order to eliminate any extraneous effect caused by the repetition of the same Chairman.

4.3.2. PROCEDURE

Using the initial FX1 sample of twenty interactions, words were first "standardized" in all transcriptions. That is, false starts, contractions, cutoffs and informal usages, e.g. "thanks", were changed to their complete, correct form. Immediate repetitions of a word that contributed no additional meaning were eliminated. All laughter was represented as "ha" and filled pauses as "um" or "uh".

This standardization allowed a computer DOS word frequency function to construct a list of the most frequent words that occurred. Any words that occurred more than 5 times in any interaction were included on the list. From this list, topic words were eliminated, including proper nouns, direction words, e.g., "down", and any words describing topic-related activities, e.g., "dig", "soil", "small". This resulted in 89 words (see Appendix 7).

Each interaction was then divided into ten equal time sections but keeping full
utterances together. The presence or absence of each of the 89 words in each temporal section in each of the 20 interactions was determined and coded as 1 for present or 0 for absent for that section. Therefore, this data set consisted of 200 scores of 0 or 1 for each target word.

Identification of Turn Types accomplished in Chapter 3 was used again here; for a complete description of the relevant criteria, refer to Chapter 3. Briefly, each of the initial interactions, eliminating back-channel turns, had all turns classified by source and relative length according to independent or "conversationally meaningful" units identified using Danziger (1976)'s criteria. Those turns with more than 2 such units were coded as Multi-utterances (M) whereas the remaining were considered Short Turns (S). Therefore, all non-back-channel turns were coded as one of six possible events: Chairman Short utterance (CS), Chairman Multi-utterance (CM), Layman Short utterance (LS), Layman Multi-utterance (LM), Expert Short utterance (ES) or Expert Multi-utterance (EM). The turns that were classified, i.e. not back-channels, were highlighted in bold print in the transcriptions of each interaction in Appendix 3 for the FX1 sample and in Appendix 4 for the FX2 sample. Each interaction's sequence of Turn-Type units appear listed in Appendix 5 for FX1 and Appendix 6 for FX2.

The interactions were then divided into divisions of the model's four states: Opening, Query, Solution, and Closing. The Opening section included the start of the interaction up until the start of the Layman's first Multi-utterance turn, containing the query. The Query consisted of turns from the Layman's first Multi-utterance turn to the Expert's first Multi-utterance turn that was of an informing, and not questioning, nature. The Expert Solution section started from the Expert's first informative Multi-utterance and included all Multi-utterance turns by the Expert. Any turns that followed the Expert's last Multi-utterance turn were counted as the Closing section. Again the presence or absence of each word was recorded for each section for each of the interactions, as above; this gave 80 scores of 0 or 1 for each target word.
Two cluster analyses, each using a different clustering criterion of similarity, were performed on each set of data, Temporal and Model; this resulted in four analyses: Temporal Between-Average, Temporal Within-Average, Model Between-Average, Model Within-Average. Four additional analyses using the two criteria were performed with the middle sections of each division's data, i.e. sections 2-9 of the Temporal division and the Query and Solution sections only of the Model division. Therefore, eight cluster analyses in total were carried out: Temporal BG, Temporal WG, Mid-temporal BG, Mid-temporal WG, Model BG, Model WG, Mid-model BG, and Mid-model WG. All analyses were accomplished using the Proximities and Cluster programmes of the SPSS-X statistical package.

The Proximities programme constructed a 2x2 contingency table of the frequency counts across all variables, i.e. each interaction’s sections, for each pair of words in turn, as shown below:

\[
\begin{array}{cc}
\text{WORD 2} & \\
\text{WORD 1} & \text{present} & \text{absent} \\
\text{present} & a & b \\
\text{absent} & c & d \\
\end{array}
\]

For example, if the word "because" was scored as absent in the Opening section but present in all the other Model sections for the initial interaction, its data set would be: 0, 1, 1, 1. If, for the same interaction, the word "morning" was scored: 1, 1, 0, 0, the contingency table between the two words would start out to be:
Additional counts, of course, would be added to the table for the other 19 interactions in a similar manner.

A Jaccard similarity measure with formula: \( \frac{a}{a+b+c} \), was used to compute the initial similarity matrix between all the words. From the two examples above, the formula would be: \( \frac{1}{1+2+1} \). The Jaccard formula was employed in order to exclude cases of absent-absent pairings (see cell "d" in the above figure) and any extraneous effect caused by frequent occurrences of this event. Absent-absent pairings were judged to be numerous in this data.

Hierarchical agglomerative clusters were performed beginning with the similarity matrix calculated from the Jaccard formula of all word pairings. The nearest words, or clusters, were merged to form one cluster according to one of the clustering criteria, Between-Group Average Linkage (BG) or Within-Group Average Linkage (WG). The similarity matrix was then re-calculated between existing words or clusters and the new cluster. These steps were then repeated until all words were united into one cluster.

The Between-Group (BG) criterion is the average similarity for pairwise links between two clusters or words. Specifically, the sum of pairwise similarities between clusters A and B (SUM\(_{AB}\)) is divided by the number of such similarities to give the formula: \( \frac{\text{SUM}_{AB}}{N_A(N_B)} \). For the Within-Group criterion, the averages of similarities within each cluster is added to the Between-Group formula. Therefore, the sum of all pairwise similarities among items within cluster A and within cluster B (SUM\(_A\), SUM\(_B\)) is added to the numerator. The denominator represents the number of distinct pairwise combinations that may be formed from the items in the combination of A and B, giving
the formula: \( \text{SUM}_A + \text{SUM}_B + \text{SUM}_{AB} / (N_A+N_B)(N_A+N_B-1)/2 \). (Anderberg, 1973)

The prominent word clusters in each of the eight analyses were interpreted by the experimenter based on two characteristics: 1. a distance coefficient between the words of more than .10 and 2. three or more words occurring together in that cluster before joining the final cluster.

4.3.3. RESULTS

The target list of non-topic-specific frequent words can be found in Appendix 7. Dendrograms, or tree structures, illustrating the mergers of words (and clusters) into clusters at each successive stage are shown for each of the two analyses (BG, WG) of the four data sets, (Temporal, Mid-temporal, Model, Mid-model).

The prominent word clusters in each dendrogram are also listed in Tables 10-17. Each cluster’s words are listed from top to bottom in the order they joined to the cluster. Therefore, the first two words in the list were the first to form the cluster. Each word was followed by its distance, or linking, coefficient determined by the clustering criterion as it entered the cluster. Words that joined first another word in a sub-cluster before the sub-cluster joined the cluster in question were denoted by brackets [ ]; they were joined first with the coefficient shown to the word above it in the list. The cluster that eventually contained all clusters in the agglomerative method is listed only by the first few words; this is Cluster 1 in all the tables.

Figures 8 and 9 are the dendrograms of the cluster analysis using full interactions temporally divided (all 10 Temporal divisions) with a Between-groups average linkage (BG) clustering criterion and a Within-groups average linkage (WG), respectively. Tables 10-11 list the prominent clusters of the full temporally-divided interactions using BG and WG clustering criterion, respectively.
Figure 8.
Between-group average (BG) Cluster Analysis with All Temporal Divisions.
Figure 9.

Within-group average (WG)
Cluster Analysis with All Temporal Divisions.
Table 10. **Prominent Clusters of the BG Cluster Analysis with all Temporal sections.**

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>and (.70)</td>
<td>hello (.75)</td>
<td>call (.50)</td>
</tr>
<tr>
<td>the (.70)</td>
<td>morning (.75)</td>
<td>thank (.50)</td>
</tr>
<tr>
<td>is (.62)</td>
<td>good (.52)</td>
<td>your (.34)</td>
</tr>
<tr>
<td>[it (.65)]</td>
<td>next (.23)</td>
<td>for (.25)</td>
</tr>
<tr>
<td>a (.58)</td>
<td>my (.20)</td>
<td>much (.15)</td>
</tr>
<tr>
<td>that (.56)</td>
<td>line (.15)</td>
<td>[very (.17)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>and (.70)</td>
<td>hello (.75)</td>
<td>call (.50)</td>
</tr>
<tr>
<td>the (.70)</td>
<td>morning (.75)</td>
<td>thank (.50)</td>
</tr>
<tr>
<td>is (.63)</td>
<td>good (.59)</td>
<td>your (.39)</td>
</tr>
<tr>
<td>[it (.65)]</td>
<td>next (.41)</td>
<td>for (.32)</td>
</tr>
<tr>
<td>you (.61)</td>
<td>my (.33)</td>
<td>very (.26)</td>
</tr>
<tr>
<td>a (.60)</td>
<td>oh (.27)</td>
<td>much (.22)</td>
</tr>
<tr>
<td>that (.59)</td>
<td>line (.23)</td>
<td>ha (.19)</td>
</tr>
<tr>
<td>to (.57)</td>
<td>problem (.20)</td>
<td>no (.16)</td>
</tr>
<tr>
<td></td>
<td>ringing (.18)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>question (.17)</td>
<td></td>
</tr>
</tbody>
</table>

Table 11. **Prominent Clusters of the WG Cluster Analysis with all Temporal sections.**

Figures 10 and 11 are the dendrograms of the cluster analysis using only the mid-divisions (2-9) of the temporally-divided data with BG linkage and WG linkage,
respectively. Tables 12-13 list the prominent clusters of the mid-sections of
temporally-divided interactions by BG and WG clustering criterion, respectively.

Table 12. **Prominent Clusters of the BG Cluster Analysis with Temporal Divisions 2-9**

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>and (.72)</td>
<td>one (.23)</td>
<td>new (.20)</td>
<td>around (.20)</td>
</tr>
<tr>
<td>the (.72)</td>
<td>this (.23)</td>
<td>old (.20)</td>
<td>them (.20)</td>
</tr>
<tr>
<td>you (.64)</td>
<td>which (.17)</td>
<td>now (.14)</td>
<td>problem (.11)</td>
</tr>
<tr>
<td>is (.62)</td>
<td>was (.15)</td>
<td>[out (.15)]</td>
<td>call (.07)</td>
</tr>
<tr>
<td>[it (.66)]</td>
<td></td>
<td></td>
<td>[we (.19)]</td>
</tr>
<tr>
<td>that (.59)</td>
<td></td>
<td></td>
<td>[some (.10)]</td>
</tr>
<tr>
<td>a (.57)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to (.55)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13. **Prominent Clusters of the WG Cluster Analysis with Temporal Divisions 2-9**

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>and (.72)</td>
<td>yeah (.25)</td>
</tr>
<tr>
<td>the (.72)</td>
<td>oh (.25)</td>
</tr>
<tr>
<td>you (.67)</td>
<td>was (.18)</td>
</tr>
<tr>
<td>is (.64)</td>
<td>this (.14)</td>
</tr>
<tr>
<td>[it (.66)]</td>
<td>[one (.23)]</td>
</tr>
<tr>
<td>that (.62)</td>
<td></td>
</tr>
<tr>
<td>a (.61)</td>
<td></td>
</tr>
<tr>
<td>to (.60)</td>
<td></td>
</tr>
</tbody>
</table>
Figure 10. BG Cluster Analysis with the Mid-Temporal Divisions 2-9.
Figure 11.
WG Cluster Analysis with the Mid-Temporal Divisions 2-9.
Figures 12 and 13 are dendrograms of the cluster analyses using all stages of model divisions, i.e. Opening, Query, Solution, Closing, with BG linkage and WG linkage, respectively. Tables 14-15 list the prominent clusters of the analysis using the full interaction divided according to Model by BG and WG clustering criterion, respectively.

Table 14. **Prominent clusters of the BG Cluster Analysis with all Model Sections.**

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (.87)</td>
<td>are (.79)</td>
<td>good (.52)</td>
<td>from (.58)</td>
</tr>
<tr>
<td>I (.87)</td>
<td>be (.79)</td>
<td>morning (.52)</td>
<td>will (.58)</td>
</tr>
<tr>
<td>it (.83)</td>
<td>which (.71)</td>
<td>hello (.45)</td>
<td>very (.45)</td>
</tr>
<tr>
<td>have (.79)</td>
<td>if (.69)</td>
<td>next (.16)</td>
<td>[would (.48)]</td>
</tr>
<tr>
<td>and (.76)</td>
<td>so (.68)</td>
<td>[ringing .20]</td>
<td></td>
</tr>
<tr>
<td>that (.72)</td>
<td>[they (.71)]</td>
<td>line (.09)</td>
<td></td>
</tr>
<tr>
<td>not (.71)</td>
<td>do (.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>actually(.55)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[can (.63)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[got (.60)]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 5</th>
<th>Cluster 6</th>
<th>Cluster 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>any (.50)</td>
<td>call (.54)</td>
<td>bit (.47)</td>
</tr>
<tr>
<td>there (.50)</td>
<td>for (.54)</td>
<td>some (.47)</td>
</tr>
<tr>
<td>should (.42)</td>
<td>right (.36)</td>
<td>also (.42)</td>
</tr>
<tr>
<td>no (.37)</td>
<td>[your (.48)]</td>
<td>might (.31)</td>
</tr>
</tbody>
</table>
Table 15. Prominent clusters of the WG Cluster Analysis with all Model Sections.

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (.87)</td>
<td>are (.79)</td>
<td>is (.77)</td>
<td>call (.54)</td>
</tr>
<tr>
<td>I (.87)</td>
<td>be (.79)</td>
<td>to (.77)</td>
<td>for (.54)</td>
</tr>
<tr>
<td>it (.84)</td>
<td>which (.74)</td>
<td>of (.73)</td>
<td>thanks (.41)</td>
</tr>
<tr>
<td>have (.81)</td>
<td>if (.71)</td>
<td>[the (.77)]</td>
<td></td>
</tr>
<tr>
<td>and (.79)</td>
<td>so (.71)</td>
<td>on (.71)</td>
<td></td>
</tr>
<tr>
<td>that (.77)</td>
<td>[they (.71)]</td>
<td>in (.68)</td>
<td></td>
</tr>
<tr>
<td>not (.75)</td>
<td>can (.67)</td>
<td>uh (.66)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>out (.64)</td>
<td>you (.64)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>thing (.62)</td>
<td>yes (.60)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>think (.59)</td>
<td>now (.57)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>going (.58)</td>
<td>yeah (.54)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or (.56)</td>
<td>right (.52)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>any (.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>because (.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>there (.52)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>like (.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some (.49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>no (.48)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cluster 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>good (.52)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>morning (.52)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hello (.38)</td>
<td></td>
</tr>
</tbody>
</table>
Figure 12.
BG Cluster Analysis
with All Model Sections.
Figure 13.
WG Cluster Analysis with All Model Sections.
Figures 14 and 15 are dendrograms of the cluster analyses using only the Query and Solution stages of the model-divided data with BG linkage and WG linkage, respectively. Tables 16-17 list the prominent clusters of the middle stages of the Model division analyses using BG and WG criterion, respectively.

Table 16. **Prominent clusters of the BG Cluster Analysis with Model Query and Solution Sections.**

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (.97)</td>
<td>are (.85)</td>
<td>bit (.47)</td>
<td>hello (.40)</td>
</tr>
<tr>
<td>I (.97)</td>
<td>be (.85)</td>
<td>some (.47)</td>
<td>morning (.40)</td>
</tr>
<tr>
<td>it (.91)</td>
<td>they (.74)</td>
<td>also (.42)</td>
<td>question (.21)</td>
</tr>
<tr>
<td>the (.89)</td>
<td>[which (.75)]</td>
<td>might (.31)</td>
<td></td>
</tr>
<tr>
<td>[to (.92)]</td>
<td>if (.72)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[is (.91)]</td>
<td>[so (.80)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>that (.87)</td>
<td>from (.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[you (.86)]</td>
<td>[will (.65)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>have (.82)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 17. Prominent clusters of the WG Cluster Analysis with Model Query and Solution Sections.

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (.97)</td>
<td>at (.72)</td>
<td>are (.85)</td>
</tr>
<tr>
<td>I (.97)</td>
<td>get (.72)</td>
<td>be (.85)</td>
</tr>
<tr>
<td>to (.93)</td>
<td>right (.64)</td>
<td>which (.78)</td>
</tr>
<tr>
<td>it (.92)</td>
<td>some (.56)</td>
<td>they (.76)</td>
</tr>
<tr>
<td>have (.90)</td>
<td>bit (.51)</td>
<td>if (.74)</td>
</tr>
<tr>
<td>is (.89)</td>
<td></td>
<td>[so (.80)]</td>
</tr>
<tr>
<td>[the (.92)]</td>
<td></td>
<td>will (.71)</td>
</tr>
<tr>
<td>from (.69)</td>
<td></td>
<td>was (.48)</td>
</tr>
<tr>
<td>would (.66)</td>
<td></td>
<td>at (.47)</td>
</tr>
<tr>
<td>very (.64)</td>
<td></td>
<td>much (.44)</td>
</tr>
<tr>
<td>thing (.62)</td>
<td></td>
<td>call (.42)</td>
</tr>
<tr>
<td>for (.60)</td>
<td></td>
<td>[give (.50)]</td>
</tr>
<tr>
<td>....</td>
<td></td>
<td>next (.39)</td>
</tr>
</tbody>
</table>
BG Cluster Analysis with Model Sections
Query and Solution.

Figure 14.
Figure 15.
WG Cluster Analysis with Model Sections Query and Solution.
A summary of predominant word clusters was made by extracting those clusters common to both analyses (BG, WG) on each data set (Temporal, Mid-temporal, Model, Mid-model); the cluster that eventually contained all the others was the cluster containing "a" in each analysis and was not counted in this summary. Two clusters were common to both analyses of the full temporal sections, in addition to the "a" cluster: "hello, morning, good, next, my, line" and "call, thank, your, for, very, much, ha". Both analyses of the middle temporal sections (2-9) had only one common cluster, "this, was, one"

Four common clusters were found for both analyses of the model's full stages: "are be which if so they can", "any there no", "call for thanks", and "good morning hello". The analyses of the middle two stages of the model-divided data had common clusters of "are be they which if so", and "bit some".

The cluster containing "are-be" appeared only in the Model division in both the full and middle stage analyses. This cluster could be conservatively catalogued as "are", "be", "if", "which", "they" and "so". Appearing in the analyses of the middle stages indicated a presence in the Query and/or Solution sections. Therefore, the proportion of occurrence for each word of the "are-be" cluster was calculated in both the Query and the Solution stages. As a control, the proportion of occurrence of words from the "a" cluster were also examined; from observation and intuition, these words would appear to occur frequently across all sections of the interaction. A higher rate of occurrence was found for the "are-be" cluster in the Solution section. Table 18 revealed the proportion of interactions containing "are" cluster words in the Query and in the Solution sections; Table 19 shows the proportion for the "a" cluster. Similar rates of occurrence for this cluster appeared in both the Query and Solution sections.
Table 18. Proportion of interactions containing the "are" cluster words in the Query and Solution sections.

<table>
<thead>
<tr>
<th></th>
<th>are</th>
<th>be</th>
<th>if</th>
<th>so</th>
<th>which</th>
<th>they</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query</td>
<td>.40</td>
<td>.28</td>
<td>.30</td>
<td>.26</td>
<td>.32</td>
<td>.45</td>
</tr>
<tr>
<td>Solution</td>
<td>.87</td>
<td>.87</td>
<td>.89</td>
<td>.83</td>
<td>.43</td>
<td>.77</td>
</tr>
</tbody>
</table>

Table 19. Proportion of interactions containing the "a" cluster words in the Query and Solution sections.

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>and</th>
<th>is</th>
<th>it</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query</td>
<td>.89</td>
<td>.94</td>
<td>.92</td>
<td>.85</td>
<td>.92</td>
</tr>
<tr>
<td>Solution</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>.98</td>
<td>.94</td>
</tr>
</tbody>
</table>

4.3.4. DISCUSSION

Analyses of both the Temporal and Model type divisions using the full interaction revealed two more clusters not found in analyses of only the middle sections of this data. The clusters in their most complete form in the full temporal analyses as "hello morning good next my line" and "call thank your for very much ha". The analyses suggest these words cluster at the extremes of the interactions; intuitively, these words are found in opening and closing exchanges, respectively.

The first cluster contained conventional greeting exchanges of "hello" and "good morning" along with particular words from a radio phone-in programme, i.e.
"next" on the "line". In addition, the possessive pronoun "my" was found prefacing the query as the Layman acknowledged the problem as his/her own.

The second cluster included words used in typical closing phrases such as "thank you very much" and "thank you for your call". Inclusion of laughter, represented by "ha", in the closing section's cluster corresponds with Jefferson (1979)'s suggestion that laughter can be used as a "wrap-up" of topic or pre-closure because it fills the turn without renewing the topic.

The Model division's analyses revealed one more cluster than the Temporal analyses. This cluster was also found in the middle section analyses. The "are-be" cluster consisted of "are", "be", "if", "which", "they" and "so". Examination of its occurrence revealed that these words appeared more often in the Solution section than in the Query section. In contrast, the words of the "a" cluster, the final agglomerated cluster in all the analyses, showed very similar proportions of occurrence in each section. Therefore, a distinctive presence for the "are-be" cluster between the Query and Solution sections was presumed. However, in contrast to the opening and closing clusters, the function of the "are-be" cluster could not be intuitively identified. Therefore, further examined and verification of both the distinctive presence and the function of this cluster was undertaken with a larger sample.

The results of the opening and closing word clusters in the initial study promote cluster analysis as an isolator of conventional words and phrases doing specific tasks. However, the radio programme's potentially standardized format and constant mediator presence may have caused abnormally high agreement in these words although opening/closing phrases are highly conventionalized anyway. Nevertheless, it is problematic whether the "are-be" cluster found differentially between solution and query section could similarly identify conventional phrases of particular tasks.
4.4. VERIFICATION

4.4.1. METHOD

Cluster "a", a cluster showing high-frequency occurrence consistently across the entire interaction, demonstrated similarly high proportions of interactions in both the Query and Solution sections, .91 and .98 respectively. However, the proportion of interactions containing words from the "are-be" cluster dropped for the Query section (.31) but remained high for the Solution section (.86). These differential effects of the "are-be" cluster, found in the initial study, were verified using the FX2 sample of fifty-three interactions. Single counts of the number of interactions in which the "are-be" cluster words occurred in the Query and in the Solution section were used in order to avoid biased effects from same-interaction repetition. A similar count of the consistent "a" cluster words was used as a control.

The inferred difference of frequency of "are-be" cluster words in the query as compared to presence in the solution section was tested for significance using a Z-test; this test allowed elimination of any extraneous absent-absent cases in which words failed to occur in either section. A Chi-square tested for a distinctive presence in the query and solution sections between the two clusters; half the interactions were used as the scores for each cluster in order to maintain independence.

4.4.2. PROCEDURE

The FX2 sample of fifty-three interactions were divided as in the initial study into the model-related sections of Query and Solution. The Query started from the Layman's first multi-utterance turn and continued until the Expert's first multi-utterance turn that was of an informing, and not questioning, nature. The Solution section started from the Expert's first informative multi-utterance and included all multi-utterance turns by the Expert. The words investigated for the "are-be" cluster were: "are", "be", "if", "so", "which", "they"; the words investigated for the "a"
cluster were: "a", "and", "it", "is", "I". For each of the two sections, Query and Solution, a count was made for each word of the number of interactions in which it was present in that section.

A Z-test of proportions between two binomial populations in order to test the "are-be" cluster's differential presence in the two sections. The number of interactions with "are" cluster words only in the Query section was compared with the number of interactions only in the Solution section.

A Chi-Square was undertaken to test the difference between the "are-be" and the "a" clusters showing differential presence between the Query and Solution sections, as suggested from Tables 18 and 19. Half the interactions were randomly chosen as counts for the "a" cluster; scores were from the following interactions: G2, G3, G5, G6, G9, G12, B2, B3, B5, B7, B10, B12, B13, H1, H3, H4, H5, H6, H11, H2, J4, J5, J8, J9, J11, J14. The other interactions provided scores for the "are-be" cluster. For each cluster, a count was made of interactions in which each word occurred differentially across sections, i.e., it occurred in either one section or the other but not both. The number of interactions in which the word occurred similarly across sections, i.e., it occurred in both sections or was absent from both sections, was also tabulated. A Chi-square test was then undertaken between the presence in only one section ("different") and the presence or absence in both sections ("same") for the "a" cluster and the "are-be" cluster.

4.4.3. RESULTS

An average 3.2 interactions contained "are" cluster words only in the Query but not in the Solution section. In comparison, an average 26.5 interactions contained these words only in the Solution section. The Z-test between proportions of presence in either one section or the other was significant (Z=10.42, p<.001).

For the "are" cluster, the mean number of interactions showing similar
occurrences between Query and Solution sections, i.e. either present in both or absent
in both, was 11.8; the mean number of interactions with a differential effect, i.e.
presence in only one of the sections, was 15.2. However, for the "a" cluster, an
average 24.8 interactions had similar occurrences, whereas only an average of 1.2
interactions had differential effects. The Chi-square test between the two clusters on
the presence in only one section ("different") or the presence or absence in both
sections ("same") was significant \( X^2 = 40.89 \) (df=1) \( p<.001 \).

4.4.4. DISCUSSION

The z-test of proportions revealed that significantly more interactions
contained "are" words for the solution section only rather than in the query section
only. This result indicated a useful characteristic potentially identifying one stage
over the other. The Chi-square showed a significant difference between the target
"are" cluster and the consistent control cluster "a" between consistent occurrence or
distinctive occurrence of words across the sections. The "are" cluster was
distinctively evident in the solution section than in the query section. The
comparison with the "a" cluster indicated that the result would not be due to any
general difference between sections.

The cluster of words: "are", "be", "if", "so", "which" and "they" occurred in a
significantly greater proportion of interactions in the Solution section than in the
Query section. It would seem the words of the "are" cluster were used for purposes
found more often in the solution section and/or for those not found in queries. This
cluster, however, would not be an extremely useful indicator of the Solution over
the Query section because the words could be found in both sections approximately
30% of the time. However, further investigation of the actual use of these words in
each section may indicate specific tasks or functions which then could be identifiers.

The word "are" was used mostly for description of items and states of affairs
by both the Layman and the Expert. However, the Expert also used "are" for instructions, "make sure they are..." and justifications, e.g. "a lot of people are doing it". These actions were found almost exclusively in the solution sections. The Expert also used "are" in addressing affirmations or check questions to the Layman, e.g. "are you..", "you are right" which also occurred within the solution section.

The word "be" was typically used in conjunction with other verbs, e.g., "might/may be", "should/could/would be", "will be", "seems/needs to be", "to be able". Almost all the uses had a future or unknown sense about them and so carried a tentativeness which was appropriate for the Expert’s actions which necessarily dealt with unknown results in future, conjectured states whereas the Layman dealt mostly with known background and past events. Conjecture arose in the identification of the appropriate solution and its ideal method of execution, e.g. "best thing would be", "you would be unlikely to", "it may/ could be", "unlikely you will be able". This word was also used in instruction and commands, found predominantly in the Solution, with a future sense, e.g., "it needs to be", "don’t be".

The word "if" denoted a certain speculativeness that, in the query, was only used in polite inquiry, e.g. "I wonder if you can help". Use of "if" was prevalent in the solution section where guesswork is done. The actual functions of "if" varied from a hint to the Layman on how to judge the appropriateness of the solution, e.g. "if in 18 months, .." to a qualification of the solution or a warning to the Layman, e.g., "if you are sure", "even if you were to". It was also seen as a justification "if I was going to" in which the Expert was perhaps inviting Layman to review the solution for appropriateness. It was frequently used in the choice of a solution path.

The word "so" was usually only used by the Layman as a descriptive adverb, e.g., "it is so big". Coulthard et al. (1981) thought "so" signalled a resumption of topic talk after a digression. In this material, mostly the Expert used "so" as an introduction to a summation, result or solution as in the example below:
E so it's as wide as it is high so yes you did the right thing:
unfortunately the weather this year has proved to be a little bit too
hot for them, and so we've got a little bit of brown growth on them.
cut off the brown growths, back to hopefully some live wood, try
and protect it from the sun if possible which means some form
of uhm plastic uhm open weave plastic not uh um polythene
covered (FX2B9)

The word "which" was used both by Layman and Expert as an opening to
descriptive clauses about qualities, locations or characteristics. However, the Expert
also used it in clauses about function, describing ability to solve the problem or
justifying a decision by explaining relevant properties.

E hhh. after all the hard work you've gone to uh I would be tempted
to leave it sort of in it's natural state the problem is whether you're
going to light fires in it.
L No:
E because obviously soot which is probably the biggest stain problem
that fireplaces suffer from...(FX2H7)

The use of "they" was consistently as a pronoun for items or people in
description; however, the Expert used it more often and in more abstract terms in the
Solution section.

L yeah and um these ones have actually produced some seeds now I
wonder if I can actually grow these seeds and what plants am I likely
to get
E um you'll probably get quite a mixture because some of the salvias
have been uh grown over the last few years and um they've done
quite a bit of crossing to get um these different colours (FX2B5)

So, all the words in the "are-be" cluster were involved with the special
qualities of solution explication. "If" and "be" denoted the tentative or conditional
qualities of the solution conjecture and of the qualification of assessment. "Be" and
"are" were often found in instructions and commands. "So" and "which" could be
categorized as signals of formulation of a result or a summation. The words "are"
and "they" appeared to be used in abstract descriptions. Therefore, these words
seemed to reflect the difference between the concrete presentation of facts in the Query and the tentative and abstract formulations of remedies in the Solution.

Given the multi-functionality of words and the number of very common words occurring due to the non-topic-specific criterion, it would be expected that many words would be evenly distributed across the sections of the interactions. Therefore, the results of three distinctively-occurring clusters is gratifying. The validity of the results are corroborated with intuitive notions of conventional exchange words occurring in the Opening and Closing stages, e.g. "good morning", "thank you". The cluster found to occur differentially between the Query and Solution states validates their separate existence.

4.5. CONCLUSIONS

Do these two novel methods of analysis help in the precise description of the states of the structural pattern of consultations? In Chapter 3, the model of Start, Query, Solution and Closing states based on turn source and relative length was significantly better than a model of chance and was verified to be a good fit. In Chapter 4, all four states of this model were verified through distinctive occurrences of words found for each state. Furthermore, these word clusters could be seen to indicate specific tasks found within the states they marked. For example, "hello", "good morning", were used in greeting exchanges and "thanks very much" were linked to the closing and pre-closing exchange. The words of the "are-be" cluster functioned in the solution functions of tentative, abstract explication and instruction.

Strong links for greeting and ending clusters found in the mid-section Model analyses suggest that sections arbitrarily divided temporally were not useful if desiring to divide structure by sub-tasks. Task would be more explanatory of the pattern's stages than turn-type. Although, the flexibility of the model was helpful in pinpointing the precise stages to investigate, the distinctive word clusters within those
stages resulted in identifications of the tasks themselves. Therefore, both types of analysis and both types of units, turn-type and task together, though at different stages, were worthwhile in a more precise description of the tasks that best define the sequential pattern.

However, many of the words in the opening and closing clusters were linked to the Chaired radio format, e.g. "line", "call" recalling past hazards of esoteric analysis. What special constraints exist in these mediated radio phone-in programmes? What is the effect of the radio Chairman, this third person not found in natural interactions? The investigation reported in Chapter 5 attempted to deal with these issues by using dyadic phone consultations without chairman.
Chapter 5 APPLICATION TO UNCHAIED INTERACTIONS

5.1. INTRODUCTION

Are "phone-in" programmes using a Chairman to mediate between expert and novice different in structure from unchaired consultations? The role of chairman is not a feature of all consultative interactions, e.g. doctor-patient. The chairman role has been proposed to have recognized authority to manage topic and turn allocation. (Atkinson et al., 1978; Atkinson, 1982) Therefore, one might expect structure between chaired and unchaired interactions to be different topic and turn rights must be negotiated by others than the chairman.

A chairman who is the host of the show, like the radio phone-in programmes in this thesis, may be particularly sensitive to the audience. Greatbatch (1988) attributed much of the structure of television news interviews to an awareness of the audience. For example, very formal news interviews were to be seen by the audience as strictly neutral and accordingly less feedback or response was provided in the talk. Informal chat-show interviewers, however, tried to include the audience as a third-party eavesdropper and so the structure corresponded more closely to everyday conversation with regard to the presence of back-channels, assessments, and reciprocal stories. Some chaired radio programmes might have a well-known format which participants would follow. In addition, time pressures of a radio programme may influence the structure of the interactions. Do these considerations result in different structures for unchaired consultations not subject to an audience?

Investigation was made of a sample of unchaired consultations and compared to results found for the chaired phone-in queries. For optimal comparison, this sample was similarly telephone consultations but dyadic, involving only the Expert and a Layman. Three different studies, reported in this chapter, applied methods already undertaken in this thesis. The unchaired consultations were examined for Opening, Query, Solution, and Closing states (see Chapter 3) or for any other sections of talk. Compensation for
the loss of the radio Chairman’s role was also investigated by identifying its tasks from a sample of the Chaired interactions. In addition, one Unchaired interaction underwent a detailed, descriptive Conversational Analysis (CA) (see Chapter 2) in order to more closely detail its structure.

5.2. STUDY 1: MODEL AND CLUSTER ANALYSIS CONFIRMATION

5.2.1. DESIGN

Telephone calls into University College London’s Computer Centre advisory service were recorded. This service was run in conjunction with an on-site advisory service, both of which were handled by the same advisor on duty. The service was available to all students and staff of the university and to other users from outside institutions using the network.

Four advisors were recruited and they recorded the calls in their normal setting without the presence of the experimenter. The calls were transcribed and turns described by source and length as in previous chapters. This data was then tested against the estimated probabilities already established for the 4-state and 3-state models found to be a good fit in Chapter 3. Fit was tested for a null model, and then all the models were compared. An investigation of the number of Expert and Layman turns throughout the solution section was made as an indication of the efficiency in the solution process. The differential presence of the "are-be" cluster in Query and Solution sections, as indicated in Chapter 4, was tested in these interactions.

5.2.2. SUBJECTS

There were four advisors: three male and one female. They all volunteered to participate. The advisors were told only that the recordings would be assessed in order to suggest ways of improving the service. They were not directly supervised, operating the tape recorder themselves. At the time of recording, callers were not told about the
study or that they were being recorded. They were contacted later by the experimenter for permission to use the data in confidence. These techniques allowed both advisors and callers to interact as normally as possible without external supervision from the experimenter.

Callers used in the analyses included 4 females and 11 males, with two repeat callers. The callers came from the following departments: 5 in sciences, 3 from the arts, 3 from social sciences, 1 in administration, 1 external to the university and 2 internal but department unknown.

5.2.3. MATERIAL

The phone calls were recorded in the Computer Centre, with permission, during the first half of spring term, from mid-January to mid-February, 1990. The recordings were made using a special microphone attached to the handset of the phone by a suction cup. A dual connector allowed this microphone and a fixed standing microphone next to the phone to record the voices of both the caller and the advisor. A small portable tape recorder was used.

The calls occurred on shifts that ranged throughout the day from 9:30 to 5. All calls that occurred during an advisor's shift were recorded except for personal calls. The total conversations used in the study were 15 and labelled the Computer Centre (CC) sample. (see Appendix 8) The durations of the interactions varied from 1 minute 9 seconds (CC20) to 9 minutes 46 seconds (CC11). The average length was 4 minutes 6 seconds (s.d.= 3 minutes). Four of the interactions included some break in the recording when the expert consulted others off the line. Other interactions had long silences or background talk during the solution explication.
5.2.4. PROCEDURE

The equipment was set up by the experimenter at the start of every session. The advisors were asked to carry out conversations as normally as possible with the addition of the following steps: 1. to press the record button on the recorder before they answered the phone, and 2. to ask the caller for his name and department or extension/phone number any time during the conversation, for later reference. If the caller questioned this, the advisors were asked to simply say that a survey was being done and to give no hint of the recording.

Recordings were made of 30 calls. Out of these, permission was only obtained from 25 callers; one caller refused, the others could not be contacted. An initial review of the recordings was made to eliminate from consideration interactions that were incomprehensible. Ten calls were eliminated due to poor quality of recording. This was mostly caused by a loud buzz from a computer terminal located immediately adjacent to the phone.

For the fifteen remaining interactions, a mainly orthographic transcription was typed into the computer for each interaction. Printouts were used to correct the transcription during a second review of the recordings. Then, paralinguistic activity and other details, e.g. location of simultaneous speech, were added to the transcription using conventions developed by Jefferson (see Appendix 1). Briefly, this included indications of all extraneous linguistic sounds, e.g. inhalations, descriptions of recognizable non-linguistic sounds, e.g. clock chimes, and suggestions of tempo, stress, intonation and pause lengths. This procedure was done at least twice before editing the computer file. A final check of the transcription was made using a printed copy and the original recordings. The final transcriptions of the CC interactions can be found in Appendix 8.

Advisors were marked as Expert (E) and the callers as Layman (L). The speech of each new speaker was started on a separate line; all the lines were numbered. The
CC sample of 15 interactions involved approximately 10,000 words.

Sections that dealt with procurement of the name and department were eliminated from the initial analyses because they were known to be artificially included. All sequences of opening or closing within the query or solution sections were excluded when they involved going "off the line" for further consultation. Each interaction was then coded by Turn-Type using the method found in the modelling study (see Chapter 3).

The turns that were not back-channels were assessed. Back-channels were considered as any one of the following:

1. minimal responses, e.g. "yeah", "umhm", "I see", "right", "okay"
2. brief comments, e.g. "sounds good", "oh I can believe it", "me too"
3. brief requests for clarification or repetition
4. brief restatements or repetitions of speaker's immediately preceding thought
5. completions, or "fillers" of the speaker's phrase allowing the speaker to continue. (Duncan, 1972, 1973; Yngve, 1970)

Non-back-channel turns were classified by source role and length. In order to determine short or multi-utterances, independent or "conversationally meaningful" units were first identified using Danziger (1976)'s criteria as follows:

1. Clauses
   An independent clause by itself or along with one or more dependent clauses is a unit.
   a. A unit includes the dependent clause with its independent clause even when a different utterance separates them; in this case, the dependent clause will usually elaborate or explain the independent clause.
   b. In connection with an independent clause, dependent clauses are distinguished by an initial subordinating conjunction or pronouns, e.g. "who", "which", "that", "if"
"when". Another independent clause may be distinguished with a coordinating conjunction or a conjunctive adverb, e.g. "and", "but", "or", "because", "so that", "for".

2. False starts
Words not conveying the speaker's meaning and/or incomplete in meaning are not counted as utterances, e.g., "well uh".

3. Interruptions
   a. If one independent clause is interrupted by another independent clause (by either speaker or listener), each is scored as a separate unit.
   b. A dependent clause alone may be a unit if it occurs after an interruption that is preceded by a non-utterance; the non-utterance is not counted as a unit.

4. Repetitions
A repetition is not counted as a separate unit if exactly the same words and intonation occurs and no unit has intervened between repetitions.

5. Single words
Single words or combinations of words without clear subject and predicate are counted as units only if they seem to be full units of conversation.

6. Acknowledgements.
Affirmations, negations and confirmations e.g. "yes", "no", "that's right", are typically counted as units unless there is a immediate continuation to explain or to elaborate or if there is a preceding statement in which this is added as a tag question; in these cases, they are not counted as separate units.

Then, those turns with more than 2 such units were coded as Multi-utterances (M) whereas the remaining were considered Short Turns (S), recalling Schegloff's (1982) argument about transition pressure making the end of each unit vulnerable to turn loss. This resulted in four Turn Types: Expert Short turn (ES), Expert Multi-utterance (EM), Layman Short turn (LS), and Layman Multi-utterance (LM).

The model developed in Chapter 3 was tested for fit with these dyadic
consultations. Each interaction was divided into four states. The Opening state started with the initial turn and continued until the Query state which started with the first LM Turn Type. The Query state continued until the start of the Solution section with the first EM Turn Type. The Closing section started with the last EM turn and ended with the last turn.

Turn-Types were counted for the jump or stay in Stage 1, and possibly Stage 2, of the four states of the model. The estimated probabilities of the four-state model of Opening, Query, Solution and Closing from Chapter 3 were tested against the CC event counts. Also, the estimated probabilities of the three-state model of Opening, Query and Solution was tested against the appropriate event counts in the CC material. These were found by collapsing the event counts of the Closing state into the Solution event counts. In addition, a "null" model was constructed by assuming all the transitional frequencies that weren't fixed had equal probabilities. All the models were tested for goodness-of-fit using the likelihood square ratio formula: \[ G^2 = 2 \times \left[ \sum f_q \times \left( \frac{f_q}{N \cdot P_{re}} \right) \right] \]

where \( f_q \) is the frequency for each cell, or event, and \( P_{re} \) is the estimated transitional probability. Degrees of freedom used were \( \text{df}=\text{rows(columns-1)}-1 \) for the null model, and \( \text{df}=\text{rows(columns-1)} - \text{Pr}_{re} - 1 \) for the estimated models. The null model's likelihood square ratio was compared with both the 4-state and 3-state likelihood square ratios in order to test the existence of a pattern.

The number of turns and Turn-Types in the solution section were calculated and described as in Chapter 3; the mean number of turns from the first Expert Multi-utterance solution to end of the interaction were calculated along with the average number of EM and LM Turn-Types.

The number of interactions which contained the words "are", "be", "if", "so", "which", and "they" in the Query and in the Solution sections were counted. The proportions of interactions with cluster words in each section gave an independent measure, impervious to individual repetition.
5.2.5. RESULTS

5.2.5.1. **Model Results**

Turns that were considered for analysis, i.e. not back-channels, were highlighted in bold print in the transcriptions of each interaction in Appendix 8. Each interaction’s sequence of Turn-Type units used for the model appear in Appendix 9. Using the initial estimations taken from the FX1 sample (see Chapter 3), the estimated transitional matrix of probabilities for the eight sub-states of the model were: Opening (O1, O2), Query (Q1, Q2), Solution (S1, S2), and Closing (C1, C2) These are reproduced from Chapter 3 in Figure 16.

Figure 16. The estimated transitional matrix for the 4-state model from Chapter 3.

<table>
<thead>
<tr>
<th>t</th>
<th>O1</th>
<th>O2</th>
<th>Q1</th>
<th>Q2</th>
<th>S1</th>
<th>S2</th>
<th>C1</th>
<th>C2</th>
<th>END</th>
</tr>
</thead>
<tbody>
<tr>
<td>O1</td>
<td>-</td>
<td>.625</td>
<td>.375</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>O2</td>
<td>-</td>
<td>.11</td>
<td>.89</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Q1</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.67</td>
<td>.33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Q2</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.31</td>
<td>.69</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>S1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.79</td>
<td>.21</td>
<td>0</td>
</tr>
<tr>
<td>S2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.84</td>
<td>.16</td>
<td>0</td>
</tr>
<tr>
<td>C1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.33</td>
<td>.67</td>
</tr>
<tr>
<td>C2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>.25</td>
<td>.75</td>
</tr>
</tbody>
</table>

For the null model, all the probabilities were replaced by equal probabilities for the two events per state, i.e. .50. The actual count of interactions adhering to each event type in the four-state model appears in Table 20. The count of events for the combined Solution and Closing section (Sol/Closing) used for the three-state model appears in
Table 20. **Actual event frequencies for the four-state model from the CC interactions.**

<table>
<thead>
<tr>
<th>state at time $t$</th>
<th>t+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query 1</td>
<td>Opening 2</td>
</tr>
<tr>
<td>Opening 1</td>
<td>8</td>
</tr>
<tr>
<td>Opening 2</td>
<td>7</td>
</tr>
<tr>
<td>Solution 1</td>
<td>Query 2</td>
</tr>
<tr>
<td>Query 1</td>
<td>4</td>
</tr>
<tr>
<td>Query 2</td>
<td>11(^a)</td>
</tr>
<tr>
<td>Closing 1</td>
<td>Solution 2</td>
</tr>
<tr>
<td>Solution 1</td>
<td>3(^b)</td>
</tr>
<tr>
<td>Solution 2</td>
<td>12(^b)</td>
</tr>
<tr>
<td>End</td>
<td>Closing 2</td>
</tr>
<tr>
<td>Closing 1</td>
<td>0(^c)</td>
</tr>
<tr>
<td>Closing 2</td>
<td>15(^c)</td>
</tr>
</tbody>
</table>

\(^{a,b,c}\) Actual event counts

---

Table 21. **Actual event frequencies for the three-state model's solution/closing section from the CC interactions.**

<table>
<thead>
<tr>
<th>state at time $t$</th>
<th>t+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sol/Closing 1</td>
<td>0</td>
</tr>
<tr>
<td>Sol/Closing 2</td>
<td>15(^a)</td>
</tr>
</tbody>
</table>

\(^{a}\) Actual event count
Likelihood square ratios were then calculated for each model. The likelihood square ratio for the 4-state model was $G^2 = 93.08$, $df=55$. This was significant at $p<.001$ and so did not meet the null hypothesis required for goodness-of-fit. The three-state model, however, was not significant and therefore, fulfilled the null hypothesis for goodness-of-fit ($G^2 = 37.10$, $df=50$). The likelihood square ratio for the null model was significant ($G^2 = 96.77$, $df=50$, $p<.001$) and so fit was not indicated. Comparing the null model and both the 4-state and 3-state models, the null model had a higher result with less degrees of freedom; therefore, it could not be said to be a significantly better model. The differential likelihood square ratio comparing the 4-state and 3-state ($G^2 = 55.98$, $df=20$) was significant at $p<.001$ and so the 3-state model was a significantly better fit than the 4-state model. Therefore, the 3-state model was the best model of those examined for this material.

In the solution and closing states, the mean number of total turns was 20.27 for the unchained CC interactions as compared to 8.75 for the chaired FX interactions (see Chapter 3). The mean number of EM turns in this section per unchained interaction was 4.27 compared with 3.12 for the chaired. The mean number of LM turns was 1.53 as compared to .62 per chaired interaction.

5.2.5.2. Cluster Analysis Results

The total number of interactions in which each word of the "are-be" cluster words occurred in the query (Q) and solution (S) sections was counted and reported in Table 22. The proportion of interactions with these words in the Query section was .18 and in the Solution section, .69; in the chaired consultations, these figures were on average .34 for the Query and .78 for the Solution section (see Chapter 4).
Table 22. The number of CC interactions containing the "are" cluster words in the Query and Solution sections.

<table>
<thead>
<tr>
<th></th>
<th>are</th>
<th>be</th>
<th>if</th>
<th>so</th>
<th>which</th>
<th>they</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query</td>
<td>8</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Solution</td>
<td>15</td>
<td>11</td>
<td>13</td>
<td>11</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

5.2.6. DISCUSSION

The 3-state model of Opening, Query and Solution/Closing fit the data well; the 4-state model with separate Solution and Closing sections did not fit the data and, in comparison, was significantly inferior to the 3-state model. However, both models could be interpreted to be better than the random null model. Therefore, a consistent, structural pattern with distinctive sequential states and developed from chaired consultations was supported in these unchaired interactions. The model that fit the CC material consisted of an Opening, a Query and a Solution state that contained the 4-state's Closing section. So results were similar to the chaired interactions except for a stronger deviation for the Closing section from the estimated probabilities. This appears to be due to a longer and more interactive "Closing" section in the unchaired interactions.

So, like the chaired consultations, the unchaired telephone consultations typically contained 60% of the interactions with extended Opening and Query sections containing talk beyond the first exchange whereas approximately 40% of the interactions moved immediately to the next section. The interactive Query section was slightly longer than the Opening pair sequence although both were brief. The final Solution/Closing section never moved directly to a finish on the initial turn but typically continued on with a
long series of turn pairs with only about 20% of the interactions finishing after each turn pair.

The proportions for presence of the "are-be" cluster in the query and in the solution sections were similar to that found in the chaired data. These two states contained similar word clusters to the chaired consultations. Therefore, distinctive Query and Solution states, and perhaps distinct tasks, were confirmed in unchaired consultations.

In examination of the Solution/Closing section, the averages of total turns and both EM and LM Turn-Types were all higher than previous totals from the chaired consultations. This indicated more interactive talk in this Solution section. Solutions were also of a more varied type than in chaired interactions. Five solutions involved referrals to other experts and three, eventual determinations of no possible answer. Two were complicated diagnoses of fault, six solutions involved conferring with other experts and three involved arrangements to meet in-person. The increased activity in this last state pointed to more on-line problem diagnosis and follow-up arrangements than in the chaired radio programmes. Less time-pressure in the unchaired situations in contrast to the chaired programme would allow this. The chairman might be involved in resolving the time pressure of the radio interactions.

So, although the model and cluster results confirmed that these unchaired consultations were similar in structure to the chaired consultations, differences existed in the Solution state. The unchaired consultations appeared to allow more time and talk for negotiation of a solution. Does the Chairman function to restrict this Solution section? Questions about the Chairman's functions and the fulfilment of these in unchaired consultations were addressed in a descriptive analysis of a sample of chaired consultations.
5.3. STUDY 2: THE CHAIRMAN’S ROLE

5.3.1. METHOD

A sample of consultations from chaired phone-in programmes already recorded and transcribed were examined for specific contributions made by the Chairman. The function of each turn by the Chairman was interpreted and observations generalized. The unchaired interactions were then surveyed for how these functions were accomplished without the intervention of a chairman.

The twenty-four interactions from the initial sample of LBC radio’s Fix-it Phone-in Programme (FX1) were used. (see Appendix 3) This programme typically consisted of three topical segments, following consecutively, lasting roughly an hour in length each segment was on a separate topic involving its own expert specialist. The Layman phoned in to the Chairman and the Expert who were face-to-face. The material was recorded on 28 January 1989 and included 10 on gardening, 8 on hardware, and 6 on audio equipment. The Chairman, was the same for all the interactions and was female; all the experts were male.

The procedure for transcription of the interactions was previously outlined in Chapter 3. Recordings were made using a radio-cassette recorder. Orthographic transcriptions were typed into the computer for each interaction and paralinguistic activity and other details, e.g. location of simultaneous speech, were added to the transcription using conventions developed by Jefferson (see Appendix 1). The transcription was edited at least three times.

As in Chapter 3, only turns that were not back-channels were analysed. These turns are denoted by bold role markings, i.e. C, E or L, in the transcription in Appendix 3. Back-channels were considered as any one of the following:
1. minimal responses, e.g. "yeah", "umhm", "I see", "right", "okay"

2. brief comments, e.g. "sounds good", "oh I can believe it", "me too"

3. brief requests for clarification or repetition

4. brief restatements or repetitions of speaker's immediately preceding thought

5. completions, or "fillers" of the speaker's phrase allowing the speaker to continue. (Duncan, 1972, 1973; Yngve, 1970)

Each turn by the Chairman was examined and its function interpreted given the features of conversation found so far. Most especially, features were used from those previously described by Conversational Analysts and used in the Conversational Analysis (CA) of Chapter 2. The functions of the turns were generalized for a description below.

5.3.2. RESULTS

The Chairman was found to have opened all the interactions and closed all but one. From interaction FX1GY, examples of an opening and a closing, after the Expert's summation, are seen below:

Opening

C We'll go to Amy now, who's in (.). Newham. Hello Amy,

Closing

E Yes the- I think the unheated conservatory is absolutely ideal for them as long as they're not gonna get (.). uhtoo much of a blasting from the sun

C umm okay Amy thanks for that

In only half of the interactions was the opening and closing the extent of the Chairman's contribution. Eighteen turns besides opening and closing were taken by the Chairman. Half of these were turns that directly preceded the last exchange of the interaction, which was an Expert turn and then the Chairman Closing turn. Therefore,
they should be considered part of a pre-closing exchange since they occur just prior to
the closing. These pre-closings took forms found by CA analysts, as stated in Chapter
1, of humorous statements, off-topic general interest statements, and summations, seen
respectively in the examples below:

Humorous

C Do they like milk and sugar with it?
E hah I don’t think so no hehehe
C Just checking (FX1GM)

Off-topic general-interest

C mm I- like you actually I wouldn’t mind a few frosty mornings as well
E Yeah
C Uh Jean’s next in Bagshot (FX1GE)

Summation

C So they need quite a bit of light do they
E Yes the- I think the unheated conservatory is is absolutely ideal for them as long
as they’re not gonna get (.) uhtoo much of a blasting from the sum
C umm okay Amy thanks for that (FX1GY)

Four more turns could be considered a pre-closing attempts. These were in interactions
FX1GA, FX1GP, FX1HH, and FX1HC. For example, the statements below seemed to
request final comments on the solution from the Expert:

C Um sounds as if Allen has got quite a digging job (FX1GA)
C I suppose it’s fortunate that it’s happened only eighteen months after the completion
date (FX1HH)

One humourous question appeared to attempt to initiate a pre-closing after a
solution and apparent Layman acceptance, but the Layman then re-opened talk by asking
a follow-up question:
E Yes I tend to go around them once a day * and uh just tickle them (.) and uh it actually sets the fruit very well
L Right .hh
C (You’d have to wear a black and yellow jersey? wouldn’t you
E Yes that’s right and don’t forget the buzz buzz bit that’s very important. But that actually does the trick
L [Do you-
L Do you know of any um books on the subject on on growing natural plants, (FX1GP)

So other than Opening and Closing turns, i.e. the first and last turns of the interaction, 13 of the 18 remaining could be conceived as preparation for the Closing of the interaction. In 72% of the interactions with more than opening and closing, the Chairman participated in the pre-closing, making this the most prevalent function besides opening and closing.

Two statements occurred immediately after the Expert’s initial statement of the Solution and one statement occurred in the middle of a solution. In these two examples, the Chairman interjected a remark or question immediately after the start of the solution, as in the example below:

E yeah It’s this curse we call the dual flush system which-
L (oh yes)
C [[ Oh we’ve had this before haven’t we ye:s
E [Yes somebody worked out in their wisdom somebody who was talking... (FX1HP)

One other turn dealt with the resolution of turn-exchange ambiguity. The question appeared to function to direct the next-turn after a long pause meant the turn exchange became necessary but ambiguous in FX1GA:

E get some decent loam and put it in and then use plenty of iron-based lawn dressings like musculus for example because they keep the grass really tough and nice and dark green and actually suppress the fungus as well (pause)
E is-
C [[Right have you got lots of these rings Allen?

In another Chairman turn, she admitted a lack of knowledge in the topic area with the
statement, "C I didn’t understand any of that." (FX1AS) This was said in one of the Audio consultations in which only 17% of the interactions contained a Chairman turn surplus to an Opening and Closing. In comparison, 70% and 62% of interactions in the other two domains contained additional turns by the Chairman.

5.3.3. DISCUSSION

The Chairman overwhelmingly handled the initial opening turns and the last closing turns. Openings were required to initiate call in an ongoing programme. For example, after the close of one interaction often other business of the programme, e.g. advertisements, jingles, or relevant other talk with the expert, might need to be handled. The programme would then need to move on to the next call. Perhaps all this should be handled by the Chairman, the one in charge of the programme’s business outside of the individual queries.

Are the closings similar to the opening in that the Chairman handles the business after the closing and so should expediently take control of the talk? However, what about all the pre-closing turns? The chairman appeared to make an effort to bring the closing about which implies some manipulation within the interaction itself. Actively trying to finish the interaction was necessary perhaps in order to limit the time given to each particular caller. It should be noted that the pre-closings are often questions addressed to the Expert allowing the expert the opportunity to add more talk. Although this may be this particular Chairman’s mode of operation, experts in the GQ and SB interactions were seen to address similar questions of general interest or on the topic generally to the Layman. Perhaps this is just a means for the chairman to legitimately re-enter the interaction cohesively yet still allow those people with the task obligation and request to satisfactorily conclude or to successfully pre-empt a pre-closing.

Alternatively, the Chairman sometimes abruptly closed the interaction by seizing a Layman pre-closing offer, perhaps through a desire to “set” the interaction's "frame".
For example, the Layman "thanks" in the example below would have been addressed to the Expert but the Chairman pre-empted him in order to hastily conclude the interaction from the first part of the pre-closing.

E [and uh (.) you just call in at the information point and they'll give it to you (pause)  
L Thanks very much.  
C All right Peter? Thank you for your call, (FX1GP)

Perhaps, the Chairman's tasks were directed to maintaining the programme itself including its time restrictions. Controlling opening, pre-closing and closing exchanges would allow the Chairman to maintain the pacing of the programme or to cut-off any arduous interactions. Similarly, when next-speaker became ambiguous in FX1GA, the Chairman used to question to direct the next-turn when a long pause appeared to threaten the progression of the interaction.

Connection between the Chairman's statement of lack of topic knowledge and the decrease in intervention in the Audio consultations implied a link between some conversational functions performed by the Chairman, e.g. initiating pre-closing, and specific topic commenting. Does the content in particular turns perform the task? If so, can specific conversational task be necessarily be divorced from the content of its turn?

Conversational function also appears connected with with position within the conversation in the case of two turns occurring within the Solution Multi-utterance immediately after the initial presentation of its essence. It should be recalled from Chapter 1 that Schegloff (1982) remarked how speakers would specifically work to achieve a multi-utterance by staving off turn claim, often by making the first unit as non-informative as possible. However, the Chairman interrupted with general questions immediately after the solution had been given but did not interrupt the prior question-answer series or the Layman's Query. Rather than an Expert dictation, is the Solution
section accessible to all parties to add knowledge and opinion in order to mutually agree on the solution?

The Chairman typically performed the conversational functions of initiating opening, pre-closing and closing exchanges. Some functions appeared to be linked to simultaneous usage of topic and position. Given that the Chairman's knowledge of topic and opportunity of position were unique to the roles, how were these same functions handled in the unchaired consultations, if at all? This and the existence of any unique sequences to the unchaired consultations were answered by a detailed descriptive analysis of an unchaired consultation.

5.4. STUDY 3: CONVERSATIONAL ANALYSIS

5.4.1. INTRODUCTION

To determine how the Chairman's functions were accomplished in the unchaired interactions, a detailed analysis was thought to be beneficial. The most detailed and explanatory analysis used in the thesis was that of Conversational Analysis (CA). Therefore, a descriptive analysis was undertaken on one CC interaction using the techniques of the CA analysis (see Chapter 2). The CA sequences already found in the chaired interactions, i.e., opening exchange, query multi-utterance, solution multi-utterance with possible question-answer insertions, and pre-closing and closing sections, were compared to those found in this interaction and extraneous sequences outlined.

The interaction used, CC2, was chosen as the first unambiguous query that appeared in the material. It contained 793 words and 103 lines of dialogue. Both the Layman and Expert were female, the Layman was a student from the Genetics Department. The query involved the failure of a command to initiate a package on a computer.
5.4.2. RESULTS

In CC2, the opening was accomplished by a simple exchange. The Layman offered a conventional "hello" in response to the announcement of "Advisory" from the Expert. The advisor responded again with the self-identification of the service "Advisory". This was a standard "business" telephone greeting exchange in which the caller was offered a name that he/she would recognize, that of the business. (Schegloff, 1979) The second announcement of "advisory" identification may have been due to some extraneous or incomprehensible sound which would encourage the caller to re-attempt the initiation of communication channels.

In the chaired consultations, the Chairman initiated and controlled the opening exchange and section. In contrast, here, the Layman was in control of the opening as evidenced by an absence of prompt for the primary topic. The query was immediately relevant and initiated.

The query was a multi-utterance with a preface announcing a "problem". The next sentence gave the topic generally that the Layman was "trying to get Minitab" package. The Layman then detailed all the procedures already attempted and finished by announcing the specific problem, i.e. a response of "bad command". This was very similar to the query format of chaired interactions. (see Chapter 2)

After the query when the advisor took control for the answer, a request was made for the name and department of the caller. This sequence was in accordance with the experimenter’s needs and would not typically be found in consultations; it was not seen in the chaired phone-in consultations. This sequence was immediately followed by three fact-finding questions, typical of a question-answer insertion sequence also found after Layman queries in chaired consultations.

The advisor then started the solution (22-54) with an immediate diagnosis of the problem involving a "different name" or "not on the machine". An explanation followed with an admission that the Expert couldn't give a precise solution and the Layman
should find someone else. The Expert also suggested some procedures for the Layman to try in order to diagnose the problem herself.

The Layman attempted to pre-close with a statement which would accept the task's end but Expert re-opened talk with an additional suggestion to check with the Departmental Secretary. After another pre-closure, accepting the advice, the Expert again pre-empted a closing and instead arranged to go off the line to consult others. The Expert accomplished this by stating her intention and then waiting for an acknowledgement by the Layman. The Expert then went off the line with "okay (. ) thanks". She re-entered the interaction with a "hello" exchange to re-initiate communication.

Having failed to find a solution, the Expert summarized the proposed diagnosis of the problem, i.e. that the package was under a "different name". Finally, a pre-closure offering of thanks was accepted and followed by a "bye" exchange to close the interaction.

5.4.3. DISCUSSION

So, the unchaired consultations were similar in the sequences and their procedure to the chaired interactions. All the sections found by the CA analysis of Chapter 2 and verified by the model and cluster analyses with chaired consultations were found in the same order as unchaired interactions. These were Opening, Query with typical Insertion sequence, Solution and a Closing with Pre-closing and Closing exchanges. The opening and closing exchanges, controlled by the Chairman in the chaired consultations, were controlled by the Layman in the unchaired interactions. The advisor simply identified the service for the layman who could then start the relevant query. The closing of the unchaired consultation, as in the chaired material, was pertinent to the Layman's satisfaction, demonstrated in CC2 by "thank you" offers.

However, there were two extraneous sections in this material: the artificially
created name and extension/department request and the arrangement to go off-line to confer. Both these sequences were prefaced with "hang on" signalling perhaps a suspension of the usual process or a shift from the coherent line of thought. These additional sequences validly took place without disturbing the basic structure.

The re-start of the consultative process after an off-line conferment was made using a "hello" exchange to re-establish the communicative link. The conventional word "hello" and its exchange usually takes place only at the beginning of an interaction. Here, it accomplishes the same function towards the end of the interaction albeit appropriately. Similarly, pre-closing attempts were made in the "middle" of the solution section as the talk was continued by the Expert. This indicates the nature of the extended solution processes found in these unchaired consultations. The opportunity to explore the solution fully is actively accomplished even by pre-empting pre-closings.

5.5. CONCLUSIONS

Remarkable similarity in structure was found between the chaired and the unchaired consultations. The unchaired consultations were well modeled by probabilities estimated from a sample of Chaired radio interactions. The states found to fit the unchaired material were Opening, Query, and Solution/Closing. The estimates from the relatively smaller closing sections of the chaired interactions did not fit the longer closing of the unchaired counterparts as well. Similar differential proportions for chaired and unchaired consultations were found for the "are-be" cluster of solution words. Significantly, the detailed CA analysis revealed that even unique, intervening sequences in the unchaired consultations, e.g. conferment off-line, did not to disturb the overall sequential pattern of the consistent states.

The functions handled by the Chairman in the chaired consultations were primarily opening, pre-closing, and closing. Similarly, Crow (1986) found that the
television call-in show host opened and closed the show and led into commercials and calls. Control of these functions could be used to maintain the pace of the programme. Might this and the few general interest questions been an attempt to hold the interest of the radio audience? Atkinson (1982) noted the specific "formal" features invoked in order to hold audience interest in multi-party interactions.

Higher average counts of turns were found in the solution/closing section of the unchaired consultations. More solution talk is indicated than in the chaired consultations. In general, unchaired solutions appeared to include more real-time solution diagnosis, arrangements and flexible pre-empting of pre-closing initiations. Was there more freedom in the unchaired solution negotiation? Did the strict time constraints of the chaired radio constrain this section? Might this have been encouraged by Chairman initiation of pre-closings or was this a general constraint given a "formal" situation? The question of "formality" of consultations and the overall function of a distinctive consultative structure is examined in Chapter 6.
6.1. **INTRODUCTION**

A consistent structural pattern involving the tasks of Opening, Query, Solution and Closing has been shown to occur consistently in both radio and natural consultations. Participants were seen to adhere to this pattern despite intervening tasks such as the name and telephone extension requests in the Computer Centre Advisory interactions. Why does this particular pattern exist to the structure of consultations?

Consultations appear to be recognizable by speakers as their own speech type. As seen in Chapter 1, analysts (Alty & Coombs, 1981; Byrne & Long, 1976; Crow, 1986; Zimmerman, 1984) intuitively describing the structure of consultation found a general pattern of stages, although some disagreement existed on fine details. These analysts all recognized consultations as distinctive. Alty and Coombs (1981) found that common goals and stages of the consultation could be identified by the speakers themselves and that these identifications were consistent; they concluded that the "advisory interaction" was a clearly identifiable form with a consistent structure. Similarly, Zimmerman (1984) and Crow (1986) noted features that were distinctive of this particular speech event.

In addition to having a distinct nature, consultations were also recognized as characteristic of a certain interaction type that might be defined as "providing a service of problem-solving". These interactions were identified to contain aspects consistent with other interactions of a problem-solving (Alty & Coombs, 1981), service-oriented (Zimmerman, 1984), or advice-seeking nature (Crow, 1986).

In this way, they are similar to other "formal" types of interaction, e.g. large multi-party interactions, ceremonies and small professional interactions, known even from only segments of the talk. For example, church services can be recognized from prayers and courtroom interactions from the legal phrases and jargon of the cross-
examination (Atkinson, 1982). Researchers have identified formal talk as restricted talk, i.e. allowing only a limited set of alternatives for basic conversational aspects, e.g. turn length, source, topic. This thesis has already indicated that the pattern of turn length and source in consultations does not freely vary.

If consultations are "formal", the examination of the reasons behind "formal" talk in general might shed light on the function of consultative structure. However, from the similarities with formal talk, it does not necessarily follow that consultations are themselves a type of formal speech. Therefore, consultations were first examined to see if they exhibited the characteristics of formal talk. So, are consultations "formal" interactions? If they are, what are their "formal" features? How would these help explain the reasons behind the structure?

6.2. ARE CONSULTATIONS FORMAL TALK?

"Formal" speech events are identifiable as such by competent conversationalists, but what are their identifying features? Irvine (1979) describes three relevant categories: 1. structural constraint, 2. reference by role, and 3. central focus.

1. Structural constraint restricts the appropriate choices normally available for various talk aspects; turn control is a common restriction. Turn control may take the form of pre-allocation of turn, use of a chairman, or use of turn types that restrict next-turn type. For example, both turn order and the type of turn are fixed in courtroom examinations by the use of question-answer adjacency pairs. (Atkinson & Drew, 1979) Interviews have been observed to systematically restrict turn characteristics normally managed locally, e.g. turn type, size, content, order. (Greatbatch, 1988; Scanell, 1986) In fact, people define interviews by the exclusive turn rights of the interviewer to ask questions. (Wolfson, 1976)

2. Reference to self and others in "formal" events is according to role. This may be by kinship relations (Rosaldo, 1973) or by rank, e.g. "doctor". Brown and Levinson
(1987) cite examples from the Watergate tapes when Nixon was systematically referred to as Mr. President only in the formal phrases of greeting, farewell, and oath-like assurances (p. 183). They also point out that even the title "mister" is more likely to be used in formal situations than the pronoun "you". Elaborate standardized introductions on the courtroom witness stand might also be considered a role reference appropriate for the event. (Atkinson, 1982)

3. Central focus is a concentration on a specific topic, task or speaker. Topic control ensures attention and comprehension in "formal" interactions (Atkinson, 1982) and "formal" events such as lectures and small professional interactions are often "monotopical", i.e., talk expected to consist of only one topic (Schegloff & Sacks, 1973). Pre-constraint to one topic effectively focuses the process of the talk because participants feel compelled to maintain the appropriate topic without diversion. For example, Fisher and Groce (1990) found that patients were more likely not to respond to doctors' social rather than medical expositions because medical topics were seen to be more appropriate.

Researchers have noted that typical conversational acknowledgement features such as receipt tokens, e.g. "oh", assessments, e.g. "yeah it really was good", and reciprocating stories are typically absent from "formal" speech events. (Greatbatch, 1988; Scanell, 1986) Atkinson (1982) has even proposed that inclusion of these features may jeopardize one's professional standing because use would show a failure to recognise the event as "formal". These particular features are elaborated responses that specifically acknowledge and acclaim the preceding information. It has been suggested that such responses are redundant because of the guaranteed relevance of the next turn or that they are repressed in order to maintain impartiality and neutrality (Scanell, 1986).

So, are consultations "formal" talk? The consistent pattern of turn order shown to occur in consultation indicates that there is a pre-determined restriction on the real-time management of turns normally found in spontaneous conversation. Consultations consist of a specific turn sequence of particular types, i.e. question and answer. They
involve layman and expert "roles" and they revolve around one particular topic, the query problem. So, intuitively, consultations would seem to fit some of the characteristics of "formal" talk, but what more concrete evidence is there? What are the specific "formal" features of consultations?

6.3. FORMAL FEATURES OF CONSULTATIONS

Garfinkel (1972) proposed that the seemingly unconscious procedures of conversation are actually guided by "background expectancies", i.e. intuitive socially-standardized common understandings providing a set of appropriate alternatives by which participants can judge events as appropriate. Presumably background expectancies in consultations would include turn restrictions of length, source and topic in contrast to everyday conversation. Such restrictions should be indicated by lack of provision for the possibilities procurable from expectancies of everyday conversation.

However, departures from background expectancies may be made without loss of coherence though they would be then accountable, repairable, and sanctionable. Therefore, expected constraints on a type of talk should be marked in any departures from them. For example, an interview's question format is still acknowledged during departures either by some pre-announcement of the departure, e.g. "can I just break in here", or an avoidance of requiring action by the next-speaker in order to allow him to reinstate the format. In addition, a departure may often be explicitly acknowledged by the other speaker, e.g. "it is customary for me to ask the questions". (Greatbatch, 1988)

All the consultative interactions transcribed for this thesis were examined for characteristics of "formal" talk. This included 15 natural dyadic consultations from phone calls to a computer advisory service and 83 radio phone-in queries. The radio interactions consisted of three each from Gardener's Question Time and from Gloria Hunniford on small businesses, and 77 from LBC's Fix-it Phone-In with 36 on gardening, 20 on DIY, 15 on jewellery and 6 on audio equipment. This material was
examined for formal features of structural constraint, role reference and a central focus. Departures from expected constraints of consultation and also in the absence of features common to non-consultative talk were taken as evidence.

6.3.1. STRUCTURAL CONSTRAINT

Structural constraint was evidenced by turn pre-allocation of form and of speaker and by restriction of topic choice in the two multi-utterances of the query and solution.

6.3.1.1. Pre-allocation of Form

In form, the query and the solution always occurred in this sequence as a question-answer adjacency pair of multi-utterances. Evidence that the turn's form as multi-utterance is "pre-allocated" exists in the absence of the usual multi-utterance features to stave off early turn claim. This should be noticeably accomplished either with a pre-announcement of a lengthy turn, e.g. "I would like to say two things", or with a "rush-through" gloss over the transition point, when the speaker speeds up, withholds pitch drop or breath intake, and/or syntactically bridges the TRP.

Pre-announcements of lengthy turns were absent from both the query and solution multi-utterances. In particular, the solution typically gave the entire reason for the turn immediately. This is remarkable in a multi-utterance because there would be no reason then for an interruption or even turn exchange to not take place.

In the initial query, often no pre-announcement of any kind was given, the query was simply started. For example,

C Uh Jean's next in Bagshot Hello Jean?
L Yes good morning. Um I've got a brick-built * outhouse and I'd love to make it frost-free and I don't really know what that means. I wonder whether John could help. (FX1GJ)

Some started with a pre-request for permission to speak, e.g. "L Good morning umm
can you help me?” (FX2g8, line 5). This strategy would indicate that the speaker is dependent on the partner. (Huls, 1989) Sacks (1972) similarly, noted the use of pre-requests of permission from children as an expression of their limited right to speak.

Some initial query statements pre-announced the query itself but not a long turn as such; this gave further evidence for the pre-determination of the query multi-utterance. In example below, the layman announces the query, rather than a multi-utterance, with "my question is fairly simple". Also, similarly to a Solution utterance, the essential question was given immediately, "how do you grow garlic", providing further evidence that both participants expect a multi-utterance here:

E Good morning Chris,
L [umm My my question is a fairly simple one It's it's actually how do you grow ga:rlic. (.) I've I've had two lots conflicting about some people say you should actually use a garlic clove. other people say no you should actually use garlic se:eds But I've been unable to to find a shop that actually sells garlic seeds. Could you advise please. (FX1GC)

Evidence within the turn comes from two features: an absence of "rush-through" exhibited by the speaker. No attempts were made to prevent interruptions in either multi-utterance by "rushing-through" the talk without unnecessary pauses; indeed, interruptions were commonplace in the solution. In this example, the layman made long pauses showing no fear of interruption.

L The question is father and son * are in business together? * .hh and the son gets married .hh * and the wife joins in the business * do they need a partnership agreement. (SB4)

The mutual understanding of the pre-allocated form of multi-utterance meant that there would be no question about turn claim. Greatbatch (1988) found that during an interviewer's questions, turn attempts were not made until the question was completed regardless of the many possible turn completion points exhibited. Therefore, in the
query, no continuers were necessary to prompt the speaker to continue or to check the listener's attention because both participants knew that the listener was bound to let the turn finish before then starting his/her own turn.

The material showed a decided lack of continuers during most query multi-utterances; they were not given or solicited. In addition, the speaker was not obliged to prove the validity of the talk as "news", as usually found in conversational narratives. Therefore, exaggerations, emphasis, embellishing or personalizing of the query by the layman were not necessary. Also, the listener's acknowledgement of the talk as "news", normally evident in non-consultative talk, was not present; these may be either phrases of "ritualised disbelief", e.g. "you didn't" (Jefferson 1981) or markers of knowledge-state, e.g. "oh" (Greatbatch 1988; Schiffrin 1987) Instead, the expert made no acknowledgement and waited without continuers until the multi-utterance was complete or used expressions that don't signal as news e.g. "certainly", "yes", "okay" (Atkinson 1982).

In the following example, no continuers were given or solicited even though the Layman starts out with the disclaimer that the question might not be pertinent. More importantly, the Layman failed to personalize the query even though it later surfaced that they were acquaintances; she describes the source of the horse manure and thought it would "ring a bell", and she closed with "thanks John see you next week".

L Umm I would like to ask a direct question about organic growing but I don't know whether this will * be able to be covered by that. hhh a very heavy chalk border in south London. We'd like to grow shrubs and this year we have (.) laden it heavily with (.) uh I think it's horse manure actually (.) quite well rotted horse manure What do you suggest we do nowhh..

So, the absence of pre-announcement and "rush-through" indicated that the query and solution turns were mutually accepted to be multi-utterances. Also, with the query multi-utterance, the form and role of the next-turn, i.e. solution, pre-allocated and so,
there was no need for turn claim or continuers.

The accepted constraint of the multi-utterance form can also be seen in a resistance to abandonment after departures from interruptions. In the following example, the Expert interrupted the query for a fact-finding sequence and even a start to the solution but still the Layman interrupted to finish the query narrative.

L ...and I get nothing on the left hand channel at all
E Right does this happen on cassettes that em you have recorded yourself, or prerecorded cassettes.
L No, on c-cassettes I've recorded myself, and on pre- on cassettes that I've already recorded say sometime ago;
E Um=
L =they play back quite well.
E Right so the problem lies in the record chain and I'm afraid it needs a competent engineer to sort it out. .hh
L [I see now I am clued up uh sufficiently I've had the cassette deck out eh two or three times. I've taken out all the various plugs .hhh and eh (. when I'd done that emm I've even changed one resistor which (.) I thought was rather loose....
(FX1AH)

6.3.1.2 Pre-allocation of Speaker

Constancy of speaker role for the query and solution turns had been indicated previously in this thesis. The first major turn, the query multi-utterance, was pre-allocated to the Layman's control. In all the consultations, especially in Gardener's Question Time, the turn was immediately left to the Layman to present the query after the greeting exchange. For example, the GQ3 interaction starts without explanation or explicit prompt yet the Layman immediately started the query.

C Who's next (. yes sir.
L .hh Dennis Daly. * Could the panel tell me why, (. I never get good results from freesias. * I put about eight to ten bulbs (. in a ten inch pot, * I get good foliage * but very few flowers.
(GQ3)
In fact, some laymen took advantage of a guaranteed point of control in order to ask two questions in the one multi-utterance.

L....hh ummm what I want to know really is what's the best thing to seal it with .( ) and also is the normal masonry paint sufficient to uh cover you know sort of a (. ) a porous brick (FX2H1)

The link of role and the multi-utterance turns was indicated by the resistance to abandonment after interruption from other roles. For example, the Expert’s solution continued without disruption even though the Chairman interrupted with a personal comment relevant to the solution.

L If uh with a circulator pump going wouldn't that clear it,
E It should do but uh often heated towel rails aren’t on the heating system (. ) @if you can- if that doesn’t sound too stupid hehheh
C [yes I used to have one like that it was always on (when
the heating was)
E [they’re on an open loop (. ) from the boiler to the hot cylinder...

6.3.1.3. Pre-allocation of Topic

Besides the turn form and speaker pre-allocation, a constraint also exists on the topic in these multi-utterances. In the section above, the primary topic, i.e.the recognized "reason" for the talk and usually the first topic (Schegloff & Sacks, 1973), was seen to be the Layman’s. However, the primary topic was also recognized to be the query. The query was started immediately in most cases without a preface, even though a query is a prime candidate for prefices because of its potential for offence to both speaker and hearer (Brown & Levinson, 1987). In natural consultations, even general-interest talk prior to the query was non-existent.

L Hello:
E Advisory.
L Um it's a rather embarrassing problem I've got here (.). (CC2)
The topic itself should be appropriate to the consultation situation. That is, it should be a relevant query in the expert's domain and not something trivial or personal.

In the following example, the Layman checked first whether the question was appropriate to the Expert's domain and the Expert interrupted to reassure him.

L um I hope you'll consider this a gardening question, it's probably a borderline case, umm I don't want to grow something I want to get rid of it (.) umm I contemplating
E oh that's all right (FX2B10)

The query must also concern only legitimate actions. The Expert in the following example interrupted the query to first establish the legitimacy of the Layman's position. (see also S65)

L I've been using your uh let me get what's the program's called guest FTP account
E Oh yes yes right guest you log in using Guest ID
L Yeah and I'm trying to sort out about thirty or forty files from an American system
E uh yes
L And then the database
E Sorry why are you using our guest rather than becoming authorized public because we don't give much (.) in the way of facilities to the guest (CC11)

The query and solution must contain forms in concert with the appropriate content. Greatbatch (1988) found that, in interviews, speakers must produce turns minimally recognizable as questions or answers; in addition, statements prior to the required question form are seen and treated as direct preliminaries to it. In this material, if the query topic didn't contain a comprehensibly formulated question, one was solicited before the interaction continued. In the example below, first the expert and then the chairman prompted the layman for re-formulations of her query:
E so um ((cough)) what was your particular * point
L [.hh
L well we've- uh probably- * gone- too far ahead w(h)en people start
up in business, * as our business did start up and no partnership
agreement was: thought of at that ti:me. * and uh now we're hitting one
or two snags, .hhh and uh * you know I just wondered uh * how
necessary it was.
C W-what type of snags Marion could you be a little bit more
specific?=
L =um well the father is about to retire, * and.. (SB4)

Also, the solution should have an adequate response of some sort," In the following
element, the expert couldn't diagnose the problem and, although more than one possible
solution was suggested, the Layman still had to accept the Expert's "failure" of an
answer. According to Brown and Levinson (1987) acceptance of another's apologies
may constrain the receiver to minimize the other's transgression by phrases like "It was
nothing" and "don't mention it". Similarly, here the Layman seemed to dismiss the
failure with the words "never mind" and "anyway".

E But that is if there is really definitely you know that nobody's been
messing around with taking it off or anything like that (. ) or that it's not
used from a floppy maybe. (. ) it could be that- @I just don't know
L Oh right well never mind well thank you for- your help anyway
(CC2)

6.3.2. ROLE REFERENCE

Reference by role was also evident in the material in forms that would not be
typically used in everyday conversation. One form was that of standardized
introductions. In the radio phone-in programmes, the Chairman introduced the Layman
by name and location before then actually greeting the individual.

C and first on the line, with a question for Mike is Allen (.) ringing
from Ashford Hello Allen. (FX2H1 1-2)

Self-reference by role was found in the natural consultations. The computer
advisors identified themselves in the role of the entire advisory service, answering the phone simply "Advisory" and referring to themselves in the plural throughout.

E right I mean what we recommend we actually do have a policy on this sort of thing we recommend...
(CC1)

The caller also often chose to self-identify with the role of consultee rather than something more personal.

E Sorry sorry who are you
(pause)
I am a user of EUCLID...
(CC5)

This would allow both participants to maintain a distance between themselves as individuals and the situation to prevent offense, as outlined below.

The Expert demonstrated an orientation to his/her authoritative role by the use of linguistic forms that would be unusually bold if the role wasn't acknowledged. According to Brown and Levinson (1987), a mutual need to save "face", or self-image, causes speakers of potentially face-threatening remarks, e.g. commands, to normally minimize the threat by using polite conventional phrases, euphemisms, passive and subjunctive forms. In contrast, experts in the consultative material exhibited use of imperatives, use of definite authoritative statements and the absence of subjunctive forms which would normally be avoided or modified in non-consultative conversation.

In the following example, the use of definite tense in "would recommend" showed a confidence that could be attributed to role; its unqualified usage by the expert underlined his understanding of this as his proper task. Also, the fact that the expert conveyed no reluctance at displaying his full knowledge, unequivocally stating that these were the "only two" options.
E you've got Benlaid well yes (.) because if you don't want to use strong sprays those are the only two that I would recommend that you use. (FX2b2)

The use of imperatives, e.g., "give them", in the following example, as well as definite tense "will help" indicated the expert's confidence in his role to avoid repercussions from normally face-threatening acts.

E the fruit is still all right so then give them a careful watering two or three gallons probably and then mulch the surface and that will help retain the moisture that's in around the roots (FX2b2)

The majority of interactions concluded with layman "thank you" pre-closure phrases. These acknowledged the interaction's task and the roles attached to them: the layman’s request was satisfied by the expert. The layman was the receiver of a favour and so the "thank you" pre-closure would be appropriate. Due to the Layman's role as petitioner, non-acceptance of an adequate solution provided by the Expert is not the preferred answer type. The Layman has put the Expert in a position of possible criticism and of debt to provide a answer, based on Brown and Levinson (1987); therefore, the preferred response would be acceptance of the solution. Non-acceptance meant a dispreferred form of increased length and elaborated justification (Pomerantz, 1984) as seen in the example below:

C What have you decided to do.
L .hh well I don't like taking them up:. because they give us such a wonderful display of colour * it's beautiful between December and March It seems such a shame to have to go and sort of pull them up and start all over again.
C [Ye::ss::
C Leave well enough alone ( ) (GQ1)
6.3.3. CENTRAL FOCUS

Both the expert and the layman acknowledged and demonstrated a restriction to the event’s task. As observed earlier, the query was immediately or very quickly started by the Layman after the greeting or was prompted to do so by other roles. So, all participants were oriented to the query as the primary topic and task of the interaction. Many participants signalled orientation to the task by explicitly stating it, as in the example below.

E ...(.) um nevertheless it doesn’t get us any closer to tracking down the problem (FX2H2)

Central focus in consultations was inherent in the convention to keep the queries monotopical. Diversions from the primary topic into personal conversation were rare and not encouraged. In the example below, the personal question about the Expert’s lunchtime catches the Expert off-guard and causes him to hesitate and initiate a repair.

E Hello advisory?
L Hello advisory. I’m not eating into your lunchtime am I? (pause)
E Sorry?... (CC9)

Even diversions from sub-tasks were not encouraged. In this example, the Chairman interrupted the insertion sequence between Layman and Expert with a direct question to the Expert. Although the Expert answered shortly and moved immediately back to fact-finding with the Layman understood by all to be the correct task because the pronoun addressing Layman is unspecific.

L [and uh I don’t know why that’s happened the jewellers always say that um (.) they don’t tell me that they’ve done it, but um they they can’t take a stone out without damaging it in some way even a hard stone like a sapphire
C Is that true Mike?
E- That’s not true at all uh hah um can I ask you one question are you going to have them sized larger or smaller
L Larger...(FX2J6)
To stray away from the topic or task to non-consultative conversation would be to accept that the structure was no longer that of a consultative interaction. One successful way to end a monotopical interaction then was to move away from the topic. The radio phone-in programmes, especially, had to deal with the problem of moving off the query topic and onto the ongoing talk between chairman and expert between queries. So, pre-closure attempts were frequently attempts to move off the query topic. This was accomplished by moving towards related other-topics,

L Right. When is the uh best time to plant them? E Uh as early as you can: Uh: the (.) s’varieties selected for growing in the UK are usually pretty tough so I would be looking to get them in as soon as the ground is ready around the end of March.
C Can you actually smell it as it grows John?

more personal topics,

C mm I- like you actually I wouldn’t mind a few frosty mornings as well
E Yeah
C Uh Jean’s next in Bagshot (FX1GE)

or humorous topics.

E Occasionally umm but ease off the watering, let it dry out completely between waterings at any time of the year but at this time of the year (.) be rather sparing. They’ve got big thick stems which store loads of water and if the leaves are going yellow at the bottom that’s not too bad em because they do tend to lose those anyway but yes you need to raise the bottom of the pot.
C Do they like milk and sugar with it? (FX1GM)

The other method to close a monotopical interaction was simply to definitively conclude the topic. This was done by a summation, formulation, repetition of information:

E the first thing I would do is (.) literally look at that cable. It’s doubtful that the aerial itself is corroded but (.) uh look at the cable and replace it (pause)
C Right Lance thank you for your call (FX1AL)
or by concluding arrangements.

L No probably I think that the best way is to bring my my disk to
E to the computer centre and uh and go from there
L okay
E Right okay
L okay
E so you can do that during any of our opening hours
L okay thank you very much
E okay
L okay bye
(CC5)

Other pre-closing initiating techniques which don’t specifically consider the query topic
are not found in this consultative talk. These methods include simple non-topic fillers,
e.g. "well", "so", or personally-directed statements, e.g. "I’ve got to go", "I’ll let you get
back". (Schegloff & Sacks, 1973) A personal pre-closing would not be appropriate and
the non-topic filler, not adequate for the task and therefore, even the pre-closing is
focused to the central topic.

6.4. REASONS BEHIND THE STRUCTURE

What is the advantage to employing "formal" features? One clue may be found
in the variation of use cross-culturally. Some anthropologists (Bloch, 1975; Irvine,
1979; Rosaldo, 1973) have noted that very formalized speech is characteristic of more
authoritarian societies in which authority is totally and unconsciously accepted without
question. However, formal speech is not so common in more egalitarian groups that
continually challenge leadership. There seem to be two underlying motives to formal
speech: coercion to acceptance and personal distancing. Both these motives are
consistent with implicit social control; leaders could be assured that their words are
followed without protest or delay but still, all can accept the conditions without offense
because of the distance from personal identification.

More generally, formal features may be used by anyone in order to gain
compliance. Formal features work to keep participants accountable to a particular
restricted role, topic and format. Two potential reasons for this compliance emerged: task efficiency and face saving. Brown and Levinson (1987) proposed that people are concerned with rationality and "face", i.e. an individual's self-esteem; people form statements to satisfy both the rational communicative aspect and the face aspect. So, a tension exists between the need to be efficient communicatively and the need to maintain face.

Bloch (1975)’s study of Merina councils found that once a speaker entered into "formal" speech the form of the next-speaker’s turn was largely determined; rarely was there any opportunity for contradiction or for any response at all. In the Lue culture, solely by accepting the utterance of conventional formulae can one become a host (Moerman, 1972). On one level, this is similar to the conditional relevance of adjacency pairs where, once the first speaker starts the particular adjacency pair, the next speaker is confined to the appropriate next action (Schegloff, 1972); in addition, conventional formulae, found in many formal features, are often involved in order to unambiguously signal the process to the recipient (Schegloff & Sacks, 1973). Formalization of talk makes explicit locally managed aspects of normal conversation, e.g. turn order, (Greatbatch, 1988) as well as higher levels of action, e.g. negotiating agreement. (Rosaldo, 1973)

Why are consultations "formal" events? Formal features found were: restrictions of turn form, speaker and topic for the query and solution utterance, expert and layman role references especially in task work, and a central focus on the query, the primary and only topic. These restrictions bound participants to accept the task and fulfil it without delay. The question-answer pair sequence is designed to be most efficient for information exchange, understood as they are by participants to follow in close sequence. The pre-determination of multi-utterance length and appropriate speaker source for these turns means that hesitation or interruption was rare. The topic was constrained to only one query topic which had to be legitimate and relevant as well as comprehensibly
presented in order to expedite an adequate solution; all this should be done within the layman multi-utterance in order to avoid lengthy re-prompting sequences (see SB4, SB5). Complying with the role assignments ensured that all followed the appropriate tasks at the appropriate time without need for explicit arrangement. The central, monotopical, focus ensured that no deviation from the task was allowed to interfere with the process.

The design of the expert’s solution multi-utterance was in sharp contrast to one theorized to follow the CA turn-taking mechanism (Sacks et al., 1978). As specified in Chapter 1, multi-utterances have to override the turn-relevant-point (TRP) and potential interruption at the end of the first, and every, unit. (Schegloff, 1982) One way to accomplish this is to avoid presenting the essential point of the turn in the first utterance, which is done if one wishes to minimize the turn (Sharrock & Turner, 1978).

In contrast, the expert’s solution multi-utterance was found to present the "reason" for the turn in the initial statement. This design was revealed to be surprisingly efficient in producing an adequate solution. Instead of being expert-dominated, negotiation of the solution was the norm. Immediate presentation of the solution in an initial statement and free access for the Layman to interrupt ensured that inadequacy was corrected immediately and an adequate solution shaped by both participants. All the layman’s relevant needs and constraints, for efficiency’s sake, could not be spelled out in the query. To create a solution uniquely fitted to the layman’s situation and therefore, most beneficial, the layman had access to "guide" the solution choices that the expert offered.

Distancing of the speaker and event from explicit and individual aspects protects the individual participants from being personally affected by the event; it defuses potentially volatile or controversial situations and provides individuals with ready-made "euphemisms" for de-sensitizing the situation. For example, Schenkein (1978) describes a salesman’s client who rejected intimate role references in order to maintain a distance from individual regard. Role references, conventional phrases, qualifications, asides, and
boundary markers (Firth, 1975; Rosaldo, 1973) reduce to "form" the meaning of the actual content of the speech and only the act itself, and not the informational content, becomes important.

Formal speech may help distance difficult or vulnerable situations from the individual. Sudnow (1967) discovered that doctors breaking the news of a death to relatives did so in similar ways; one explanation was that some conventional method was developed so that individuals didn’t have to re-develop it each time. Conventional phrases can be invoked and interpreted by all participants without explicit development. Perhaps ritual formulae are used as a shell between the event and the individual.

Formal features of consultations make acceptable the potentially offensive roles of instruction-giving and of request-making. There are several potentially face-threatening acts involved in consultation. Requests, advice, and warnings put pressure on the hearer to do an act. Criticism, bad news and disapproval threaten the hearer’s general feelings. Expression and acceptance of thanks for the general debt of asking and fulfilling the query are also face-threatening. (Brown & Levinson, 1987)

Acknowledgement of roles and acceptance of their obligations to the consultation allowed a request to be made and fulfilled without undue apologies or pleas being made. For example, with very few exceptions, no prefaces asking permission were made prior to the query. The constraint of query form allowed the layman fear no interruption despite possibly relating things the expert already knows, a normally interruptible offence. Also, the imperatives and assessments in the expert’s solution were accepted without the protest such statements might receive. This is due to assumptions in the role of greater knowledge and the urgent tasks of instruction and evaluations.

Also, the formality may protect the expert from a situation of "failure", as seen in the following example.
E Are you working on one of our machines or is it departmental machine
L [Uhhhhh
L Departmental machine actually * but I don’t think it is anything with the machine I mean it w-it has to be with the setup of Wordperfect umm you know with the software itself you think- I don’t think it’s to do with the con- configuration uh thing on the machine is it?
E Well we wouldn’t know it without actually looking at the machine now (.) I’m going to pass you over to wordprocessing (CC14)

The expert checked to see if the query was valid by questioning whether it was their machine. If it wasn’t under his jurisdiction then he couldn’t be expected to know. The Layman objected to the relevance, challenging to the expert’s opinion but he had to soften this with “try” questions at the end, in respect of the role tasks, i.e. the Expert gives the solution. The expert was able to pass him on to other, more legitimate, experts. So, issues of topic restriction and role reference allowed the expert to protect himself in this situation where he wasn’t sure of the solution.

Therefore, the conventional, ”formal” features of the consultation allow strangers to come together in a situation of asymmetrical giving and satisfactorily accomplish the negotiated transfer of advice. The accepted undertaking of consultations constrains participants to certain pre-determined restrictions of roles and of topic to prevent any offense. Also, the consultation is confined within a question-answer sequence of multi-utterances to ensure no deviation from the accomplishment of the task in the most efficient way. All the formal features of consultation, i.e. restrictions of turn form, speaker and topic for the query and solution utterances, expert and layman role references, and query monotopicality, could be seen to work for both task accomplishment and ”face” protection.
Chapter 7 SUMMARY: STUDY CONCLUSIONS

7.1. ADVANCE ON CURRENT METHODS

Demands on the expert’s time and the confidentiality of many types of consultations deters its in-depth investigation. A review of the relatively few studies dealing with the structure of the complete consultative process revealed common flaws of analyses not validated, esoteric material and small samples. This thesis remedied these shortcomings by collecting a large amount of interactions across many topics and individuals and by subjecting this material to a number of analyses independently.

Some analysts (e.g. Alty & Coombs, 1981; Silverman, 1987) deliberately restricted sample sizes because of the inordinate amount of time required for transcription of this type of material. In contrast, the corpus of consultations in this thesis included 98 transcriptions of interactions. Although current descriptions of consultations overwhelmingly involve one setting and one topic, this thesis used six different and widely-varying expertise domains over 4 different settings. Seventy-seven interactions came from a single setting which meant that constancy could still be obtained within a large sample from one programme yet the overall corpus allowed a complete range of situations. Using this corpus, a range of analyses were applied to the original material independently. Results of all these analyses were compared and contrasted and novel approaches explored for accurate interpretations of the structure of consultation.

7.2. THESIS QUESTIONS

Intuitively, consultations are recognized at some level as distinctive to general conversation. What is distinctive about them? What do people do to make them so and why? This thesis investigated the structure of consultation for the possible existence of
a consistent pattern across topics, settings and individuals. The thesis asked: was there a consistent structure for consultation, how might it be displayed, and what might it accomplish?

7.2.1. CONSISTENT STRUCTURE

All the analyses undertaken in this thesis were able to show independently the existence of a consistent pattern to the structure of consultative interactions. So, the range of analyses exhibiting a consistent pattern to consultative structure validated the findings. In addition, this pattern was found to be robust to topic domain and to individuals as consistencies were found despite considerable variation in the topic domains and large numbers of participants.

The initial comparison of structural analyses in Chapter 2 made it clear that a pattern of sequential stages existed to these interactions. However, the variety of methods could not agree on a precise definition of the stages. Nevertheless, it was indicated that a pattern might be well thought of in terms of turn length and source.

A model was developed based on turns defined by speaker and relative length. Four Turn-Types, observed to constantly occur in sequence in the interactions, formed the basis for a four-state model. These were, in order, a Short Chairman turn, a Layman Multi-utterance turn, an Expert Multi-utterance turn and a Short Chairman turn each forming the base of proposed states: Opening, Query, Solution and Closing. These states exhibited either an immediate jump to the next state or, first, interim talk in the form of turn pairs, or a series of pairs, before moving to the next state. The four-state Turn-Type model was a good fit of the material. It was also shown to be a significantly better fit than a chance model, indicating that the pattern described was valid. The pattern reflected an exchange of turns found in general conversation but, more than that, a specific pattern emerged for consultations. It involved the invariant occurrence of certain Turn Types in a certain sequence with consistent transitions.
between them.

These states were verified by cluster analyses. The cluster analysis revealed a strong prevalence of a group of words in the states of Opening and Closing which had highly standardized phrases. The other two states, Query and Solution, showed a differential occurrence of one word cluster. The overall result was an implication that stages could be seen to have their own conventional words. This result was even more significant when considering that many of these non-content words were typically very common in all parts of conversation.

7.2.2. STRUCTURAL ELEMENTS

The states of the structural pattern exhibited differential features of turn characteristics and conventional words, but what was this pattern exactly? What exactly did these states of Opening, Query, Solution and Closing include? How were they accomplished, by conventional conversational features or by unique means? How did one indicate the status of the pattern, i.e. what signalled the transition from one state to the next?

7.2.2.1. Opening

The model indicated that only 40% of the interactions moved from Opening to Query state immediately, with the others consisting of additional talk. In the extended sequence, roughly 90% of the remaining interactions moved to the next state after a pair of turns. So, typically this was a brief section with participants exchanging talk in overwhelmingly short utterances. Conventional greeting exchanges with recurrences of words such as "hello" and "good morning" were found along with formal standardized identifications, e.g. "Advisory", "Joan from Camden". This is consistent with a minimal opening exchange of identification and greeting. (Schegloff, 1979) It may also have included talk of general interest, especially if the speaker initiating the pair sequences
was not the Layman. Transition to the next state was usually a prompt for the query to the Layman or simply its start by the Layman as primary topic. In the latter case, some sign of topic shift, e.g. pause, filler word, or pre-announcement, e.g. "I have a question...", may have been evident but pre-allocation of this turn’s speaker and content made overt signalling unnecessary.

7.2.2.2. Query

The Query state was minimally a multi-utterance by the Layman and occurred as such in approximately a third of the interactions. In additional talk, a move to the next state after a turn pair would occur in 70% of the interactions. The Layman multi-utterance introduced the primary topic and asked the question of the expert with relevant background facts. An initial preface generally introduced the overall topic of the problem and often started as "my" question, according to the cluster analysis; this is consistent with a need to establish ownership of the complaint (Sharrock & Turner, 1978). The query had to consist of a legitimate topic, unless justified (see, for example, interaction SB5), or it would be sanctioned (see CC10); it also had to be comprehensible or it would be re-prompted (see SB4). Transition from the query multi-utterance came with recognition of the wrap-up formulation which may have been a summary or the question itself, recognizable by syntax or question words.

The query makes an answer of some sort immediately relevant (Schegloff & Sacks, 1973), usually the solution. Any additional Query turns after the Layman multi-utterance typically was a "question-answer" insertion sequence (Schegloff, 1972) initiated by the expert with the layman. The questions were often accomplished by "try" statements rather than typical question forms, which implied a request for confirmation.
7.2.2.3. Solution

The solution section was characterized by at least one multi-utterance by the Expert. The solution section more rarely moved immediately to the next state, Closing, after the first turn and 80% of the interactions continued into further talk between participants. Only about 20% of these interactions moved into the next state after each pair of turns. Therefore, often considerable talk was exchanged typically with long turns between expert and layman. Some adequate solution was strongly compelled before the section finished. This was often tested in a pre-closure check for satisfaction, with acceptance by the Layman the preferred response (see GQ1). Cluster analyses revealed a cluster of words: "are", "be", "if", "so", "which", "they", significantly more prevalent in the Solution than in the Query. These were observed to function in explanation of the solution: either in instructions, e.g. "are" commands, conjectures, e.g. "if" conditionals, or the framing of a explanation, e.g. "so" summations. The move to the closing state was usually through the recognition of wrap-up of the last Expert solution multi-utterance, passing then to the Layman or Chairman in the pre-closure exchange.

The unchaired consultations, in contrast, showed more activity in the Solution section than in the chaired interactions. Solutions types were also more varied and included referrals to other experts and eventual determinations of "no possible" answer. They involved more on-line problem diagnosis and additional arrangements, e.g. coming in to pick up information, which lack of time-pressure would allow, in contrast to radio queries.

The solution multi-utterance was unique and unusual in form to other multi-utterances because the reason for the turn, the solution itself, was announced fully in the very beginning. (Schegloff, 1982) In addition, the turn was highly vulnerable to interruption by the Layman offering or requesting information. In this way, the Layman was allowed the chance to influence the solution.
7.2.2.4. Closing

This state tended to be very short despite Conversational Analysts’ description of pre-closing and then closing exchanges in such a section. However, the pre-closure may be initiated within the Solution as it often took the form of demonstrated satisfaction with the solution. Specifically, it was often a direct request for satisfaction confirmation from the Layman or simply a confirmation from the Layman through a "thank-you" phrase, for example. This concluded the primary and only topic of the interaction and so the closing of the interaction was then relevant. According to the cluster analysis, the typical closing exchange included conventional phrases such as "thank you very much".

7.2.2.5. Conclusions

The distinctiveness of the sequence of invariant turn-types in these consultations was noteworthy. In addition, the structural pattern was found to be very robust. Unchaired dyadic phone consultations were found to fit the same sequence of the same states as chaired consultations, with only a slight increase in the activity in the last states. Examples were seen of interventions of different roles into sections where they didn’t 'belong', i.e. weren’t typically found. Also, interventions of non-consultative tasks, e.g. conferring "off-line", and the failures of participants fulfil obligations, e.g. SB5 were also seen. However, these were all overcome without change to the overall process of the interaction.

Because the four turn-types constantly occur in one sequential order, it might be hypothesized that they represent or carry out tasks obligatory to consultations. It appears clear from observation that these would be opening and closing exchanges, involving short turns, as well as the multi-utterances of the query and solution formulation. However, what of the stages of interim talk optional between states?

In the model, if transition to the next state was not immediate, an optional stage
of additional exchange of turns could take place for each state. A need for adequate and appropriate query and solution (Chapter 7) as well as evidence for socially-expected information in situations (Sharrock & Turner, 1978; Zimmerman, 1984) indicated that certain essential elements were necessary for functioning and that inadequate presentations of these must be remedied. The interim talk between states may be specific places attached to each state where additional talk may occur in order to resolve problems of comprehension, communication, or formulation. For example, interim sequences have been used in the material to initiate repairs, to acquire necessary information, to re-prompt the query formulation, or to ask follow-up questions about the solution. In Chapter 2, the optional question-answer sequence found in the Conversational Analysis and the optional follow-up questions after the solution stage found with the Functional analysis both could be conceived as interim stages following the Query and Solution states, respectively. These sequences ensured that the task of the state was satisfactorily accomplished before moving on to the next state.

More importantly, for structural description, these optional interim stages made the model viable as a description across individual situations. They would account for varying durations of individual interactions yet still predict consistent states sequence overall. So, like the turn rules of Conversational Analysts (Sacks et al., 1978), these interim stages allow the model to be applied globally but still allow local variation.

7.3. POSSIBLE ACHIEVEMENTS OF CONSULTATIVE STRUCTURE

7.3.1. TASK COMPLETION

Why might this particular structure exist for consultations? Could the structural design be uniquely suited to the task of consultation? It has just been outlined how the optional stages of talk between states allow for resolution of problems arising from the previous state. Pre-closings, specifically designed for consultation, typically confirmed the Layman's satisfaction with the solution which effectively ends the reason for the
Closing may also be said to be tailored to the situation because it commonly involved a "thank you" exchange which would be relevant in a request-satisfaction task.

Unchaired consultations over the phone sometimes contained an intervening sequence of off-line consultation. In these cases, a greeting exchange, typically found in the Opening, was used to return back "on-line" to re-initiate talk. So, some conventional sequences were employed as conversational management techniques relevant to the advisory consultation rather than being tied to particular positions in the conversation.

7.3.1.1. Query Multi-utterance

The multi-utterance designs of the query and solution presentation may be interpreted as directly beneficial to the consultative task. Question-answer multi-utterances in sequence are an efficient form of request-response in that the questioner is in control of the series and the recipient is constrained to a relevant answer and then handing back the turn. (Sacks, 1972; Greatbatch, 1988) The query multi-utterance allowed the Layman to present the question and any relevant background without interruption, e.g. by repair initiators. Then, the Expert had the opportunity to either re-prompt the query for re-formulation or to start a typical question-answer insertion sequences. Both these activities allowed accurate problem formulation or collection of necessary information prior to an announcement of a solution. Together these worked to make sure the expert understood what the problem was by providing conventional access points before the solution to the Expert to request information from the Layman.

7.3.1.2. Distinctive Solution Turn Design

The one aspect of consultative structure distinct from general conversation besides the invariant Turn-type states was the access to turn within the Expert "multi-utterance" of the solution. The essential reason for the multi-utterance was presented immediately
within the turn; also, access to interrupt the turn was relatively free to other participants. However, according to Schegloff (1982), multi-utterance turns must be specially achieved by averting potential turn claim allowed at turn-relevance places (TRP). (Chapter 1) To avoid being cut-off by the TRP, one attempts to put all the essential information of the turn into the first unit (Sharrock & Turner, 1978) whereas one avoids doing this in a multi-utterance. The query multi-utterances of this material contained vague topic statements at their beginning. In contrast, the initial statement of the solution multi-utterances were overwhelmingly concise solutions giving the core information in the first case; sometimes pauses occurred after this, further encouraging turn claim. To put the essence of an intended lengthy turn in the first unit is contrary to the expected aim of multi-utterance to stave off the TRP. Why is this?

An immediate statement of the concise solution and access to the Layman in the Solution to interrupt ensured that any inadequacy was corrected immediately. Inadequacies of solution may be a misunderstanding of the problem on the part of the Expert, contingencies on the solution not presented, or solutions already tried. The layman may not know which information is relevant and, often, only a sketchy background history is given in the short query. The layman requires access in order to shape the solution choices offered to that which is most adequate, a judgement really only the layman could make.

The benefit of this design of the solution multi-utterance was also corroborated by findings from human-computer interfaces and from comparison of chaired and un chaired consultations. The lack of relative success with Expert Systems user interface (Chapter 1) appeared to imply an advantage to the structure of human-human consultation. The more satisfactory results due to a active exchange of talk in the solution process confirmed the benefit of a negotiated shaping of the solution. In unchaired consultations, more interaction and more varied activity occurred in the solution section than found in chaired consultations. The increased activity in the
solution section pointed to more on-line problem diagnosis and follow-up arrangements, i.e. coming in to pick up information, viable due to the absence of time-pressure. If the chairman curtails the solution section due to time pressure, as suggested by Chairman pre-closing initiations, then would it not be likely that the unrestricted consultations showed the more beneficial state of the Solution section with increased negotiation?

7.3.2. FORMALITY FEATURES

Certain features typical of talk in "formal" settings were found in consultations. In general, "formal" talk is seen as more restricted in the alternatives available for use in conversation. What might this use of these restricted formal features accomplish for consultations? Consultations were found to be constrained in turn order, turn type, role and topic. An acceptance of the start of the consultation should also signal an acceptance of these pre-determined features. Consultation's enforced monotonicality in combination with the restrictions on structure and topic also constrained the task to that of a query. The pre-determination of form and speaker role in the turns meant no hesitation or interruption in completion of the task.

Protection of "face" was probably also a factor in the pre-determination of consultative structural features due to the many potentially offensive acts involved, e.g. requests, criticisms, advice. (Brown & Levinson, 1987) Protection of face was most likely guaranteed by adherence to pre-allocated roles. Typically, no explicit permission was sought or given prior to the query. Acceptance of role obligations allowed a request to be made and fulfilled without undue apologies or pleas being made; the event could be undertaken without involving individual personalities. The consultation did not involve all the delicacies and vulnerabilities of polite conversation.

Recognition of role of layman and "owner" of the query allowed the layman to display a lack of expertise knowledge while still presenting all the background knowledge without preface or apology. Similarly, the Expert could give instruction,
assessment and criticism within his pre-allocated Solution without fearing offense. More importantly, he/she could provide a solution in response to the request without expecting censure for its failure. Evidence existed in the lack of affront to layman repair-initiations of solution inadequacy and the solution’s continuation in spite of them (see e.g. SB6).

Adherence to a single, legitimate topic also avoided offense by failing to satisfy or by requesting too much. Experts could avoid failure by claiming that the topic presented was better answered by someone else. Examples of this were found in referrals in the material and in other studies (Crow, 1986). Formal features of consultations allowed strangers to come together and yet protected them by letting them assume a role with strict task requirements.

7.3.2.1. Comparison across genre

Interruption to the solution section, however, seemed not to occur with second experts in the panel discussion. Second expert solutions occurred only after the “wrapping up” of first solution and referred back to it in an explicit cohesive move. Why would an unprompted second expert wait until the first expert finished completely when other consultations exhibited alternatives interrupting the primary solution explication? Perhaps it was the nature of the multiple parties involved in the panel.

Several different situations were involved in the range of this material. The computer centre advisory consultations were dyadic and unchaired. The majority of the radio phone-in programmes were 3-party interactions with a mediator or Chairman. Gardener’s Question Time programme involved a panel of experts with a Chairman. In the latter two programmes, the calls were queued and access to particular interactions was initiated by the Chairman in an ongoing programme whereas, with the computer advisory, the calls were not all waiting at once and so presumably there was less pressure to finish and move on.
Despite these differences, a consistent structure was found. Still, comparison of the different genre is possible and potentially beneficial. The initial study in Chapter 1 gave an opportunity to compare the 3-party consultations of Gloria Hunniford’s Small Business queries (SB) with the panel consultations of Gardener’s Question Time (GQ). In general, both programmes agreed on the same distinctive patterns in all the analyses. Variations across the interactions as a whole were more evident than any variations due to programmes. For example, the SB5 interaction generally stood out as different to all the others.

Slight variations between programmes though were evident. More talk generally, more turns and more interruptions by the Layman and Chairman, especially in the solution section, were all found in both the Turn-Type and Functional analysis studies. Nevertheless, the graphs and the statistical trend test indicated that the same general pattern existed for both programmes and the variations did not interfere with this pattern.

Neither did differences disturb the pattern in the other samples. The same trend can be seen looking at the differences when comparing the unchaired computer advisory consultations (CC) to the chaired Fix-it phone-in samples (FX). In the unchaired consultations, all the sections common to the chaired consultations occurred and in the same order: Opening, Query, Solution and Closing exchanges. An extraneous section, i.e. arrangements to confer "off-line", found in some unchaired interactions didn’t disturb the basic pattern, which continued.

What about these slight variations between programmes? The panel GQ consultations appeared to have the barest structure with minimal opening and closing exchanges and few long Expert solution turns. (see Chapter 1) In comparison, the SB 3-party consultations had more turn exchange in the solution and more "general-interest" talk in the opening and closing sections. The unchaired CC consultations showed more turns performing a greater variety of functions in a longer solution section than comparable 3-party radio consultations. Increased restriction of the consultative structure,
especially in the length and variation of the solution section, appeared as the number of participants increased from 2-party to 3-party to multiple-party interactions. Could the restriction in structural form be due to the amount of people potentially involved in the talk? Atkinson (1982) suggested formal features, which have been identified as restrictive, were particularly relevant to multi-party interactions. Without the difficulties of constraints of multiple participants, the solution entertained more freedom of access to the Layman in the form of interruptions. Perhaps solution interruption becomes more difficult when more participants were potentially involved.

7.4. FUTURE APPLICATIONS

7.4.1. EXPERT SYSTEMS

Knowledge about human consultative structure might be usefully applied to the user interface design of Expert Systems. As Norman and Thomas (1990) pointed out, the real benefit of such applications is not in the modelling of human ways within the design of the system but rather in the designing of a system to perform according to expectations that the human will have about the interaction. At least, working with interfaces that respond in similar ways to human-human interactions would allow more novice users to use the system more fully with a shorter period of training. Findings reported in Chapter 1 suggested that the relatively poor results of many current Expert Systems' interfaces implied that the structure of human-human consultations may be superior for its accomplishment.

In this thesis, especially in the unchaired consultations, the layman was found to be surprisingly active in the formulation of the solution. Experts were found overwhelmingly to present the solution immediately and then both expert and layman appeared to negotiate the most suitable solution. In comparison with expert systems, human-human consultations revealed possible instigations for increased layman role in the solution: 1. poor layman formulation of the question due to limited knowledge of
the domain, and 2. layman pre-conceptions, even if inexperienced in the domain, about what the solution should be. (Alty & Coombs, 1981; Kidd, 1985).

Observations of the solution sections of human-human consultations, in comparison to expert systems interfaces, revealed a number of salient characteristics. Kidd (1985) found that layman intervened in the solution in order to indicate desired constraints on the solution, to point out solutions already tried, or to request assessments of alternative solutions or additional information. Expert dominance of the solution was found to be rare and to result in increased dissatisfaction for the user. (Coombs & Alty, 1984; Kidd, 1985) Not surprisingly, consultations in which experts were found to give a broad range of conceptual information were judged more satisfactory. (Coombs & Alty, 1984)

The user of an expert system, therefore, would seem to benefit from a more active role and greater access in all sections of the process. Specifically, greater access to the query presentation was needed in order to accept a broad range of questions or additional information provision. (Frohlich & Luff, 1990; Kidd, 1985) Continual access to the solution was also needed as information possessed or required by the user might become relevant during explication. Therefore, future systems providing greater access to the user in order could better answer what the user really needed to know about the problem and domain.

Frohlich and Luff (1990) managed to incorporate such user access in an expert system interface using a more open-ended dialogue. An ever-present menu of words/phrases and turn cues, e.g. full-stop, allowed the user to constantly and precisely access the system. The designers also instituted a dialogue control mechanism to allow regular exchange of talk. By exploiting the principles of Conversational Analysis' turn-taking mechanism and adjacency pairs (Sacks et al., 1978), the designers devised rules that guided selection of one, or a set of, expected next-utterance(s) on a local turn-by-turn basis, conditional on information from the interaction's history. For example, the
"common adjacency pair" rule specified that a user turn followed a system turn and then returned to any outstanding questions in the interactional history before continuing. The turn-taking device exploited the question-answer nature of the consultation and so, the interaction was based around a series of question-answer adjacency pairs between the opening and closing sequences. The latter two sequences were also designed to produce user questions which meant that talk was initiated by the user using an adjacency pair structure. So, applications of the beneficial aspects of consultative features have been made in the interfaces of expert systems.

For overall structure of the consultative process, Coombs and Alty (1984) reported on MINDPAD, a problem solving system in which the user has the active role and the ADVISOR section of the system guides the user in his own solution of the problem. The user provides an explanation for the fault and then may call on the ADVISOR for a critique of his own explanation or for advice on a strategy with which to proceed. The ADVISOR identifies specific comprehension problems in the user's explanation and refers the user to relevant topics in a knowledge base from which the user may proceed to formulate a new explanation. Again, an active role for the user in the creation of an appropriate solution was thought to be beneficial.

7.4.2. METHODS OF ANALYSIS

The sequential nature of talk, the question of appropriate yet reliably identifiable units, and wide variations in form are all counterproductive to the empirical study of talk. The initial study in Chapter 2 revealed advantages and disadvantages in a wide range of structural analysis types, encouraging increasing novel approaches. The Turn-Type analysis was statistically useful as it dealt with precise measurements though it restricted researchers in the behaviours studied to those chosen a priori. The Functional analysis was structurally useful because it provided a model framework but the categorization of "acts" meant that they could not be guaranteed for reliability or
validity. The CA analysis had the greatest explanatory power and the most valid features, being derived from participants’ own display however, its resistance to generalization deterred large-scale investigation.

Perhaps, combinations of these methods would be ideal using the objective behaviours for statistical testing, a model design for a general perspective and the CA features for explanatory purposes. However, such combinations were not easy to see. For instance, operationalization of CA features was very desirable but difficult to achieve. Nevertheless, this thesis reported on two novel approaches.

Two novel combinations of different analysis types were attempted using flexible statistical techniques, a turn-size based model and a cluster analysis of conventional words. The model was able to deal with the considerable amount of reliable and objective data that represented the entire interaction. Although the units of turn subsequently did not prove to be the ideal ones, they were easily and reliably measured. The sizable amount of material and the model’s flexibility allowed a convergence on the definition of the pattern’s states. The cluster analysis could examine any word or phrase consistencies quickly and reliably. Some clusters could be attributed to each of the states or differently to states which may permit reliable identification of these states.

7.4.3. FUTURE QUESTIONS

The consultations in this thesis were interactions in their entirety and included initiation and closing of talk between participants. The consultation might have to be initiated within other talk already begun between the participants. In prefaces to meetings, another "formal" speech event, the Chairman was found to request mutual agreement before the meeting’s initiation using "we" and "start" phrases, e.g. "Are we ready to go again now?" (Atkinson, et al., 1978), "Look, before we start" (Turner, 1972). Some situations would seem to be pre-defined as consultative, e.g. a medical consultation. If the situation is not clearly consultative, the initiation of a consultation
might require an explicit proposal and acceptance by participants. However, the procedures for the initiation and acceptance of a consultation may be only evident in more ambiguous consultative situations than found in this material.

After investigating the invariant structure within consultations, attention could then be turned to the variations of the structure shown in this thesis. Diverse executions of consultations may be investigated within cultures which exhibit different degrees of the usage of formal speech features (e.g., Rosaldo, 1973). In addition, Alty and Coombs (1981) found slight differences in structural characteristics due to levels of expertise of the user, or layman, as rated by advisors. Control, defined by initiation of question-answer sequences and response to statements, was shared between advisor and very expert users, rather than biased towards the advisor. More explanations were given to very expert users to support instructions, in contrast to the experience of other users. Within consultations, specific manifestations of the states identified could be more closely investigated.

Analysis of the material collected and fully transcribed, though wide-ranging, is by no means exhausted. No analysis is ever complete and it is the author's hope that this material will be useful in many further studies. To this end, the transcriptions were made as fully as possible in an accepted format. Such a large corpus of material solely on consultation yet over a wide range of expertise domains and settings could not be seen to be matched in the literature.
REFERENCES


Chapple, E D (1940) Personality differences as described by invariant properties of individuals in interactions. Proceedings of the National Academy of Sciences, 26, 10-16.


Cook, M and Lalljee, MG (1972) Verbal substitutes for visual signals in interaction. Semiotica, 6, 212-221.


Duncan, S (1973) Toward a grammar for dyadic conversation. Semiotica, 9, 29-47.


Clevedon: Multilingual Matters.

Clevedon: Multilingual Matters.

Rogers, WT and Jones, SE (1975) Effects of dominance tendencies on floor holding and interruption behavior in dyadic interaction. *Communication Research*, 1, 113-122.


APPENDIX 1. Transcription Notation

n.b. based on the notation developed by G Jefferson (see Atkinson and Heritage, 1984, p. xi-xvi)

UTTERANCE PLACEMENT
[[ simultaneous utterances linked together at origination
[ overlapping utterances, not starting simultaneously, are marked at the point at which
the ongoing utterance is joined by the other;
] point at which the overlapping utterance stops, if it stops before the ongoing
utterance does
= contiguous utterances with no gap in speech flow but being separated in
transcription are 'joined' either side of the gap

PAUSES
(.) short pauses
* longer pauses
(pause) long pauses between speakers

SPEECH DELIVERY
: extension of the sound of the syllable
hh. aspiration
.hh inhalation
(h) placed within word indicates breathiness in the word.

n.b. in the above notations, increased number indicates increasing degree.
. low subdued falling tone
, slight rising tone
? sharp rising tone
- abrupt cutoff

**underlined** letters emphasized

CAPITAL letters much louder than surrounding talk.

@ part of utterance quieter than surrounding talk.

< part of utterance delivered more quickly than surrounding talk.

(( ))) description of recognizable non-linguistic sounds.

( ) words within single parentheses are in doubt; when parentheses are empty, no attempt could be made at the sounds in question.
APPENDIX 2. Transcriptions of GQ and SB Interactions

GQ1

1 C First question please
2 L Beryl Young. (.) I have a winter heather and dwarf conifer bed which is now eight
3 years old. Can the team suggest how best to cut back the heathers (.) now rampant
4. hh which are choking the trees. I trim the heathers annually after flowering .hh but this
5 does not stop them spreading.
6 C Thank you Mrs Young, Daphne how would you tidy up a bed of rampant heathers
7 bearing in mind that Mrs Young gives them a haircut after flowering as it is:
8 E1 Oh I think Mrs Young is doing exactly the right thing aren't you< I mean you're
9 doing exactly what keeps the bushes growing and uh looking in good trim the heater
10 bushes. (.) The problem is and this is the problem with
11 L [(yes]
12 E all heather and conifer beds where you- (.) have very small heather plants (.) and
13 slightly larger conifer plants that the heathers generally grow quicker than the conifers.
14 (.) hh=
15 L [umhm
16 E =and uh I think th-th-that the problem stems not from now when they’re getting too
17 big<but from eight years ago when probably the conifers you chose were too small:: to
18 be use::d in the be::d with heathers (.) .hh uh it to my
19 L
20 E mind the very slow growing conifers the ones th-that are very widely available for
21 this (type) of planting now (.) aren’t suitable for mixing with other plants.
22 L [that’s (right]
23 E I think that if you’re really going to have a heather bed than you’re really got to have
24 it on some size if you mix it with conifers. and the conifers are going to
25 have to be the degree up f’from the very small ones. Certainly I I’ve got this problem
26 at home at the moment and mine are six years old, (.) and I’m gradually taking heathers
27 out and replacing them with young ones because if you cut them back into the old wood
28 they don’t (.) come again (.) generally speaking .hh so really what you’re doing is
29 you’re doing all the right things for the heathers:, (.) but it isn’t sufficient because the
30 conifers are growing too slowly. (.) So I I I think as you’ve got- this * problem now
31 it’s easier to scrap some of the heathers and replace, (.) and do it (.) gradually over a
32 period so you don’t have an all bare bed again um and encourage the conifers a bit
33 more. The only problem that you’ll have and there’s no way round this now
34 L [mm
35 E is that you’ll have bare bases to a lot of the conifers. * the th-the thing to bear in
36 mind if anyone is doing this sort of bed don’t go for prostrate- junipers or anything like
37 that because they’ll be swamped anyway
38 L [no
39 E2 It was the in thing wasn’t it about eight years t’ago to fill a bed with uh conifers
40 and heathers ? (.) and then eight years afterwards everybody be’ll in the same boat as
41 you. (.) I think you’ve got to up along straightaway and and dig those heathers out (.)
42 I don’t think you could do anything else. Maybe take cuttings * which are very easy
43 to do in a small pot you could take hundreds (.) in a five inch pot and they root quite
44 easily * and start all over again. But (.) just be careful that you don’t plant too many
45 heathers which a lot of people did originally * and maybe I’d be looking at something
46 else * to go in amongst your conifers * instead of heathers you know something like
47 ( ) or something like that or some of the low growing k- uh aconiatas they would fill
48 the gap they would suppress the weed and they wouldn’t do as much damage to your
49 conifers.
50 C When would you take heather cuttings (.) uhh Fred.
Well I would take them round about July time just when as you get the new pieces growing when you've trimmed them back * that'd be the time that I would take them off * put them in a beaten sun compost (.) ( ) only in little tiny slips bout half an inch long and dibble<them in and put in a cold frame. I have actually tried to take cuttings, I'm usually quite good with cuttings but with heathers I haven’t had very much luck.

Well if you can't take cuttings, all you need to do is leave one of each colour * of those plants in * and all you need to do is get a bucket full of compost and just tip it right in the middle (.) of the heather plant, leave it in out to the side I call it the Friar Tuck look * y'know ( ) .hh a bald head and bit of hair sticking out round the side and if you got there the year afterwards all those pieces will have rooted.

Simple isn't it yes. I mean one of the advantages to having this of course is that presumably no weeds come through, Oh true.

Leave well enough alone ( )

Thank you for the question Mrs Young.

Thank you very much.
GQ2

1 C And we're ready for the next question please,
2 L Mrs Judith Wilson * We have a small concrete lined pond (.) inhabited by a number
3 of goldfish: where a variety of water plants thrive when the blanket weed doesn't choke
4 them. hhh when would be the best time of year to clear the bottom of the pond of dead
5 and decaying leaves
6 C Thank you, Mrs Wilson, Well Daphne is it a good time of year to do it
7 now * clear out garden pools ?
8 E [wh-
9 E Are your p-plants in containers.
10 L Um some of them are in containers and some of them are floating f-freely
11 in the water.
12 E [so they they're capable of being lifted out quite eas=-
13 L [Oh yes
14 E =In that case I would say that as soon as possible
15 L [umhm
16 E because what worries me a bit about it is that if you've got a lot of dead and
17 decaying leaves that (.) they will give off gases especially if it
18 L [umhm
19 E happens to get um frosted over if it if it's frozen over * and
20 L [yes
21 E you'll probably lose a lot of your fish I know we we all had a problem with this
22 L [umhm
23 E last year. ha. Why I asked about whether they were in containers or not was that- I
24 wouldn't- like you to disturb the plants at this time of year because they don't move
25 L [umm
26 E very well during winter th-they're dormant(,) and therefore if you start splitting them
27 up or if you take them out of the soil if there's soil in the bottom, (.) then the chances
28 L [umhm
29 E are they'll rot and not only will you lose your plants but you'll you'll have
30 L [yes
31 E even more problem of of rotting vegetation. (.) But certainly if you can lift them out
32 easily, then to sift out the most of the the the dead and decaying stuff, (.) and then
33 probably um it wouldn't do any harm to five it a proper clean out probably about May
34 when the water's warming up a bit.
35 C Stefan
36 E2 Well I would do it (.) twice a year but now is an excellent time of year to if you
37 have an electricity supply to your pool and many people do if they have a fountain
38 there (.) is to buy and install one of these very small (.) pool heaters you can buy them
39 for seven or eight pound. they will fit onto the electricity supply, hh and these will
40 keep a very small area of the pool surface free from ice right through the winter. (.) I
41 (fitted) one last autumn and it made a big difference. But also you mentioned blanket
42 weed and if you have an electricity supply to the pool, I have found that a small
43 C 
44 E fountain in the pool has made an enormous difference to the buildup of blanket weed.
45 C Does that help
46 L [Thank you
47 L yes that'll be very useful
48 C Oh good (pause) who's next
C Who's next (.). yes sir.
L hh Dennis Daly. * Could the panel tell me why, (.). I never get good results from freesias. * I put about eight to ten bulbs (.). in a ten inch pot, * I get good foliage * but very few flowers.
C Right freesias fail to flower Fred * explanation please,
E Can you tell me, are you trying to grow these (.). inside all the time or do you put them outside
L [No they're outside till uh- end of September. (pause)
E and then of course you bring them in yeah
L [and them I put them inside in the uh greenhouse
E [yes
E and I think maybe you're bringing them in * too early * because with freesias
L [yes
E (.). what you've got to do I mean you're doing the right thing you pot them up * maybe * a bit smaller pot than that would ideal but you put them outside first of all and keep them cool (.). and moist (.). and don't let them dry as the foliage extends and
L [yes
E grows then you give them a little bit more moisture (.)
L [yes
E .hh keep them a bit damper and then that will improve the foliage of course and keep it shorter. * .hh but don't bring them in at all until you see some sign of flower but. (.). popping through those leaves.=
L [yes
E =it doesn't matter when it is, (.). it doesn't matter whether it's September beginning of October or even if it's in November. (.). if you can put them in a cold frame * and cover them up when it's m'comes really cold so it's (.) um frosted or anything wait till the flower buds are showing * then bring them in (.). giving them some warm
L [yes
E (.) about sixty degrees or so (.). the stems will then elongate * and you'll get flowers * and what beautiful flowers they are * and what beautiful perfume when you
L [yah
E come downstairs in the morning (.). you can't whack’em
L [yes
E can you
L hhno (.). hno (pause)
C next question please.
C Marion Tapp (.) is on the line from Weston-Super-Mare, G'd afternoon Marion
L Good afternoon
C I suppose it is coming down in stair rods with you in Weston is it?=
L =Oh absolutely yes
C Mis'ralle day<Anyway glad you called in, * so what's your question.
L The question is father and son * are in business together? * .hh and the son gets
married .hh * and the wife joins in the business * do they need a partnership agreement.
E .hh h-hello Marion.
L Hello-  
L I wonder wh-what's what your particular concern is:, eh when you talk about a
partnership er um eh I'm I mean in principle I think everybody who is in partnership
together father and son * husband or wife should have some sort of written
partnership agreement It may seem silly .hh but it's really quite a sensible thing to do
and o(h)viously particularly if you're um: eh if it's not a member of the family .hh
because going into partnership together is * something which you need to do with
your eyes open because you're really putting an awful lot of trust and faith in the other
person .hh um so um ((cough)) what was your particular * point
L .hh
L well we've- uh probably- * gone- too far ahead w(h)hen people start up in business,
* as our business did start up and no partnership agreement was: thought of at that
time. * and uh now we're hitting one or two snags, .hhh and uh * you know I just
wondered uh * how necessary it was.
C W-what type of snags Marion could you be a little bit more specific?=
L =um well the father is about to retire, * and the husband and wife are carrying on
you see:, * and so y-you're wondering just what is happening here you see .hh and how
far * everybody was indebted and to what point they were indebted * .hh to the
company and that.
E Oh it ((cough)) is it is it a company rather than a partnership.
L .hhh it's neither it's just a a business (.) exp-0
E =oh it is a partnership then even though
L you haven't got any written agreement it it t-is a partnership. um ((cough)) I uh I mean
my advice to anyone starting a partnership is to get a written agreement. to get
everything agreed before you actually start to decide how ya gonna split the profits,
how ya gonna split the tax bill, how ya gonna split the work, it's really very very
important .hh in your case * that's obviously a long way down the line
L yes=
E= umm I I suspect that it's probably a good opportunity to t-talk to your solicitor
about it and t-see: if: it's: possible to now introduce a partnership agreement
L I see=
E =um because i-it it won't be too late to do this because you can negotiate it<at any
stage that you like .hhh
L [I see=
E =um * and * it's it's probably well worth * while- * uh finding that out from your
solicitor.
C yes obviously get it on paper Marion because ehh the awful thing is eh that no matter
how harmonious things are within business I mean suddendly you can have rifts in
families can't you-cand better to have it in black and white.
L I see. * .hh yes thank you very much
C What sort of business are you in by the way.
L Uh it's retailing * hardware
C Ah so you're in the shop at the moment.
L: yes  
C: yeah I thought I heard somebody come through the door  
L: [hh.  
C: there for .hh a second .hhh  
L: [kheheheh  
C: Thanks a lot Marion * good luck.  
L: [yes right oh ]  
L: bye bye  
C: bye
C (Christine) in Midhurst Hello Christine

L It's Christine Perrit

C Oh Perrit

L Yes

C Well I'm glad we got it right then Christine hehehehe

L [.hhe

C and what's your question.

L Well eh my question is more of um (.) for my daughter. * I've been in business in um (.) k-l-ladies clothing trade for over twenty years and have enjoyed every second of it I can sincerely say that (.) .hh but now my daughter is very keen: to start up or to continue um already (.) b- already going concern i:n Kaygate (.) .hh well uh what worries me mostly is she's really going in on a shoestring (.) .hh um she has to borrow money to (.) buy stock, she had enough to- (.) buy the lea:se but she has to b-uh borrow to buy stock, .hh and um ahah ha-however (.) whichever way I go about it s- seems as if I'm being rather a wet blanket (.) rather than * cause I can't encourage her too much (.) she thinks she- I think she would be very very good there's no doubt about it she's she's wonderful with people, (.) .hh but em she's just a little bit too: too: um she expects too much I think, and ummm the point is * it's just not there * one has it takes ti:me to build up .hh any amount * of um capital, in in any form I mean we know: (.) it (.) just took us a very long time just putting efforts in and taking nothing out.

C So what are you what are you ideally um as you've got lots of experience what do you ideally want her to do

L I would * rather * her well be a little mo:re * l-less enthusiastic=

E ((sigh))

L =um as I say it's terribly difficult because eh uh I feel eh it feel- it seems rather that I'm putting here off and um (.). trying to dissuade her all the time.

C In fact this is what Sarah was saying at the beginning

E [.hh

C maybe you'd like to leap in here with some advice Sarah

E [yes [yes

E um y-your your daughter Christine is she she's already (.) um has a business already going is that right

L yes she's a business already=

E =yes uh umm * cause eh um I um don't know how old your daughter is but there [hh.

L E are a number of schemes for young people.

L [oh she's just forty

L She's just forty

E Oh right no well these these schemes are for um people who are aged twenty-five or less um the um Prince Charles:: * the Prince's Youth Trust has a number of grants and

L [umm

E loans available (.) for young people who are starting their own businesses (.) that obviously this doesn't apply in your daughter's case

L no

E [(humm so y-your (.) main worry is that (.) she's too enthusiastic and she's not looking at all (.) the pitfalls and the (.) and the problems

L exactly yeah=

E =have you thought about um suggesting that she goes to (.) one of the advice agencies which are around I mean there are a number of uh advice agencies (.) there's the Department of Employment Small Firms service, there are a number of enterprise agencies .hh now they (.) they can be very helpful to people who are starting up and
they can take you through every step that you need to take (.) um. Has your daughter thought about that ?

L No it hadn’t even occurred to me

E Hmm I think that would be quite useful um (.) cause they can eh they can look at you daughter’s idea and and see if it’s got some really good value.

L (uhhuh)

C And where do you find those advice centres

E Um well the Small Firm Service you can find your local one by ringing um Free um (.) you dial 800 and ask for Freephone Enterprise (.) and the Enterprise agencies (.) I’d ask in your local reference library who- ((clock chimes)) where the local enterprise agency is, (.) or (.) there is an address which perhaps we could give in a little while of the umbrella organization for enterprise agencies.

C We’ll do that Christine actually your clock is a bit (.) a bit fast isn’t it.

L hahahaha

C Hst hh It’s on the stroke of three already

L [It’s very lovely but it-

L It’s very lovely but it (h) doesn’t keep good time

C Hhahaha I like the chimes though

L hye(h)s thank you

C Christine I hope that’s been of some help,

L Yes I I (.) as I say it’s very difficult not to think I’m I’m being the one that’s sort of putting the brakes on everything, but I do want her to to sort of explore every avenue

C Well if you if you ring that number (.) and we will

L [um]

C =give you an address later thanks a lot

L Thank you very much for your help (pause)

C bye bye Christine

L bye bye
C: (Nicholas) from Ship’s Castle Good afternoon to you Nicholas?
L: Good afternoon,
C: Are you in your own business,
L: Yes I am
C: What kind of business
L: I manufacture high quality handmade furniture
C: Ummm sounds very good. *wa-was that a very (. .) brave decision of yours to start it up or has it been a family business for a long time.
L: Oh no no I uh started it up I was (. .) teaching for a number of years and lost (. .) .hhh out on the teaching (. .) cycle (. .) I felt the teaching was going (. .) wrong so I * I changed to- bein- self employed
C: Any regrets,
L: None eh whatsoever
C: Hahaha well that’s encouraging isn’t it .hh so what’s your question today Nicholas
L: Well (. .) I said I have a small business and I got a bank- business bank account with Lloyds, * and in December they’re gonna charge (. .) me fifty-five ’p’ for every time I pay something into the account and fifty-five ’p’ for everything I (. .) pay out Now I worked out of over a period, (. .) that’s an increase of about forty percent
C: That’s a lot isn’t it.
L: O-over my * present bank charges. And I wondered if uh (. .) Sarah could give me any .hh um ideas or alternatives to uh LLoyds Bank.
E: khhh Hello Nicholas. (. .) th-there’s a question for you.
L: Khahaha
C: khhaha
E: Duh is is this this um the: standard business tariff which-=
L: =yes that’s right=
E: =which which you’re talking about=
L: =yes that’s right
E: Umm so what you’ve elected to choo:se you’ve elected to go on this standard business tariff * you weren’t on it before y-=
L: =I didn’t I had a letter from the bank saying that I (. .) they were going to change the account over to that (. .) to that (. .) and that would be that=
E: [to that basis=
L: =yes
E: I I think you have a word with your bank manager. (. .) and see if you can go back to your old basis if you if you really w- (. .) have worked it all out and you find it’s going to be much more expensive .hh um I I suspect that your bank manager actually thought he was probably doing you a favour in putting you on to this new scheme because for some people i::s i- (. .) i-(. .) it is it can be an advantage because you do know what it’s going to cost you .hhum (. .) um so
L: [yes I have actually been to the bank manager, (. .)
E: [(sigh)]
L: And I uh I’ve got nowhere. He says um well that’s what he’s going to do and that’ll be that .hh um (. .) and he agreed wi- me it would be a forty percent increase
E: ((sigh))
L: Rright * umm I think you’ll have to go back to your bank manager and if you don’t get (. .) success with your bank manager I I’d take it further up because (. .) um my understanding is that you can choo:se it it t’isn’t compulsory * um (. .) but um I re-
E: [(( ) be]
L: Y-you should really check that out (. .) with your manager and and take it further up as well if you’re still not happy with that
C: Or or alternatively threaten to take your money elsewhere Nicholas
Yes although unfortunately uh that's not always possible. Barclays are already doing this and uh Midland (. ) mmight (. ) introduce it in the near future.

Actually it's it's a lot to take into consideration isn't it I mean in terms of any small business,

.hhh yes it's a * the bank charges seem to be very high I (.) I feel for when you’re starting off anyway I mean so I've only been going three yea:rs * but it seems it uh uh: that uh (.) uh fifty-five 'p' to pay in you see is the what really gets in sticks in my throat so to speak

.hhh yeah just for the privilege of handing in your money

That's ri:ght

um why uh I mean any idea why that is Sarah,

um th-the it was a scheme bought out about a year ago (. ) umm a-and the advantage of the scheme is that you (.) know exactly what it's going to cost you whereas um on the normal sort of basis which is w-what occurred before and still occurs with some b-banks. (.) is at the end of the um month or the quarter or however often your charges are drawn up you don’t really know um the basis on how the charges are made and um the standard business tariff as I understand it th-the advantage is that (.) you know exactly what it's going to cost you so you know where you stand .hhh

I mean is the situation with some of the banks that um providing you keep a certain amount of money in the account (. ) um th-th-that the charges can be negotiated

not uh not as far as I kno:w (. ) umm it's it’s always worth negotiating with any bank

I think that's a p- a general point actually to make about- about banks is (. ) never be frightened of negotiating with them because (. ) they're very very keen to attract small businesses um so they can often be quite helpful (. ) um so it's definitely worthwhile negotiating and it's definitely worthwhile trying uh (. ) other banks I mean not just y-your own bank but um shopping about and seeing what you can get.

yes because if they're keen to get your account or keen to get money Nicholas you never know they may waive the concession or something.

Oh they do for the uh (. ) when you’re starting up (. ) for the first year (. ) any (. ) oh well the two banks I’ve talked to Barclays (. ) and (. ) Lloyds w-ill waive it for the first year * but it's the years afterwards.

C mmch well Nicholas it's back to the bank manager

I'm afraid

L [yes it is indeed

Thank you for calling.

Righteeo

okay bye bye

L bye
APPENDIX 3. Transcriptions of the Sample 1 of Fix-it Phone-in Interactions (FX1)

FX1GY

1 C We’ll go to Amy now, who’s in (.) Newham. Hello Amy,
2 L Hello yes, (.) um yes I: I’d like some advice about my uh umm camellia that’s in
3 bud: One is just uh beginning to open, and I’ve got eighteen buds on about a two-
4 foot bush that has been in a tub for five years< I’ve had it about five years.hhh um
5 now I brought it in last week from the uh unheated conservatory into the living room
6 I’ve got it low down on the floor so it doesn’t get too( ) warm (.) so can I leave it in the
7 living room- or will the buds drop.
8 E Uh it’s a bit risky Amy, * bringing it in like that from an unheated conservatory (.)
9 L [um
10 E uh It’s done very well to to have eighteen buds on a two foot bush
11 L [(well after it )
12 L I had two buds on about two years ago and they both dropped off, (.) hhhh
13 E [Yes
14 E yeah really it does (.) much better in an unheated conservatory. umm mm you’ve got
15 to (.) try: and keep it cool: don’t- what you must do is avoid extremes of
16 L [yes
17 E temperature and avoid letting the plant dry too much and, (.) if the atmosphere in
18 your living room is a little bit on the on the dry side just give it a light misting uh
19 about once or twice a day. The difficulty is trying to keep (.) enough moisture in the
20 air and in the soil without too high a temperature otherwise the buds will fall off
21 L Yes if I put a plastic uh hood over it in the daytime if it gets too warm does help
22 (or-)
23 E umm no it may not help it may even make it a bit worse:
24 L [I see
25 E because the temperature might shoot up inside the
26 plastic hood Try and keep it out of (.) direct sunlight but keep it in a very bright place
27 L [um
28 E it’s a bit awkward inside a room (.) that’s why if you ever go to any of the big
29 houses where they have unheated conservatories and they have such super (.) displays
30 of camellias right now this time of year and they’re all beginning to open I
31 L [umhm
32 E mean it’s worth a try but at the f-
33 L [What about the cold hall. I keep that unheated cause I’ve got all my
34 other garden plants in there you know sort of flowering plants and things
35 E [yes [yes
36 E that that would be much-
37 L [would that be better.
38 E Yeah much better providing it’s bright enough (pause)
39 L Yeah well I’ve got one window that gets the afternoon sun
40 E Yup * yeah keep- I I would move it into the hall. (pause)
41 C Right-
42 E I think that’s probably gonna be be okay
43 C So they need quite a bit of light do they
44 E Yes the- I think the unheated conservatory is is is absolutely ideal for them as long
45 as they’re not gonna get ( .) uh too much of a blasting from the sun
46 C umm okay Amy thanks for that
C: John, it's Chris ringing in from Woodford Green. Hello Chris,
L: Uh, Good morning Therese. Good morning John.
E: Good morning Chris,
L: [ummm] My question is a fairly simple one. It's actually how do you grow garlic. I've had two lots conflicting about some people say you should actually use a garlic clove. Other people say no, you should actually use garlic seeds. But I've been unable to find a shop that actually sells garlic seeds. Could you advise please?
E: Hahaha, well, I think the argument is a little bit the same as growing onions to which the garlic of course is very closely related.
L: Yeah
E: Do you grow onion from seed or do you grow onions from onion sets.
L: [Right]
E: I think the two are very similar because the way that they two crops grow is is very much the same. I think First of all trying to grow garlic from the clove of garlic that you've got in the kitchen is probably not such a wonderful idea since you really don't know whether that is adapted to the growing conditions in this country
L: That's what I've been told. Yes
E: Yeah, so get in touch with one of the main seed houses and I think somebody like Thompson and Morgan for example do a pretty good deal. They've got special sets of garlic which you can buy and uh they will take off. You see the season is a little slow - usually to get underway here in the country, except in the warmer parts of the south and on the south coast perhaps is a little bit different. But I grow onions from onion sets and I would grow garlic from specially selected uh sets and put them in a fairly light sandy soil=
L: Yeah
E: Uh, because they like to have reasonably free drainage. Make sure they're in a sunny spot because the important thing to do is get the bulb - to ripen off towards the end of the summer. Don't be too quick to lift it.
L: Right. Is it actually possible to grow them in a greenhouse if they actually have to go out in the body of the garden within sort of sandy soil?
E: I think the problem with the greenhouse Chris is going to be that the temperature is gonna get a bit too high.
L: Right.
E: And you're going to have a problem with watering. I would tend to put them against a sort of a south or west facing wall or a really sunny spot where they're going to bake.
L: Uh huh
E: If they're not ripening off too much and the summer tends to be a bit damp when they're big enough you can take them up and put them on the bench in the greenhouse or newspaper and they will really ripen them off hard as bullets.
L: Right. When is the best time to plant them?
E: Uh, as early as you can. Uh, the s'varieties selected for growing in the UK are usually pretty tough so I would be looking to get them in as soon as the ground is ready around the end of March.
C: Can you actually smell it as it grows John?
E No you've got to handle it actually Therese and uh (.) you don't have to crush it
actually you've only just got to rub your hand lightly over it and you get that lovely
smell< well I think it's lovely anyway
C Yeah so do I! Chris thanks for your call,
C Elizabeth on the line in Fulham, Hello Elizabeth,
L Hello? * good morning. * uh I have a question about my fuchsia bush eh in the
3 garden. It's quite a tall one? about one and a half meters, umm it flowers rather late
4 in the season and goes on flowering until uh October. emm them em I used to cut it
down in late M- in the middle of March. (.) but now the new leaves have already some
6 out on the old branches and I wondered what shall I do with it now shall I leave it or
7 shall I just cut it down as I used to.
E 
9 E Ah what a dilemma * what a dilemma eh? I think that
10 L [ha
11 E this fuchsia is the one with the little red droplet flowers
12 L Right nothing elaborate it's just rather common.
13 E [b-
14 E =It's a lovely no no don't call it common It's
15 L [haha
16 E gorgeous. It's a lovely plant I-
17 L [it is.
18 E In Cornwall you have whole hedges of it It's absolutely super .hh
19 L Oh really
20 E Yeah um so it's the nearest thing that we get to a hardy fuchsia really in this
country. It's known as the hardy fuchsia It will be one of the magellania types
22 L [oh [umhm
23 L Could be
24 E Yeah emmm * d'don't do anything to it for the moment Elizabeth because although
25 we've had uh one of these (.) awful winters umm it's not over yet and I think uh- I I
26 say it's awful because it's mild and muggy and horrible (.) and I love a bit of frost=
27 L [umhm
28 L Yes
29 E Umm really we have to wait until February is out of the way before we can be-
reasonably sure that we're not going to get a late winter. Follow your usual routine,
31 don't be tempted to prune it back now because if we do get some severe weather (.)
32 those nice soft shoots that are coming out now on the old stems (.) will be burnt off
33 and as you know of course * pruning it back in March you get those lovely strong
34 vigorous shoots from the bottom which give you all that lovely flower
35 L [yes [that's right
36 E Pruning it higher up will produce less vigorous shoots and less flower so follow the
37 same routine and don't anybody .hh be tempted .hh to bring forward any of hehh. the
38 L [hh.
39 E .hh pruning jobs you might be doing just because it's mild at the moment because
40 I: I don't know I have a feeling that maybe (.) we might get a bit of nasty weather in
41 February.
42 C mm I- like you actually I wouldn't mind a few frosty mornings as well
43 E Yeah
44 C Uh Jean's next in Bagshot
C: Uh Jean's next in Bagshot. Hello Jean?

L: Yes, good morning. Um I've got a brick-built outhouse and I'd love to make it frost-free and I don't really know what that means. I wonder whether John could help.

E: Okay, emmm probably the simplest and easiest thing you can do there Jean is to line [umhm it

E: inside

L: Ah

E: with some slabs of polystyrene

L: Uh

E: to stop the temperature from shooting up and shooting down, (.) Ah then: having done that (.) and and you can line that incidentally you can put a lining paper over it if you want to to stop it getting damaged because [umhm

E: it's very soft. [uh uh then you can probably put um [hh what the experts call some black heat in there which are electric heating bars [hhh with a thermostat that will come on when the temperature goes down below about say five degrees

L: [ahha [yes=

E: = ah and that actually won't require um a lot of use in other words it's not going to cost you a great deal of money

L: umhm

E: but I think if I was going to * try to um * make a a brick-built outhouse frost-free I think that's what I would probably do because it's the quickest easiest most straightforward [hh and probably the cheapest way because you might be able to buy these [hh um (.) slabs (.) they tend to be used for uh covering freezers and big boxes

C: Oh yes

E: [uh when you buy a new fridge or a new freezer

L: oh: yes I know I know

E: [yeah so ]

L: Yeah I'm a great scrounger you know I love to be able to go and try and get something like that before actually going to ah a

C: [haha

E: a hardware place or a DIY shop and actually ordering it

L: [yes

E: Right well I'll start scrouning immediately

C: [hahaha

C: Ha

L: Thank you very much

C: Thanks very much for your call Jean.
C Pamela’s next on the line in Chalfont-St.Giles. Hello Pamela?
L Oh good morning Therese. Good morning John.
E Good morning Pamela
L Hello, I’ve got a twelve-year-old yucca plant, (.) that’s about six feet tall with two separate branches,
E Wow
L Ahhaha
E [haha
L Actually I inherited it I didn’t grow it. k.ha and um the at the bottom of one of the stems the leaves have started to go yellow I think it might be- something to do with the water not being able to uh get away from the roots of the plant and I’ve tried getting some stones out of the garden .hh and putting those underneath but because the plant’s so heavy .hh I can’t stand it on anything if you see what I mean, .hh I wonder
E [yeah
L if you could suggest anything I could put in the tray to keep the uh roots away from the bottom:.
E Um you can get * uhhh wh’what I would call trivets. (.) little uh metal stands. umm in sort of antique-y shops.
L [umhm
E uh which would take the weight. It would have to be something like that or em some pieces of of (.). em tile (.). which you buy-buy a tile a reject tile and break it into bits and .hh get a muscle-y man to lift it up
L [yes
E while you slip the tiles underneath, .hh Yuccas by the way at this time of year shouldn’t have too much watering anyway, .hh
L [no (.).
E [You might just be overwatering I think they like to dry out. (.). completely between waterings and at this time of the year they don’t want too much.
L Well actually somebody said to me rather than giving them tap water because it’s quite a chalky area around here, to use sort of tea that’s gone cold. Is that a good idea?
E ah occasionally, undiluted yes, (.). em but don’t
L [yeah
E include the tea leaves because they make a mess hehe but yes very occasionally umm
L [oh no hehe [all right
E but ease off the watering, let it dry out completely between waterings at any time of the year but at this time of the year (.). be rather sparing. They’ve got big thick stems which store loads of water and if the leaves are going yellow at the bottom that’s not too bad em because they do tend to lose those anyway but yes you need to raise the bottom of the pot.
C Do they like milk and sugar with it?
E hah I don’t think so no hehehe
C Just checking
1 C Are you there Victoria?
2 L Yes I'm sitting here.
3 C [Oh good
4 E Excellent
5 L Good morning John
6 E Good morning Victoria
7 L Umm I would like to ask a direct question about organic growing but I don't know
8 whether this will * be able to be covered by that. .hah a very heavy chalk border in
9 south London. We'd like to grow shrubs and this year we have (. ) laden it heavily with
10 (. ) uh I think it's horse manure actually (. ) quite well rotted horse manure What do you
11 suggest we do nowhh..
12 E Yeah Uh did you get the horse manure from a stables?
13 L .huh Yes we did.
14 E Yeah umm (. ) be sure that um they- sometimes you see when they're mucking out
15 horses in stables they tend to pile (. ) all the fresh stuff on top of the old stuff on the
16 bottom of the heap and it- I often say to stables who are offering free manure Why
17 don't you just have two heaps but. .hh i'if you're sure that it's well rotted
18 and it
19 L [Well yes it's it's umm from a (. ) a a stables in um New Malden (. ) um area where
20 E [yup [yes
21 L they also have - do a lot of gardening a lot of growing
22 E [yup
23 L lot of machinery perhaps it rings a bell with you
24 E [okay
25 E yep
26 L yes
27 E [yeah
28 L Ok presumably they know what they're doing
29 E [yes yup
30 E Yep so um yes I think that it's an excellent start putting plenty of horse manure in
31 the border and uhh dig it in well and after the shrubs have been planted * umm mulch
32 at least three to four inches thick after planting If it's well rotted don't worry about it
33 being close to the plant but if it smells a bit fresh that typical kind of ammonia smell
34 keep it a little bit away from the young stems of the plant but you know very important
35 part of the beginning (. ) of having an organic border is to make sure you have a good
36 thick mulch on the top and initially because of your type of soil you may have to repeat
37 that twice a year (. ) and after a couple of years you'll get this lovely deep brown (. )
38 soil on the top which you just keep building and building and building with annual
39 applications and that really should be enough 'a' to keep the weeds down and 'b' to
40 feed the soil
41 L Would we ever get away with planting azaleas and rhododendrons after that
42 E .huh ummm I think you're gonna have to i-uh in:clude something a bit acidy, now
43 what I would do is I would get some moss peat and add some sulphur * dust sulphur
44 over it and mix it in (. ) and then fork that in the top (. ) and in the planting hole add
45 some of this planting mix and again mulch it over the top and they should grow quite
46 well. You'd have to ask yourself whether you want to use sequestrian or not and
47 whether that might be classed as being permitted umm because it really is only trace
48 elements that occur naturally in the soil anyway uh because they will help a great deal
49 E [yeah
50 L as well
51 L Ok * thanks John see you next week
52 E Yeah bye
53 C hahaha thanks for your call Victoria
C Allen? ringing from Heathrow? Hello Allen?

L Yes Good morning. I’ve got a question on umm these fairy rings on: lawns umm I know you’ve had this problem before but umm the query I’ve got is, I’ve tried the treatment with epsom salt which hasn’t worked, and I’ve been told the only effective treatment is to actually dig the u:uh affected soil out. What I want to know is at what depth should the soil be dug out to and does the complete ce:ntre of the ring have to be dug out as well or just the circumference? and also where I can put the used soil that I’ve removed. on the compost heap, in boulders or or where.

L (soil) where.

E [khhahahaa] [hhhh] [yep] [kum]

L Ok How fit are you Allen

L Oh I’m reasonably fit yes

E Good you’re up-

L Capable of doing that job

E You’re up to a challenge are you?

L [yes]

E Right ok the fairy rings, umm We have to get a bit technical for a minute. Is the actual grass dying. (pause)

L ummm

E or is it just what we call the stimulated green zone.

L Well I got th’the green zone. The centre is a little

E [yeah]

L bit bearing patches but uhh

E [right] [Yep so you got the type one, uh which is marasmius

L Yes

C [[Is this caused by dogs?

E Uh No it’s actually a f- fairy umm toadstools which are growing in a ring

C Oh right

E and um there are various types the common mushroom for example is a fairy ring which many people don’t appreciate kum but it only creates a stimulation a sort of green zone. But this one that Allen’s got umm is the type one. Now Allen I think the best thing that you can do is you’ve got to dig it out you’ve got to discard the turf you’ve got to discard the the ring, um up to eighteen inches either si:de of the ring, and you’ve got to dig down, umm they they tend to go down very deep so I don’t think you can trace them all the way I would have said two feet is is more than enough. umm You’ve got two choices the soil you dig out you can sterilize with formalin. a four percent formalin solution. you’ll have to get that from your chemist. And uh be nice to him cause he might be a bit reluctant to give it to you it’s a bit nasty and you’ve got to be very careful how you=

C [used for=

E= handle it

C =preserving things isn’t it? formalin?

E [Yes that’s right yes and it’s a good sterilizing material,

C [ummm

E so you could use formalin solution and sterilize the soil that you dig out and then put it back or you can take it down the dump and get some decent loam and put it in and then use plenty of iron-based lawn dressings like musculus for example because they keep the grass really tough and nice and dark green and actually suppress the fungus as well (pause)

E is-

C [[Right have you got lots of these rings Allen?
Eh well I’ve got two quite large ones actually but ummm the the complete centre of the ring has to be out to: a depth of two feet. (that’s it)

Emm well I mean- (.) dig out the ring and up to eighteen inches either side of it the thing is the thing is they keep spreading and spreading and and [yep um either side

helicopter photography and even satellite photography these days which is so good (.). actually trace these rings to be hundreds of feet across and eh it’s gonna spread and spread. To be fair it doesn’t actually damage anything apart from the poor old grass because it dries out the roots but (*) it can be look very unsightly and eh really speaking that is the only answer.

Um sounds as if Allen has got quite a digging job (on his hands there)

[Oh yes yes take it easy Allen. watch the back.}
C We’ll go to Grace next who’s ringing in from Northwood Hello Grace?

L Oh hello, *

C Yes

L [ul-

E Good morning Grace

L Oh good morning, * kmm I wanted to ask you about my maidenhair fern. * adiantum

E [ye:s [yes

L you know?

E yes

L um It was given to me, and it’s beautiful it was a big one in a four inch pot, but it’s all shrivelled up and and di::ed.

E haahaha yes

L [um I suppose I’ve done all the wrong things.

E well the the maidenhair fern likes conditions to be (..) a little on the cool side, It needs to be in a room that uh the temperature isn’t going to shoot up and it also needs and this is the big problem (..) lots of uh humidity.

L [k.hh

E umm probably the best thing to do: Grace would be to (..) put it in a pot cover which isn’t too big

L What’s a pot cover

E um you can buy a pot cover in a garden centre, it’s one of these ornamental uh covers that you pop a pot inside (..) put some gravel in the bottom of it and always keep the gravel damp.

L Well actually I’ve got it on damp stones,

E Yes,

L Yes.

E Do you spray it at all?

L Well ah ah haha do you know? It died off you see and it got so tangled I’ve cut the whole thing off=

E =yes (..) well

L [I’ve cut- was that right?

E um Well if they’ve all gone burnt * and crispy you’ve got to take them off.< but the thing to do (..) is to (..) give it a feed now

L a feed?

E Yes give it a feed (..) to encourage it to make new fronds,

L umhm

E Get yourself a small (..) um hand (..) misting pump that you can but yourself in a garden centre quite cheaply with clean water in it preferably rain water and mist it two or three (..) times a day and keep it on damp gravel. .hh

L [oh-

E Don’t let it dry out.

L Did you say mist it two or three times a day?

E That’s right.

L umm,

E Yes keep it damp.

L Um do you think it will come to life again?
Oh I think it will! umm Not a bad idea actually to move it into the bathroom, or the kitchen where you tend to get more humidity than in a living room or a lounge for example.

Are these the ferns that are used in flower arrangements?

They uh are often used in flower arrangements yeah. They dry out the fronds are so delicate that they dry out so quickly (.) but uh you need lots of humidity.

um so they’re not- easy to keep going
C Uh it's Leslie in High Wycombe. Hello Leslie,

L Hello there. Good morning to you.

E Good morning Leslie,

L I've got a tomato problem a long standing tomato problem I wonder if you can help? Ehh I grow these things each year in a cold conservatory partly, and partly on a south wall in ten-inch pots I put the seeds in early March in the ordinary way, They ah germinate very well. I put them into three inch pots they go ahead very well, p'perhaps even too well I don't know. They're grown near to the glass because they need the light, they're kept warm with a heating coil round about fifty-five degrees:

E yup

L The problem is: that the first flower truss invariably is about two foot above soil level. and I don't seem to be able to l-to win

E yup

L Yup so ahm you're either losing the first truss or it doesn't develop.

E Right there's two reasons for that, firstly you may be growing the plants a little bit too quickly and they're stretched so that umm the first flower truss naturally is appearing at that height or the despite the fact that you're growing them in the best possible light conditions they just aren't getting enough light, and the first truss is what we call failing uh it might put out a few miserable flowers that you might not even notice and um it's failing. I personally think it's probably the first one. ahm maybe your culture is just a little bit too good and they're rushing away. It's

L ((hh.)

E very very difficult uh to keep them um growing sort of short-noded as we call you know with the leaves close together, right from the moment of germination. You need to cool them off and to give bags of light. now you can get special bulbs ahm which give them the right kind of light if the weather is dull like it is at the moment and we've not had a lot of sun hh and I think if the weather doesn't brighten up soon umm lots of people are going to have some long leggy tomatoes around

L ((hh.)

E the place. I think that's possibly the problem.<Another thing while we're talking

L ( )

E about tomatoes. is you can now buy in garden centres a super little spray, tomato-setting spray, umm it's almost like a little perfume aerosol It's quite a small one with a red top ehh if you use that it will help to set the flowers on your tomatoes so you'll get more tomatoes per truss

C um well Leslie thank you for that call
FX1GP

1  C Peter next in: Holloway. Hello Peter?
2  L Hello. Good morning kumm .hhh Got a question regarding reseltric trees: um
3 specifically lemon and orange. um Do I- would I need more than one tree per
4 pollination.
5  E .hh Umm (*) well you’re talking to the great amateur expert on a on on lemons and
6  L      [ahh
7  E oranges so ha I’ve I’ve gota mayor’s lemon a tangerine and a grapefruit.
8  L      [uhuh
9  L Umhm=  
10  E And the uh lemon tree is quite old. the tangerine and grapefruit are new and to my
11 amazement * uh they’ve actually started to throw flowers so young. .hh uh what I do
12 is I take um (.) a a small sable hair sort of paintbrush * and I I go around them
13  L      [yeah]
14  E going buzz buzz buzz buzz and I I just tickle the flowers and I do the pollination for
15  L      [hahaha
16  E them because uh * we’re not likely to get many insects, you see the trouble with
17 the citrus fruit is they flower very early * and even if you t’were to open all the doors
18 and windows in the conservatory you’d be unlikely to catch a bee (.). so (.). take a very
19 fine uh paintbrush. uh when the flowers are fully open and it’s a job you have to do
20 every day incidentally because (.). umm you know they they don’t open all toget(h.)er.
21 * in little bunches on the end. * and uh do the pollination yourself.
22  L Does e’very day when the flowers are there.
23  E Yes I tend to go around them once a day * and uh just tickle them (.). and uh it
24 actually sets the fruit very well
25  L Rright .hh
26  C       [(You’d have to wear a black and yellow jersey? wouldn’t you
27  E Yes that’s right and don’t forget the buzz buzz bit=
28  C            [hahahaha
29  E that’s very important. But that actually does the trick
30  L      [Do you-
31  L Do you know of any um books on the subject on on growing natural plants,
32  E umm well I bought my- tangerine and and grapefruit from the sales centre at the RHS
33 gardens at Wisley and they’ve got a terrific selection down there and they also do
34  L      [oh right
35  E some fact sheets. (.). on basic culture (.).
36  L Awh
37  E     [and uh (.). you just call in at the information point and they’ll give it to you
38 (pause)
39  L Thanks very much.
40  C All right Peter? Thank you for your call,
C Harry now, calling from Fleet Hello Harry?
L Hello, * good morning to you both,
E [Hi Harry
L [I have a problem with condensation in my loft.
E Yep
L It's a house which is eighteen months old and a number of the houses on this estate
seem to be getting this condensation ah mainly around the apex, inside the roof.
E [um [w-
L Were they all done at the same time. Were they all insulated by one person at the
same time, or
E Yes. (. ) sorry ok they're fairly new houses aren't they
L [Oh yes eighteen months
E [Sorry
L [Well th' the: yes I think the builders did them all yes
E Yes. (. ) sorry ok they're fairly new houses aren't they
L [Oh yes eighteen months
E [Sorry
L that's right
E would have thought this is a design fault and it's worth getting back to the builders
and suggesting that they put in some ridge vents or at least some vents halfway
up the roof which are just small ones which substitute the tile they take a tile out
and put one of these small plastic hoods you may have seen them. (. ) just tiny plastic
hoods into the actual roofline itself (. ) so that the air that is entering at the eaves has
got somewhere to go because I'd suggest that's what's happening here, (. ) that it's
getting in at the eaves (. ) but of course it's got no where to go and it's just pushing a: ll
the (. ) condensation to the top of the roof 'cause it's rising 'cause it's still a bit warm
L [right
E (. ) and it's just condensing up there so it's got to escape from that point at the top
but if it's eighteen-month y' old house (. ) hh. hopefully it's covered by some NHBC
guarantee, and you should actually all be able to club together and get back to them.
L th-
E [Get em to fix it
L The the moist air would that be coming from the house
or outside?
E [It is it is coming from the house, It's coming it it gets up through things like the
loft hatch, it creeps up through around light fittings, any small hole it can find (. ) it will
creeep up I'm afraid you won't stop it altogether, there's a natural amount of (. ) moisture
in the house running around as we've already said with condensation, and some of it's
bound to creep up there. and the best thing to do is just ventilate the loft (. ) fully so
that it will escape. But have a word with your local building inspector, somebody must
have passed (. ) the building regulations for those houses and ask him (*) if he can
suggest what the problem is
C I suppose it's fortunate that it's happened only eighteen months
after the completion date
E [That's right yeah it sh- I mean there's probably quite a lot of moisture floating
about the house anyway so it's probably abnormally high in that sense and over the
years the houses will dry out and they will have less moisture going up into the loft (. )
but (. ) I think that even so: it should be able to cope- the ventilation in the loft should
be able to cope with even the highest degree of moisture.

C How long do guarantees usually last in new houses?

E [About ten years on an NHBC so they should]

C [ten years]

E be well in by that one but as I say the building inspector's passed it as

C [yeah]

E fit then you should be able to go back to the local authority as well so I think you've
got plenty of avenues to make a fuss there really

C ummm now to Stanley
C To Mike next who's ringing from Chadwell Heath? Hello Mike?
L Ah good morning all. (.)
E Hi Mike
L Pleasure ahhm I've got a problem, * ahh with my central heating as well. (.) and
the problem is though umm my: electric pump umm doesn't keep on running when the
E [humh
L program is off.
E Yes
L uhh (.) and subsequently umm it seems to push the water up< because it not putting
it around the radiator it just push the water up into the expansion chamber and
E [um
L expands. of course and runs out. ummm (.) hh I've got to now turn off the: umm
E [um
L the pump. uh by the by the switch.
E [yeah
E by the electricity supply
L [yes
E What kind of boiler have you got.
L uh The boi- It's an Ideal
E It's an Ideal. wallhung,
L Yes=
E Yeah It might be a low-content boiler I should s'suspect that it is and that's why
you've got the pump (.) overrun * on the system and that pump overrun is intended to
take the heat out of the heat exchanger to stop it- being damaged by (.) the residual heat
once the boiler goes off- so it's a very necessary thing to leave that (*) .hh pump
overrun-Sometimes it's just done for economy on a cast-iron heat exchanger .hh you
get the pump overrun just for economy to get the last bit of heat out of the boiler .hh
save it just being wasted .hh but- (.) uh- whichever it is, it's desirable to have that
pump running (.) for that set time.< how long does it run for Mike ?
L It runs constantly.
E Const(nty).
L the the the thing I can't understand is (.)
E [hmm
L umm w'we moved in here about eight months ago,
E Yes
L And it was an old central heating system we (.) virtually: slung all the old radiators
old boiler out= 
E Yes
L [and put a new system in and um there's a few bits and pieces which are still new.
But this has (.) only been occurring for the last (.) eight weeks now * some- uh
somehow I was sitting in in um in indoors and I
E [yeah
L heard this water running uh
E [um] [but It might be it might be a motorized valve of course.
you've got small motorized valves on the system. probably
L [Oh oh oh those silver (.)
E that's it yeah
L [[yeah
E well there's a there's a switch inside there, that switches the pump on and off It's a
microswitch. which is only supposed to operate when the valve is open. and you
L [yeah
E might find that that's actually sticking. so I think probably the best thing you can do
is get the heating engineer to have a look at that (. ) it's the wiring rather than the mechanical side of it that's (. ) that's the problem there. I think, but but (. ) in any case L

E you shouldn't actually have this problem with it pumping over the top so (. ) he could also have a look at the way the feed and vent pipes (. ) are arranged so that to check that they're they're arranged properly so you don't get this overpump C uhh Right to Tony now who's calling from Finsbury Park
C uhh Right to Tony now who’s calling from Finsbury Park Hello Tony?
L Oh hello. Good morning. I wonder if you could help me.
E [Hi
L um () I bought one of these television wall brackets.< I don’t know if you know the
type of thing I mean () uh
E [Yes (yeah)
L () Now the wall I want to fix it on is plasterboard. * Now the instructions that come
E [umhm
L with it () recommend that for a plasterboard wall () at least three of the screw
fixings () must penetrate the wooden superstructure of the wall * Now ()
E [umm
L I don’t know how to locate the wooden superstructure of the wall
E [well [well
E There are several methods of doing that I I totally agree with the struction sorry the
instructions which say that you’ve got to () support it on that there’s no: point for
going for a () a cabinet fixing on plasterboard with a television sitting on top of it ()
So: * you’ve got to locate those studs there are several ways of doing it One is to just
put small holes in the actual plasterboard itself. you can just make those with a very
very tiny screwdriver or something like that around where you’re going to fix the
bracket because nobody will ever see them once the bracket’s fixed over. * and
hopesful you’ll find () a stud within that that um space. it’s about fourteen inch centres
I think? or something like that, maybe sixteen inch centres for your .h for your studwork
so you should find one within that space. but if you don’t want to do that you can use
a metal detector, () a small battery metal detector which locates the fixings it locates
the nails which are actually holding the plasterboard on and once you find a row of
nails you’ll know that the wood is behind the
nails And the other thing I’ve just seen I saw it last
L [umm
E week funnily enough, as I was walking along () to come to this program along Fleet
Street looked into a a shop () a DIY shop down there, and they’ve got this new
wonderful thing from America * It’s called a stud locator and it actually works by
sending a sonic () signal out, and it () measures the difference in density so it knows
when it’s hollow and then it suddenly comes across wood () and it changes its signal
and it knows when it has found something solid.
L [Yeah but are they quite expensive=
E =Well it was twelve quid () so I don’t think that’s actually that unreasonable if you
can use it () for other things or hire it to your friends or lend it to
C [Could you use it to=
E your friends or whatever
C =find out where wires go as well
E [You should you should well that’s what you need the metal
detector for. maybe the metal detector, which is comparable price () is actually a better
() all around tool. because you will be able to use it to find pipes and all kinds of
other things afterwards. () But the sonic thing seemed like a lot of fun and if you’ve
got any any other use for it it could be quite a useful tool. but there you are that’s three
options for finding the studs
C Umm Tony thank you for your call,
1 C Ricky on the line, Hello Ricky?
2 L Good morning
3 C Good morning
4 L um Problem with the gas central heating system. * Got up this morning plenty of hot
5 water in the taps, but no hot water in the radiators.
6 E [yeah
7 E umhm
8 L Uh I've checked everything I can think of checking i.e. making sure they're all on
9 and * the gas is working and there's flame in the boiler etcetera etcetera. umm is
10 E [yes
11 L there anything that I can go round to see whether there's a switch that hasn't been
12 switched or something like that .hh to find out whether that's going to
13 E [.hh
14 L make any difference.
15 E Yes certainly I- what I've gotta ask you first is (. do you know whether you've got
16 a fully pumped system or a a system with gravity pri:mers on the cylinder. you
17 L [haha
18 E probably don't
19 L [ha yes you might as well be talking Chinese (=
20 E [Yes that's fine.
21 L =I can have * the hot water on, (. or the hot water and the radiator on, (. but I
22 E [yeah
23 L can't have the radiators on on their own.
24 E Ah fine I think you've possibly got if if you've got fairly large- now this is this is
25 very difficult to explain but if you've got fairly large pipes coming out of the boiler
26 going up to the cylinder they should be about an inch (.)
27 L yes
28 E if if they're that big and they're not the the next size down which is three-quarters
29 then you've got a gravity system, and I would sa:y that the first thing you've got to
30 check is your pump. It's very likely to be that the pump has just stopped working.
31 L Right that makes noise does that<I mean
32 E [Ye:s
33 L [would that make a noise even if it's stopped
34 already
35 E [it could work I mean it could be the electric part of it going around but not the
36 impeller that actually drives the water so it's quite possible it- Does it make more noise
37 than usual or or just
38 L [no (. no about the same noise. When when I turn the whole lot off
39 and just put the radiators on obviously I- if can- I get the noise of the pump um I
40 suppose an electric noise if you like but no more noise than usual=
41 E [yeah
42 E =You wouldn't happen to know what the name of the pump is by any chance?
43 L ehhe no
44 E No. well, if some pumps have got a screw in the middle of them. right in the the
45 centre of the the round part, You can see a screw and you can just gently undo that and
46 put a screwdriver inside and just give the the small slot inside a turn. You'll see just
47 a tiny bit of water come out but don't worry about it it won't start gushing out. * and
48 then just give that a small turn and see if that actually releases the impeller (. if it's
49 the type that hasn't got a screw you're a bit stuck (. I sometimes give em a gentle tap
50 (. with a hammer just to get them moving again, s-sometimes Well that's the
51 L [<how gentle]
E problem isn't it you tap it and I'll listen and if it's too ah too ha-hard .
C [haha
L [ha
E The thing is just just (. ) the sort of thing you do to crack a nut. you know just just
give it a couple of taps and see if that makes it work.
L Right
E But th'that's assuming you have got a gravity system, if you you haven't (. ) and it's
a fully pumped system which has got a sma:ll silver bo on the pipework, * then it'll
probably be the motorized valve. but go for that pump first of all (. ) it sh-
L [right
E You don't think there's probably anything else (. ) that I say I've checked the radiators
L ( for the moment)
E I mean it just sounds like classic pump failure to me and it's a quick and easy job
to change it over but uh it depends how good you are at doing the plumbing really
C umm Ricky? thanks for your call
C Valerie in Bromley now Hello Valerie.

L Oh hello. Good morning. umm shortly I’m to have umm (.) an old outside toilet. < knocked into the kitchen thereby giving me a larger kitchen.

E Yup

L um Now the wa:lls will be completely re-plastered and we will then have new units and what-have-you. .hhh um I want to know how soon before (.) I can have the (.) top half of the walls emulsion papered, and the lower part of the walls ti:led How soon as how long (as we) let the plaster dry. new plaster

E [Ummm (.) we:ll of course this is one of those questions how long is a piece of string It depends upon the heat that’s in the house but actually emulsion paint so long as it’s not vinyl emulsion (.) it’s it’s the kind of (.) paint that will actually let the moisture escape then it shouldn’t be very long at all and if it’s- there’s no new brickwork there so we’re only talking about (.) the actual plaster itself and you’ll see the plaster change colour. If you want to make sure of it, in a heated house I would say (. ) for- on old brickwork a ffortnight would be plenty of time. to allow that that water to dry out thoroughly I mean

L [but it would be all right for the lower part to be tiled as well would it, a fortnight the paper and the-

E [well I think

L E I think a fortnight’s good.(.) actually but what you can do you can do a very small test on it just (.) get a piece of polythene tape it over the wa:ll, just a square

L E sheet of polythene taped over the wa:ll, with adhesive tape a:ll around the edges of the polythene (.) and then just wa:tch and see if any moisture (. ) collects

L [yes

E on the- wall side of that polythene in other words that if any moisture is actually trapped inside that polythene and if it is the only place that it can be coming from, .hh is the wall. It can’t be coming from the- kitchen and condensing on the wall so that way you will know whether there’s any water actually still coming out of the wall.

L I see (. ) Fine.

C What should you do in the room should you have the windows open or

E [yes you should I mean the thing is that on a new building really speaking you shouldn’t ah you shouldn’t close the thing up for at least three months on a traditional building and just let the thing ventilate just keep a window or two open all the time

C [even if it’s wintertime

E Well that’s it but of course the problem is that people heat these these houses up and just cook them I mean they just become like sauna baths because they still got all that moisture in them and they got the heat and the moisture finds new areas to settle

C umm

E [and that’s the problem we had earlier with the lofts of course new houses and (*) th-there’s nothing you can do really except let that that heat go sorry that um

C [yes

E moisture go which of course means letting the heat go

C [yes

E (. ) which of course in the winter is very hard on everybody

C Valerie thank you for that call
C Chris next in Brentwood? Hello Chris?
L Hello there, Hello everyone,
E Hello Chris
L Uhm got a slight problem actually with my central heating, uh one of the radiators has developed a slight leak. on the bottom seal and what happens is that that radiator just doesn’t heat up at all it just stays cold.
E Yes
L =and the leak is getting progressively worse. Now what someone said to me was. that you could buy like a radweld
E Yes: ( )
L but I just wondered where you actually put it because I looked in the big tank and I can’t
E Um well
L seem to get in there at all
E Really
L yeah (pause)
E Wh’when you said you looked in the big tank is there a small header tank at all in your loft?
L Uhm I couldn’t see it actually, but then well you you should have a big tank for supplying the the ordinary water to the the bath and so on That’ll be a sort- of fifty gallon
E Yeah
L thing, and ( ) you should also have a very small tank which looks like the baby of the family, which normally sits near it, ( )
L Oh right=
E which supplies just the central heating system. ( ) and that is where you put your radweld but actually I wouldn’t recommend you do(hh)ing it hh. so it’s a bit of a waste of time as far as that goes, Whereabouts is the leak coming from Chris?
L It’s right underneath the radiator, umm it’s like a lip but (that’s)
E Yeah it is ( )
L sealed across
E Yeah
L I’m afraid it is corrosion in the radiator, and and anything that you do in the way of putting rad sealants in there You can’t leave it with confidence now I mean you could put this thing in spend ten quid and ( ) it might work for awhile but ( ) one day you’ll come back and find a puddle on the floor. so if I were you: I would look towards having a new radiator fitted, and ( ) it’s a fairly simple job to do You’ve only got to turn off the valves at both ends, the handwheel valve, ( ) and the lockshield valve, * just turn that off with a pair of pliers. Drain what is in the radiator out by using a tray or something and and catching the water in there. it won’t be an awful lot * and then just go and get a a- replacement ( ) Try and get one ( ) thes’exactly the same size to save you any trouble with the plumbing, .hh
L right
E and ( )
C Are they expensive to buy radiators?
E Oh umm w’hhh. uhuh how big’s the radiator Chris?
L Umm it's about it's it's oh only a small one. probably about (. ) f'four foot I suppose.
E Four foot say
L [about about p-roughly about that there
E [yeah you're probably talking about forty quid there.
L Oh is that all
E [actually that's
C Oh that's not too bad is it
E Go go for the discounts I mean some places are expensive but you should be able to get about fifty percent off a radiator now,
C Ummm so it's not worth messing about
E [so shop shop around
C it's not worth messing about
E Oh I don't think so at all no.
C To Mike next who's ringing from Chadwell Heath
C Hello June?
L Oh Good morning. Why does the temperature of my shower change, to freezing or scalding when water is used elsewhere in the house please.
E [um] N'yeah. It's what we were talking about earlier when I was talking about the term between the difference between an ordinary what they call manual shower and a thermostatic shower, is that a thermostatic shower will adjust the hot and cold if something's used on the cold supply it will also tone down the hot side of it, for you, automatically so that you actually get a balanced temperature throughout. Now I suspect that what you haven't got is a thermostatic shower June. Is that correct, L That's right.
E Yeah. well they are- I mean is it? what type of shower is it for a start
L It's just over the bath. It's not a separate shower unit. It's um just a mixer tap on the bath
E [it's o- [no I know] [yeah] L with a showerhead
E What I was also saying earlier is that now they have produced several showers for use on the bath like this which are thermostatic. Obviously they're a bit more expensive than the one that you've got but they are easily replaceable. I mean the thing is that you can take that existing shower off and just put the other on without any trouble at all and it will work just as well. th- at one time they used to be bad on filling the bath. the fact that they were thermostatic made the bath flow slow But the one called the Aqualiza is actually quite fast at filling the bath now so you wouldn't suffer from anything there. The other way you can get around it is to take a cold supply directly from the tank and feed it to the shower on the bath and nothing else. then of course you still don't overcome the problem of getting freezing cold when somebody uses the hot tap but at least you won't get scalded. (pause)
L I see thank you
C [[which is safer anyway you just get pneumonia hhha June thank you for that call
C Now we’ll go to Paul now who’s uh ringing from Southgate. Hello Paul?

L Oh morning

E Good morning Roger, low level system, * fills up (.) doesn’t seem to have any problem, (.) but only flushes about a third of the water.

E Ye:s ()

L What’s the cure.

E Is it a fairly new one?

L Yes fairly up to date,

E [yeah It’s this curse we call the dual flush system which-

L (oh yes)

C [ Oh we’ve had this before haven’t we ye:s

E [Yes [somebody worked out in their wisdom somebody who was talking about- trying to save water and all these these experts sat around their desk and they came up with this wonderful idea that if you wanted to save water everybody flushing their loos was wa:sting all this water so what they’d do is they’d put this special mechanism in there; and if you just quickly- put the handle down and up again it only flushes (.) four gallons out of out of the * sorry ah um four litres sorry four litres out of the system and leaves the rest in there and of course you’re suppose to have a little label on the front of the system which they give you which tells you all about these great long instructions telling you how to flush the loo: which nobody ever reads

L [hh

E (.) so of course you just get this small flush. then they found that what was happening was that everybody was going along and flushing this loo, it wasn’t flushing properly so they came back and did it again the result was that they used twice as much water. so they’ve now abandoned it. but- unfortunately a lot of people

C [hhh.e

E are stuck with it<Well they haven’t quite abandoned it yet because they’re coming up with a new idea but I won’t go into that (here). But what has happened is that you’ve got this (.) dual flush system. Now I shouldn’t really tell you this because it’s the law that you’re supposed to use (.) the dual flush. (.) system,

L [I won’t tell anybody

E But uh strictly between you and I: there’s a tiny little bung inside the syphon itself, If you look down there you’ll see a small plug (.) which actually goes into the side of the syphon. Now that can be changed for countries that don’t insist upon the dual flush system, (.) hh you can change that bung over (.) to a solid bung which doesn’t let any air in and then you get the full flush of nine litres * and it’s something a lot of people doing but obviously I can’t tell you to do it.

C Of course not

L [[ (ok)

L I’ll take a look at it. Thank you very much indeed

C [khahaha

E Good luck.

C I would like to disassociate myself haha from this ( ) Paul, thanks for that
C Harry’s on the line now in Forest Gate. Hello Harry?

L Oh hello. Good morning.

C Good morning.

E [Good morning

C or afternoon as it ( ) ha ha

L [sure

L I beg your pardon. hh good afternoon. hh Yes- I I have a a emmm a query on a Ferguson stereo seven music centre, which I bought in ’76 * ummm ( ). Now when I on the on the cassette deck when I recooked. or rather when I play back a recording.

I get the right hand channel coming out louder hh ah and distorted than uhhhhhh than the the volume I’ve got the the radio turned up to.:

E Does this happen

L [=and I get nothing on the left hand channel at all

E Right does this happen on cassettes that em you have recorded yourself, or prerecorded cassettes.

L No, on c-cassettes I’ve recorded myself, and on pre- on cassettes that I’ve already recorded say sometime ago;

E Um=

L =they play back quite well.

E Right so the problem lies in the record chain and I’m afraid it needs a competent engineer to sort it out. hh

L I see now I am clued up uh sufficiently I’ve had the cassette deck out eh two or three times. I’ve taken out all the various plugs hh and eh () when I’d done that emm I’ve even changed one resistor which () I thought was rather loose.

E umhm

L [you see:

E [yeah

L And I put that back and then for awhile it it behaved correctly and I thought oh right I’m all right (*) Now after a little while has gone by: it’s come back again

E Right (*) well it’s quite possible that you’ve isolated where the fault lies but my guess is that you need a full scale workshop in order to check exactly where that problem is occurring. after this length of time you might have () em head wear. but the head wear would show up on playback as well () .hhh

L [uhhuh

E umm s’so that if you’re only getting it on record, then it’s probably somewhere in the record amplifier (*) which is built into the cassette deck

L umhm

E emm but I’m afraid that it’s unlikely that you’ll be able- to do very much () on your own It’ll have to go to a good service department.

C Harry thank you for your call,
C Richard is next on the line in Mill Hill Hello Richard,

L Hello Therese. (.) Hello Michael.

C [yes

E Hi

L Umm, I've got a an Bangonolouson system It's uh nearly twenty years old and-
(. ) just as good as ever (. ) um except that I've got- now I got a loud humming

E [right

L (. ) when we use the turntable. (. ) umm We moved the

E [umhm

L furniture around a little while ago (. ) and (. )

E [umhm

L it involved (. ) putting the (. ) uh tuner amplifier down the side of the television from

the (. ) .hh turntable

E Right

L and now when we use that (. ) um it's a loud hum and- more when- the turntable's

actually going round.

E Right now what happens if you experiment and just remove the turntable and the

amplifier just for f'f'ten minutes from its present position. in other words get it away

from the television Does the hum by and large go. (pause)

L um I haven't tried doing that.

E Right well you could be picking up hum literally from the television. (. )

L yes

E [Televisions do put out some strange radio signals which can affect umm obviously

the way in which the: magnetic (. ) phono input (. ) works that is to sa:y that's a very

sensitive input and it will pick up any semblance of hum that is floating around .hh So

L [yes

E the first thing I'd do is to actually put it back where it was or literally put it on the

floor away from the television and see if that eliminates the hum. If it doesn't (. ) then

you've got a problem (. ) .hh a:nd with the B and O: it isn't

L [Yes

E (. ) going to be one of the normal problems like (. ) the earth lead has fallen off,

because the B and O uses a five-pinned-in system. Is your turntable a one-thousand?

* Do you remember

L Sorry is it?

E Is it a B and O one-thousand a Biogram one-thousand,

L uhh I think it is yes

E Right and are you using a one-thousand tuner amplifier the long low flat one

L Yes

E Right. umm well (. ) the possibility of losing an earth in there is pretty remote in

which case I'm afrai:d (. ) that if- that if it isn't a question of proximity to a hum-

inducing machine like a television, .hh umm or a florescent light for example you can

also get hum induced from from those sometimes you can get hum fro::m

L [yes

E umm these fader switches, light switches dimmer switches. They can introduce hum

C [oh yes

E the ( ) in those can. um If it is none of those things 'i' 'e' not a proximity problem

then I'm afraid you've got to take it in: to your local B and O dealer, (. ) and have them

look at it.

C Richard thank you for your call,
C Hello Lance?
L Oh hello, Good afternoon.
E Good afternoon Lance
C [[Yes
L Now my problem is that of * low: signal strength on my tuner amplifier.=
E =Right
L when I set this tuner amp in my: hifi system about eight years ago * I've used
to get a very good signal, I've got a good (.) aerial mounted on the roof, * I've no
problems very good uh on the FM, all five LEDs would light up straight away,
E Right
L [but now in fact more than- more than a year mow, (.) uhh it's very poor signal
sometimes three or even (.) two LEDs light up.
E Can you hear the degradation that you can see on the signal strength indicator.
L Yes most certainly I can in fact (.) at times I have to press the (.) stereo mute button
E Right=
L to get any sound at all because uh otherwise I I just wouldn't get uh * =
E [Yes uh
L =any sound at all
E Right your instruction book probably said and it's a tip that's worth passing on. that
if you live in an area where you can't get a high signal strength umm you need so
much more signal to open the stereo gate so to speak that it's advisable sometimes to
switch to mono (.) umm which will remove a lot of the background hiss and and noise
which you are experiencing. Now you put your aerial in eight years ago when you
bought the tuner amplifier.
L That's correct
E Have you put new cable in since then
L Uhhh (.) nmo I haven't
E Well that's the first thing I'd look at. .hh o- over a period of time that cable
L [I see
E does deteriorate a'and umm the first thing that a professional rigger would
L [ohh
E do if you called them in (.) would be to replace that cable and to check all the joints
Rain water can get in to that cable quite easily. (.) and that's the most likely cause of
the problem if when you've got (.) a good cable in you are still suffering from that
problem then I'm afraid one would have to look (.) at the front end of the tuner the
very front end of the tuner (.) uh to make sure that a component hasn't gone down
th'u'h one of the components that actually amplifies the signal (pause)
L I: see: th-
E [the first thing I would do is (.) literally look at that cable. It's doubtful that
the aerial itself is corroded but (.) uh look at the cable and replace it (pause)
C right Lance Thank you for your call
C We'll move on to Rainom now, n'Steve is on the line Hello Steve?

L Oh Good afternoon to both of you,

E Hello

L Pleasure<Uhuh (?) I just want some advice really on amplification (?) Uhh (?) the (*)

system I've got at the moment is in the Swandeck the Itzoc and uhh (?) a k-nine

E umhm

L with Namon amp (?) the original one (?)

E right

L [ ( ) one into uh Nicon speakers

E Right that sounds like a classic system.

L It's ah- yeah it's not too bad, what I'm interested in next I think is the is upgrading

E [umhm

L the amplifier,

E umhm

L [Uhuhh and looking towards a Namon again

E Yes

L [And perhaps the sixty two or: thirty-two five one-forty

E Right.

L Now the only thing is I mean I've I've heard the system I've heard it all before and

it uuhuh- seems okay

E umhm

L [But I'm a little bit worried (?) about the future * because it loo:ks to me that

CD's are obviously going to be * quite important in the next five or ten years

or five years

E [abso-

E Absolutely,

L And uh also ah hifi video, that's the the television (?) uh stations (?)

putting out (?) th-

E [You're you're absolutely right. You- you've got all your information right,

You’ve hit the hit the nail right on the head (?) um It’s a problem that faces a lot of

people and you need an amplifier that’s got to have enough inputs to tackle both the

CD and hifi video and possibly DAT,

L Right yes

E and uh presumably that’s th- the nature of your question is which amplifier to go

L [wh-

E for.

L That’s right. See the Namon the Namon interests me but I’m not sure uh uh how it

would work with a CD. obviously I want t’two good good front ends. which would be

CD end and uh and analog

E [right [.hhh well if you bought a Namon then (?) you’ve bought it from a good

dealer. because Namon are extremely fussy It’s interesting how the best British

manufacturers are extre:mely fussy about the quality of: um (.) advice and back-up that

their dealers give. uh and I I imagine that if you bought a Name that you’ve got it

from a good dealer whose given you good advice And by

L [()]

E rights what I should simply do is refer you back to your dealer=

L [()]

E =However (?) um as we’re Namon ah dealers as well I I am sufficiently familiar with

their models to say that the thirty-two: thirty-two point five pre-amplifier is obviously

going to be the best bet for you because it’s got the extra input for auxiliary for CD

( .) .hh and you can put either one of two sorts of cards in there depending upon umm
E: hhh well your personal choice really
L: [I didn’t know that I I just thought you’d (guide it) on the phono input.
E: No on the on the thirty two now, instead of phono two they’ve got what they call an auxiliary input (.) and you can change the cards on that in the same way as you can
L: [Right,]
E: change the phono cards, so they do a three-two-six which is a passive board and a three-two-eight which is an active board with variable attenuation,=
L: [Oh I see
E: =(breath in and out))
C: I didn’t understand any of that
E: Sorry about that Therese um but I think um I think that
L: [( )
E: Lance uh uh that Steve does sorry yes I think that
C: [Steve yes
E: Steve does Is is that right Steve you followed that,
L: [Yes so so you would say the Name would be okay
E: even if- would * the speakers be okay with the the CD I mean I’ve never heard it through * I’ve never heard a CD through the amplification and the speakers ’cause=
C: Well I have and we’ve actually got a lot of customers using that combination and I can tell you that it does sound pretty good.
C: All right Steve Thank you for your call,
APPENDIX 4. Transcriptions of the Large Sample of Fix-it Phone-in Interactions (FX2).

FX2g1

1 C And our first caller this morning for Matthew, is Eileen (.) ringing in from Barnet.
2 Hello Eileen,
3 L Hello * Good morning,
4 C good morning
5 E ((good morning.
6 L Help please,
7 E right
8 C ((hmm.
9 L My hydrangeas don't hydrange-a, if you see what I mean.
10 E ((laugh))
11 L * I've got nice bushes but no flowers.
12 E @right. uh h-how long have you had them
13 L Some I've had (.) three:: years one I've had two: and
14 E [right
15 L funnily enough the one I've had o:ne has got a tiny wee bit of flower about the size
16 of an old (sixpence)
17 E wh-where have you planted them (pause)
18 L They're in the sha:de
19 E Right (.) and you've got decent soil, (.) for for them
20 L [It's it's heavy cla:y
21 E [heavy clay =
22 L =and slightly ac:id
23 E right. well in in fact that that should prove to be no major problem what the plant
24 might appreciate a little bit more (.) in fact if you f'feel like helping it out is a little
25 bit a bit of compost (.) uh around the soil. It's often helpful we- if you've got very
26 heavy clay which (.) uh there's (.) a fair amount of it around London, hh. uh it's a good
27 idea, (.) just to (.) when you plant, put some compost around the roots just just to help
28 the plants along
29 L We've done all that,
30 E th-the so I think the problem with this one, so long as it's getting uh plenty of wa:ter
31 (.) uh what what you can really do to help it. (.) is actually to water it up something
32 like a tomato fertilizer
33 L We've done that
34 E You've done that too:. and it's ( at all)
35 C [We're running out of options here
36 E We're running out of options here uh uh do you prune it at all
37 L I haven't touched it because they're not (enormous)
38 E Right (.) I- the best thing that you if they're about say three or four years old (.) the
39 best thing that you can do then, (.) having tried all the other options, is to- is to try this
40 one. * .hmm what you can do, (.) in the wintertime when they're dormant, (.) lift them
41 * change the soil around the plant give them some decent compost (.) decent drainage.
42 (.) re-replant them and then next next year when they start in to growth * uh make sure
43 that they get fed fairly regularly with uh a tomato fertilizer and it should encourage
44 them into growth because after this period of time they should definitely be be flowering
45 by now.
46 L I got conifers on each end of the bed. (.) big ones (.)
47 E [right no-
48 L and I wondered if the roots of the conifers were interfering in the hydran:geas
49 E No it'll mean there's a certain if they're very large and very close it'll mean there's
50 there's a certain amount of competition (.) for the available nutrients but it shouldn't be
sufficient in fact to stop a plant flowering, if we look at why plants flower if you’re feeding the plant really well and it’s got plenty of nitrogen for growth and it’s well fed and fat as it were uh it will sit there quite happily, just producing leafy growth. it’s very much like like us if we’ve had a large meal we’ll just sit down and take it easy and won’t feel like moving but if we’re hungry and if we’re under stress then we’ll want to do something about it and this is one thing that uh provokes plants into flowering because flowering is a reaction to- if a plant is under stress it’s perhaps uh being threatened in some way and it feels threatened in some way then to make sure uh it continues it will flower.

so it’s- flowering is really just a reaction from a plant, to help it preserve itself within the area.

Yes it’s funny isn’t it because most people would think a plant would flower when it’s happy and content so to speak.

I suppose it’s like a lot of things in life in fact I mean if everything’s going well for us, we take it easy we don’t have to do anything but if we have problems if there’s a little bit of stress then we will have to get up and do something and this is the same thing with the plant. it has to react it has to do something and often what it will do is flower. very much just briefly the same with pruning you’ve cut a branch off you’ve cut a um some stems back so what does it do, it thinks right I can’t sit here. I’m being threatened something is is threatening and so I will fight back, and I shall grow: my new stems and these are the basic ideas of why we prune.

The psychology of plants.

right to out next caller.
C Right to our next caller It’s Grace of Ilford Hello Grace,
L Oh good morning to you both,
C Good morning
E Good morning
L umm I have two beautiful coni-conifer trees in my front near the uh bay window:, and they’re spreading, I had them lopped about two years ago:, but I need to trim them: you know to make a bit um narrower, is it all right thing to do it now or when or when is the right time to do them.
E Well you’ve done the right thing to stop it growing taller by taking the- top out. uh conifers you can trim (.,) sort of fairly carefully * um the best in the springtime before they start into new growth. (.,) th- this raises a question in it’s own right in fact because often we plant trees and uh (.,) it’s difficult to imagine exactly what they’re going to be like when they’re fully grown: and with conifers in fact it’s best if they can be left alone (.,) you know that that we grow a lot of them for their dense thick foliage and for their n-nice formal shape: (.,) and so if we- are compelled to actually (take the secateurs) to them =
L [is it is all right-
E =It’s very difficult to make to make sure to to do it now (.)
L [could we do them now (.)
E [Beg your pardon sorry I didn’t catch that
L Could we do them y’know could we trim them now
E So you’re best you’re best to do it in the spring time * just before they’re starting
to growth. (.,) and just do and just do that quite carefully
L [oh I see:
E So you’ve missed the boat a bit there Grace
L Sorry?
C You’ll have to wait till next spring for those.
L Oh dear that’s a long time to wait oh well anyway thank you very much for your help,
E That’s okay
C [all right Grace thank you for ringing in We will move on to Tom
C Hello Margaret,
L Hello,
C Yes hello to you.
L yes yes umm I’ve got pruning questions as well actually umm just a couple of quick
ones, (.) I’ve got a weeping tangelos flowering cherry (.) and this year it’s sprouted
a a (.) branch which is growing absolutely vertically (.) straight up to the * sky
E [.hh
L and it looks (.) unsightly should I prune that right back (.) get rid of it because it
seems as though it shouldn’t be there.
E hhh.it’s quite interesting because there they’re sold to you as uh as weeping often-
you do get this, and you get these branches because uh just shooting straight from the
top (.) uh uh often you will fi:nd it de:pends
L [yes
E on how mature the wood is but if it’s still fairly soft it will start to grow down um
uh uh as the wood gets older (.) it will start to fall. (.) but if it’s absolutely vertical
and vigorous (.) then the best thing uh you can do (.) in fact is to remove it and
L [yes
E uh don’t don’t (.) remove it n-now you’ll have to wait until next year until (.) until
it gets into uh gets into leaf because it’s better to prune the the cherries when they are
actually in leaf (.) so
L [Uhhs o when is that is that about May or something
E Yeah May, June. * and and even better if you can leave
L [yeah
E it into the summer.
L Oh I see. but it’s too late now is it,
E Yes (.) So I’m afraid you’ll have to put up with that
L [so-
E hh. I’m afraid
L So should I watch next year and say if if sort of um (.) starts to droop and if not
then just cut
E [yes
L it right out all together.
E Yes
L okay, and the the other question is about plum tree, again pruning, umm I’ve
heard that you shouldn’t (.) prune plum trees but (.) I’ve got one it’s about uh eight
years old I should think and this year, (.) it’s quite a large tree it’s got lots and lots of
extra (.) branches that are growing out of the main branches at sort of between 45 and
90 degrees and all getting intertwined (.) in: the tree, and it it just looks a mess:. Can
I prune (.) the plum at all (.) Can I get rid of these umm extra branches.
E uh (.) Plums tend to grow rather scraggily it’s it’s their natural wa:y so the best thing
that you can do is to sh-shorten those side branches say to about eighteen inches or so
(.) if there’s any that’s growing (.) actually into the tree or crossing so
L [yeah
E they’re rubbing another branch then then they can be removed. (.) they’re
L [yeah
E quite difficult to keep tidy.
L I I mean is it okay to p-prune the tree.
E Ye:s th-this time of year (.) it’s fine.
L Now do I have to pai:nt them over, (.) at all with that (.) I’I’ve forgotten the name
of the stuff now
E No is it Ar-Arbrecks or something like that which you can buy at the garden centre.
L There’s been a great deal of debate about Arbrecks and other paints which you can use
to to cover wounds, (.) and researchers have found in fact that painting the wounds
doesn’t actually (.) really help at all: (.) because by the time you’ve made the cut (.)
uh the plant has been opened up to the air with all the fungal spores that are in there.
(.) and they will have rested on there anyway th- It has been said that the old type of
paint which they used to use uh which was actually mercury base paint was was quite
effective but obviously we’re not allowed to use that now (.) so the the real (.) the
important reason for using (.) uh something like Arbreck’s is just to uh dull the colour
a bit it’s cosmetic it’s=
C [it’s just cosmetic-
E =cosmetic just to make it less obvious (.) and somebody said to me once in fact that
they thought that it would be just as straightforward to just get some mud and rub the
mud over it if you wanted to dull the colour
C Yes
E So um so this is what y’know this is what has been found. * though perhaps for the
cosmetic reasons it’s worth it in it itself: (.) Plums and a lot a lot of the cherries (.) um
cherries in particular in fact are resinous * and they’re like pine trees and they’ll
C [ ( ) ooze this stuff
E ooze this this natural uh layer which will actually (. ) seal over (. ) and and uh
prevent them from um=
C [like forming a scab ( )
E =(. ) getting infections
E It’s like forming a scab th’the cherries and a lot of the pine trees of course uh (. ) are
C [yeah
E well known for that. (. ) so that um so if you just really tidy up the plum this plum
tree you should be okay.
C Margaret thanks very much for your call more questions for Matthew in just a
moment.
And we’ll go to Kate next, in West Wickham. Hello Kate

Hello

Hello there

Yes Hello: (pause)

What’s your problem Kate

[Oh I have a grapevine a small one in the garden it was brought for me as a gift, it’s been in the garden three years, it doesn’t grow very much but it looks very healthy. Now we have a kind of conservatory on the dining room, can I move it w- into a big pot into the sun lounge to increase growth produce fruit I hope but but I’ve got no inlet for the root:

Right if you it’s growing fairly well outside in fact yeah it’s in the garden it looks very healthy.

Excellent so it might be an idea then to to leave it there. save yourself a problem.

yes that’s what the handyman said haha he said I don’t think I would move it

[yeah and leave it

hehehe uh keeping grapevines in order the best way is to actually uh build yourself a framework and what you will normally do is after the first year is you cut it down to about nine inches and then you’ll get about four or five buds sprouting from that single point which you can then tie in, uh along wires so this is what you’ll you’ll need to do in fact. if you can cut it down in the winter tie the four or uh five stems that grow from it a along wire so they’re kept well apart and and tidy and easy to manage. hh then the next year, uh you can cut those back * to a couple of buds and then that year you’ll get two more from there so you’re starting just to build up a framework,

it’s a slow process then,

It is yes uh and in the following years, what you do is

[umm

when they’re fruited um y-y-you will have the buds or the rods which have fruited and then the new ones which you will tie in. Now this probably having sat here and explained it to you is quite difficult to imagine so what I will advise you to do is um to go to there’s a very uh well there’s two books which I can recommend. one uh is the the RHS guide uh to fruit gardening, which is very good and that’s all explained in pictures uh and the other one uh is the Reader’s Digest uh book called Your Gardening Questions Answered, and also in in here in diagrammatic form you can actually see and it’ll it’ll be much easier if you look at the pictures uh to be able to demonstrate what is done it’s not I will assure you as complicated as it sounds, having just explained it.

Vines go on a long time I’ve seen one at Hampton Court that’s really old and gnarled

Yes if anybody really wants to see an excellent vine this one at Hampton Court is absolutely superb and it

[it’s huge in a massive great glass house.

that’s that’s right and there’s so much work involved with keeping keeping this uh this vine in fact they employ somebody full time to maintain it because there’s a lot of pruning to be done, there’s a lot of feeding to be done, and one of the very fiddly jobs uh which has to be done is actually thinning out the bunches of grapes uh as they grow:

What taking individual grapes off each bunch.

Yes so so instead of getting a bunch with lots of little grapes all pressing against
E each other (.) uh you have uh grape thinning scissors uh which you have to go
through the bunches and snip snip uh * the grapes out (.)
C    [yes
E so eventually once they’re thinned you will get (..) a a l’larger uh grape in a larger
bunch
C That’s a real labour of love that isn’t it
E It t-is yes
C    [on to our next caller then
It’s Cathy on the line. Hello Cathy,
Hello, good morning,
@good morning
It’s about a prickly pear (.) uh cactus (.) it’s gone
@yes
out of control:: * wehh It was outdoors all summer. (.)
@right
and it’s become top heavy. (.) Now during the winter I had it on a windowsill. (.)
so I put it outdoors and I did water it.
Right. * that’s that’s fine. let me say that this- the the very interesting these
(apuntius) because in fact they’ve been introduced into many countries and particularly
uh in Australia (.) they’ve actually become a weed pest
yes
and uh (.) what they have found is the cochineal beetle (.) that are used f-for uh uh
colouring in foods uh actually eats the fruit of it so they introduced cochineal beetles
food colouring
to act as natural predator so they created a cochineal beetle industry. uh from uh
oh
getting rid of the (apuntiers) and they um so: they can thrive anywhere they are so
robust these plants (.) and the the the only- well the thing that you can do: (.) uh with
these * uh to to keep them in check and they they will uh take to pruning, you can uh
sort of cut one or two pads off. but the best thing to do is (.) to keep them young and
vigorous because they are- they take quite happily. (.) is to take (.) uh to cut cleanly
off one of the large- large pads then (.) uh leave it to dry, so you actually leave the cut
area to dry, and it will form a (.) a hard layer (.) so that will perhaps take (.) two or
three weeks and then just uh stick it in the compost. or or into sand and it will root.
( .) and this is- this is another example in fact ((cough)) excuse me of uh how amazing
these uh succulent plants are. because if in the desert say the wind blows or if the plant
gets damaged (.) and and a leaf falls off (.) then (.) uh the roots will start from new
leaf and it will it will propagate again: so they have-
@um self-preservation
so they have umpteen ways of preserving themselves in their own little environments.
I had an argument with a prickly pear once in Corsica (.) I lost
hh.hhhoh
I was g-
It was really painful I was picking out the (.) they’re almost hairs rather than
not surprising
needles picking them out for days: afterwards
they’re they’re very very painful and in fact often and
@yes
with most people they go septic as well so you have the
@well
added problem and very difficult to get out because like you say they’re like hairs
and they are very very fine.
@um they’re a tweezer job * handle with care ooh
@definitely
yes
twenty nine minutes past ten...
Now on to Maureen who’s calling in from Wanstead. Hello Maureen,

Hello there. Um I’ve got a very large philadelphus which uh I think I want to get rid of because uh it’s not flowering. I uh moved it about three or four years ago and it flowered very briefly uh and since then I haven’t had a single flower and all I’ve got is this massive foliage which doesn’t really look very attractive. Um there is any way that I can get rid of it without breaking my husband’s back in the process.

The best thing you can do is cut it down just take a pair of loppers cut a saw (just cut through) to reduce the height. You cut everything into small pieces then or if your husband cuts everything into small pieces then he won’t uh do himself any damage. There’s often a temptation in fact when you’re pruning or doing anything in the garden to leap in and and it’s like people pushing large wheelbarrow loads, or cutting things down. It’s always easier uh much more common sense to cut things into smaller pieces take you a little bit uh a little bit longer but uh in fact there’s less chance of doing yourself any physical injury and when it comes to gardening particularly if you do it for a living once you damaged your back then you really have problems.

Isn’t the root system sort of very widespread and very deep on these things right just coming on to that there’s two ways you can do it either cut down and dig out and again that can be done in sections or you can uh cut it down and spray it with uh systemic weed killer so that will get down and kill the roots uh and then it will finally rot and then it will lift if you’re in a position in fact to kill it and then just to leave it just for it to rot and all the fibrous roots that hold it together and all the main roots will actually rot then

You’re talking about twelve months here if you do it that way umm. Again you’re talking about a longer length of time but the fact that it’s rotted will mean it will be easier to lift but um philadelphus don’t produce a lot of of deep roots they they tend to produce quite a lot of fibrous surface

What do you think I should have done to make it flower. I’ve got another one that flowers quite well but this one never flowers at all.

Right um what you do with these in fact is is normally you will cut the the stems out down to where they uh the flowering stems out so once it’s flowered along a stem you go down to where it’s flowered and then cut and then that will produce flowering growth the next year plus the growth that’s always always coming out from the base too. It’s good with the philadelphus all the time and it’s one plant that has to be caught young uh to keep thinning out the centre because as you found they tend to grow very very thick uhh very dense in the centre

It’s like roses I suppose isn’t it

Yeah they they do=

(Could I just ask you) another little quickie

Certainly

About a yucca. Well about quite a lot of yuccas which we’ve planted in the garden we’ve got several. They’re quite sort of tall and quite nice to look at in a way because (you know) but they tend to flower in uh January when we got some nice mild weather and then we get a nasty bout of frost and they just wither and die: and I have never had one yet to flower in the summertime which is very annoying because we’ve got so many of them and they would look lovely
E: Yes most certainly. (.) That's quite interesting umm obviously pro-provoked into
growth at that period of time this is- this is not every winter is it it is, just-
L: Well we've got- (. ) yes it does we've got quite a lot in the front garden that haven't
done anything umm that's a south facing garden. in the back, we've got them umm (. )
you know they're sort of in a fairly sunny position and one or two of those have
flowered but always um in in January or very early in the year (. ) and they always get
(y'know decimated) by the the weather
E: Yes mo-most certainly the most normal thing for them is to flower in the
summer time. (. ) It seems rather strange to me * they're getting plenty of of light and
L: [yes [yes
E: there's decent rain it just seems odd to be very honest with you I can't think off the
top of my head at the moment what would prompt them to uh prompt them to flower
in January of all times because they've (. ) obviously been through (. ) the cold dark
period of the autumn so I'll be very honest with you and say off the top of my head
at the present time I I can't think if you'd like to leave your phone number when I've
actually got a few moments to think about it and (. ) think round round it I'll give you
a call back again.
C: How's that for service Maureen thank you for ringing in,
And we’ll go to Sandra now in Beckingham. Hello Sandra,

Hello good morning
good morning
good morning

L umm last Saturday I was given a (stephenatos) and um the day after one of the leaves
(leaves turned yellow and fell off and since then they’ve been turning yellow very
[khuh.

fast and the flowers also:

doesn’t like you does it Sandra

wonder why you were given it hhh.
yeah

now now let’s think (.) tell tell me a little bit about- are you watering it,

um I: (.) gave it a very small amount of water on the day I got it, um which the
water (had been) boiled because I understand it has to be soft. (.) it’d been boiled and

[right
cool umm and it it was quite a dry: but you know it

[yes

was only a small amount

Plants- plants do in fact from shock when they’re moved from one particular
environment in fact even if you (.) if the plant’s lived most of it’s life on the
windowsill and it’ll get used to this idea, and then moving it (.) changes of light (.)
if the watering regime changes then the plant will react. in fact. so if the plant’s
particularly dry then make sure it gets a reasonable amount of moisture um to get it
going

I also misted it

Th-that’s fine you say it’s got flowers on

yes it’s covered in them white flowers and they’re turning yellow.

That’s that’s fine in which case it- it shouldn’t be. They go through a dormant phase
a little bit later on in the year (.) in which case this this sounds like (.) just lack of
water uh by chance have you looked at the leaves or under the leaves to see if there
are any (.) pests or diseases,

There’s no livestock on it no

There’s no livestock on it at all. in which case it possibly sounds as though (.) uh
it- it could well be a watering problem, (.) at this time, so check the water, (.) keep it
fairly warm they are tropical plants they like it warm and it sounds possibly as though
it’s suffering a little bit from shock I don’t know all the details of the move but it
sounds as though a little bit as if it’s suffering from shock * uh it seems rather strange
that within (.) uh twenty four hours that it (.)

[yeah must have been ill before mustn’t it

It could well have been suffering from something. They do go through a period when
they do uh die back but that’s (.) in a year like this it will probably be a little bit later
on sort of middle of next month or so

umm okay. Well Sandra, thank you very much for your call,
C And it's Rennie in Camberwell: * Good morning.
L Good morning (.). Therese. Can I speak with Matthew please,
E Good morning
L Good morning umm can you help me? I planted a peach stone (.). in a four inch pot
( .) It took and when it got to three foot high; I re-potted it into a six-inch pot. (.). now:
( .) it seems to be (throwing out some side shoots) (.). um I just want to know is it ready
to go in the ground now, or should I put it into a larger pot.
E um if it's throwing out side shoots that's fine (.). so it's obviously it's growing quite
happily. No don't don't put it outside in fact it's going to be something that will uh
will need a reasonable amount of protection anyway. (.). you're you're better growing
them in (.). conservatory (.). if- if you have that (.). um because there's quite a few fruits
that we grow in this country but not commercially we grow them for a matter of interest
L (that's the idea
E and and this is one of them (.). peaches- peaches and apricots and if you can give
them that little protection. because (.). like many plants they don't really like um
the winters. in this country and the- they don't really like the frost * and
L yea [so kee-
E the damp
L [best kept in the pot then=.
E =so the best thing that you can do, is actually keep it (.). in the pot, uh and grow it
L [yes
E there in fact and, * just leave it to grow a little larger, uh and then you
L [yes
E you can re-pot it. repot it, umm over the winter over the wintertime so just towards
the end of winter just when it starts to get uh into spring. (.). uh and then to keep it
L [yeah
E prune it really very muchand try to get it into a sm-small tree: (.). uh
L [yes
E right. with with these side shoots. What you can do again to get a dense tree is is
actually uh (.). next next year when when the wood is ripened that little bit, you can cut
the side shoots back again. (.). and they will again produce shoots of their own: so
it's like building up this framework (.). all the time and it'll want to live in uh (.). sunny
conditions it likes uh long hot summers (.). long dry summers and again this is where
the protection comes in,
C They would have done well this year
L I think that's why I've got it. because for years (.). years I've tried and never been
successful.
E right. (.). You will find that with a stone growing anything from seed that the fruit is
likely to be variable it won't be the same as its parents. (.). uh for
L [oh I see yes,
E example if you sow seeds in the garden (.). uh all from the same packet you might
get variations in height because they've they've all got different- different parents.
basically so they will all look different. so it will vary as to what the fruit will look
like.
L I see thank you very much. it's got to be protected through this winter.
E [eh-
E It's definitely got to stay inside. (.). uh not too- too hot, not centrally heated but
really (.). just above freezing level. Because you don't want to encourage it to grow: it
53 needs a- it’s got to have a dormant period it will have to have a (.) dormant period
54 C    [it needs a rest
55 E but it it just wants to make sure that it doesn’t get damaged by the cold
56 C Right to out next caller then.
C In Streatham. It’s Susan on the line, Hello Susan,
L Good morning, I have a um superb rubber plant which is now crawling along the
ceiling even after three: loppings down. but the- two or three of the lower leaves
have what look like to me creepy crawlies. eating the leaves can you tell me what I
could spray it with, or do something about,
E [uh,
L right uh could you tell me what they look like Are they white, or or brown
E Well no you can’t, actually see the animals. but it seems like eating the flesh you
know. it seems to be inside the leave.
E inside the leave well the best the best-
L [umm.
E there’s nothing actually to see apart from the
L [ahh
E sort of browny, spots on the leaves really and then they eventually drop off.
L right th- these brown patches are they round the edge, or in the centre-
E [yes mostly round the edge
L ( spread) from one leave to another. the same sort of thing. but now uh two thirds
of it is magnificent.
E right it could just be this position where the the leaves at the base are starting to
be shed as it grows along because
L [getting more elderly
E That’s right, naturally as they grow up towards the light, the base will be
shaded anyway so there’s no point in having leaves down at the bottom. it wants all it’s growth near the light so it can actually
L [yeah
E use that light uh and make it function so this is why they tend they tend to drop
off anyway so if you’re really sure that you have a pest problems then a systemic
insecticide from the garden centre will help you, uh if it’s either overwatering uh it
will start to go round the edges, or under watering likewise, but also they will
naturally shed the leaves anyway
C umm okay Susan, thanks for your call,
C Valerie now in Ilford, Hello Valerie,
L Hello um a little over four weeks I've had the top of a pineapple, (.) sitting in a jam jar covered with some water. Now I've got the uh the roots have started to come down (.) what do I do now
C Is a pineapple a succulent that we were talking about earlier
E yeah pineapples actually come into the family they're in the bromelin family which is another very big group of tropical plants and if you look at the bromeliades they're not succulents in the way that we think of of the succulents that we grow with fleshy leaves (.) there is um there quite thick leaves most of them have a very waxy coating and if you (.) here's a little bit of a plug if you want to see some really interesting bromeliades antilanzias the air plants that we grow @they're in the same group of plants (.) There's a really good collection uh in the Princess of Wales conservatory in the botanical gardens in Kew: (.) uh it was amazing this year I spent quite a lot of time walking around looking at them and colours that we think are uh unnatural appear particularly in this group so you got flowers that are blue: uh bright bright pinks purples they really are spectacular (.) anyway (.) I digress back back to your pineapple there's pineapples growing there too and what you can do with yours in fact now you've initiated the roots is to very carefully (.) put it into a potting compost, uh
L Do I cut the bottom of it off first because that's gone brown obviously, (.) but they're very tightly on they're not falling off
E no that's all right I should be very careful when you pot them try not to break break any some of these young young roots are really quite delicate so careful as you can just plant it (.) lay it pretty well on the surface what naturally happens in fact the pineapple that grows in the in the wild, (.) the bits that we've now developed to eat serves in the wild as the natural food source for the plant. (.) so when this pineapple appears and drops off it will rot down on the ground, in this ( nice radius) * and=
C [oh and feed the roots
E =it will feed the roots so it will provi-it provides its own food what we've done the pineapples that we eat we've selected and bred the pineapple so that we in fact get get something which is produces a food crop. for us. (.) so it will be okay with its its rotting it will rot round the roots will go down into the compost keep the compost (.) moist (.) uh keep the plant warm because they are tropical plants again (.) and keep the keep them misted perhaps like a bathroom would be a good place to grow it providing it gets reasonable amounts of light but they like quite warm temperatures * They like a warm house and keep them moist humid around the plant (.) and moist around the roots
C ummm well good luck with that Valerie thank you for ringing in,
C now it’s Sheila from East Ham Hello Sheila
L hello umm I’d like to ask you about this tiny little date tree I bought, um I didn’t
get it from a nursery I got one of those sort of hand grown cuttings from a church
(fete) so it’s very small and uh I want to try and grow it as a standard um I’m not
sure how soon you should start sort of pulling leaves off I mean at the moment it’s only
got 12 leaves but they go right down to the ground. I’m not sure whether I should pull
ones off and you know they come up or whether I should wait until it’s quite big and
then start taking things off it.
E right um the best thing that you can do (. ) uh for this one is let it uh continue to
grow but cut back the side shoots (. ) these the branches that are coming
L    [yes
E out to a couple of buds
L    [yes
E eh as it grows up * not this year but (. ) next year when it starts to
L so leave it alone for this year
E when it starts to establish itself so you need a couple of years and then cut back. (. )
This allows the stem uh to strengthen and thicken and then it will continue to grow
L    [umhm
E upwards uh to the height that you want it and then once
L    [mmhm
E you’ve got it as high as you want it remove (. ) the the side buds and then you will
have the bush at the top matter of pruning- uh growing it as a standard sort of on a
stem you can have it as- with a round head in which case all the time you cut back the
side branches just just so it bushes
C Like the kind you see outside of posh restaurants (. ) Sheila, cost a fortune to buy
though don’t they
L    [mmhm
E If you want to grow it on a long leg like that that’s fine it just takes a little bit of
time uh and a lot of patience and it is as you say the cheaper way to do it
L    [umhm
E because it takes quite a while to get them to that stage and um a lot of care
therefore you have to pay for it but if you’re patient enough to do it, (. ) do it yourself.
C then that’s fine good luck
L    [mmhm
E right on to our next caller
C Liz in Ealing it is Hello Liz
L Oh hello um just a couple of quickies. (.) the first one is I have a bridal wreath plant
hhhh. know what I'm talking about,
E This is what we've been trying to decide (.) just just describe it to me and we'll
L well it it cascades all over the place and has little white flowers on it (pause)
E All right inside or outside
L um coming up the stems I don't know the Latin name for it
E right is it indoor or outdoor
L it's outdoor. it's a shrub.
E not thinking of bridal veil not thinking of viburnum is it flowering now
L no it's not it flowered about May
E May time it sounds like it could be the vi-viburnum do the branches go out
L um horizontally and it produces-
E [yeah
L it's not thinking of- bridal veil not thinking of viburnum is it flowering now
E May time it sounds like it could be the vi-viburnum do the branches go out
L um horizontally and it produces-
E [yeah
L [mmm
E [umm
L viburnum family and it has lots and lots of late flowers almost like the lace cup (.)
L hydrangea that's absolutely beautiful yeah so
E [that's right that's right
L [umm
E the best time to move, and this is uh this stands for pretty well all all plants uh
L particularly deciduous ones (.) uh is in the winter in the dormant period and if you
E want to (.) play safe, um move them towards the end of the winter goodness knows
L what this winter's going to be like with the weather we've had for the summer which
E has been somewhat unusual (so it might- )
C [so you think it might be a bad one then)
E I was talking to someone this week (.) assessing the amount of berries on the trees
L and looking at things like that (.) and if you look at * folklore it seems to suggest that
E it might be a tough winter * who can say I hope I'm wrong but definitely so so move
C [ohh
E it during the winter dig round the plant, very carefully (.) or quite a way away (.)
L start quite away from the plant and then work in to see where the roots start to come,
E because you don't want to chop it right near the base @else you'll use all your root
L system (.) and then gently dig round it, and it's the sort of job that takes quite a while
E because you're working carefully (.) so dig in a circle round the plant really it will help
L you to to uh move a bit of soil with it if you can just to have more soil with it if you
E lose if don't worry because bare root trees do quite happily get going again if you can
L keep some soil with it it means that you know that you won't nick so many of the roots
E that's what you're trying to do in fact when you're lifting shrubs and trees you don't
L want to damage the major roots after all; that's the way that it gets its food and its
E water. so you will get some you won't get more transplanting shock and then move it
L into its new site, (.) and then you use some new compost in with it in the hole and mix
E that up with the soil, and then it'll have uh plenty to get its roots going- uh into and
L if you put a bit of fish blood and bone uh into the uh into the hole there'll be a little
E bit of fertilizer, little bit of nutrient for when it gets going. A lot of plants do suffer
L from a little bit of shock. uh when they are moved and ( so that'll help it).
52 C like people
53 E yeah like people exactly the same
54 C hhh Liz thank you very much indeed for ringing in.
C And first on the line, with a question for Mike is Allen (.), ringing from Ashford.

Hello Allen

L yes good morning

E Good morning Allen

L uhh my question is about brickwork I got umm (.) a bungalow and the brickwork on the front is soft brick and the surface is sporean * I've got a certain amount of

E [ummm

L repointing to do, (.) but it's not an attractive brick

E [right

L so (.) after repointing I want to seal it and cover it with a brick pain:nt * ummm what

E [umhm

L I want to know really is what's the best thing to seal it with and also is the normal masonry paint sufficient to uh cover you know (.) sort of a porous brick

E Yes sure okay Allen well first thing I would say to you do- (.) you- I'm sure you thought about this very carefully but paint on brick work is is forever or very nearly once you've painted it, it would be very difficult to go back to natural uh face brickwork uh (.) so I'm sure you gave that a lot of- a fair degree of thought before co(hh)ming up with your decision,

L yes

E uh Once you've made the decision (.) uh really the field is yours, (.) you know any (.). any standard masonry paint is- can be used over brickwork and you know it will will penetrate- will seal the surface. it will help to stabilize it to a certain extent and stop water getting in and causing frost damage. (.) hhh. the key to that is really the pointing you mentioned. h.uhh Do spend some time and effort in getting that pointing in perfect condition because that's how the water gets in:. It gets behind the face of the brick where the pointing is damaged or missing soaks in behind the face and the first frost (.). bang (.). comes the face of the brick so pointing is really (.). the hard work in this job devote some energy into getting that into (.). very good condition and then your paint can just go on you know just as if you were painting on rendered wa:ll.

L yes

E hhhh. does that answer your query

L uhh it does yes on the pointing * point so to speak=

C [haha

E [yes

L =uhhh * very often they they talk about using lime with- in the mix I take it it's sort of a (.). a three to one mix (.). pointing sort of a harder

E yes I mean the purpose of the lime: actually (.). is to uh (.). ease make- the mortar more plastic if I can use that word it makes it more (.). hhhhh. that's the only

L [yes

E word I can think of (.). makes it easier to apply easier

C [is there another word,

E to (smooth) into the joints and to firm into pla:ce. (.). The alternative of course is to add a plasticizer to your mix instead of lime just saves buying one extra

L [yes

E ingredient uh @It serves the same purpose. umm yes (.). I would think that mix is is a fair mix uh (.). you know Trowel it neatly into place, I don't know what joint you fancy using, the one to avoid with the sort of porous brickwork you've got is a recessed joint. I would go for the sort of bucket handle you know with the concave curve or else a weathered joint (.). which is just sort of a smooth edged joint down to the top of the uh brick below the pointing so to speak, that helps to shed water from the brickwork.

C Allen, thank you for your call,
Another Allen now, calling from Hampstead. Hello Allen.

Good morning to you Allen.

Hello. (.) emmm I had a problem recently (.) due to the hot weather uh My wife asked me to turn off the: heated towel rail in the bathroom. (.) with a little bit of effort and uh some WB40 I managed to free the valve and closed it down (.) not having (.) been used for some time this valve then started to leak (.) all right, * okay, so umm I I attempted
to drain the system down, with a view to (. ) checking the valve and if necessary replacing it. (. ) and it caused an unusual problem in that (. ) that having the the uh um valve uh down below, to drain the water out, I noticed the water in:

the header tank wasn’t dropping. (.) which I found rather strange anyway

eventually the water dropped to the right level in the bathroom, and I removed the (. ) uh the offending valve, and packed it (.) uh and then I was wondering what I was going to do to top up the system because the water was at its right level in the header valve.< in the header tank. (. ) okay, (. ) now in actual fact I did overcome the problem but I thought I wanted reassurance (.) that in future if there were loss of water from the system, uhh uh that the header tank was actually functioning. I I refilled the system by connecting up a hose to the valve from which enough trick one that’s often used by plumbers but um I’m I’m still as baffled

as to why:; why the water didn’t drop as you drained the system.

well it it was a mystery

umm and you haven’t cracked it

when I forced water back up uh for a time

water bubbled up into the header tank (. ) and out through the overflow

so there’s

there’s obviously no blockage there

apparently not (. ) and it was doing this before

no

the rest of the system was in fact filled up.

It sound very much as if there’s an airlock somewhere on that system Allen, (.) it’s the only thing I can think of you know if there isn’t a physical blockage and you’ve proved that by getting water to (. ) force up right up through to the header tank from below: (. ) um I can only think that there must be an airlock on a

part of the system that little loop (. ) that you’re uh actually draining down.

If uh (.) with a circulator pump going wouldn’t that clear it,

It should do but uh often heated towel rails aren’t on the heating system (. ) @if you
can- if that doesn’t sound too stupid hehheh
[yes I used to have one like that it was always
on (when the central heating was)
[yes,
[yes
[yes
[yes

E they’re on an open loop (. ) from the boiler to the

L [yes

E hot cylinder (. ) to the towel rail and back (. ) in other words they’re on on an

L [yes

E open bypass system rather than being on the pumped central heating system. (. ) um

L [yes

E nevertheless it doesn’t get us any closer to tracking down the problem

E What I’m worried about is if in the future there’s evaporation loss in the system that
the header tank won’t be functioning

E What I would do Allen is I think is keep an eye on the system next time the
heating’s on: which heh probably won’t be today: heh but when it when it does come
on as soon as it switches on head up head up into the loft an have- just sit and watch
the header tank for ten or fifteen minutes and as the system heats up you’ll see the
water level rise slightly in the header tank

L [as the water gets hot

E @as the water gets hot that’s right (. ) if that isn’t

L [yes

E happening that does indicate something is seriously amiss and I think at that point I’d
hand it over to a plumbing or heating engineer to come and give the system

L [right

E a once over (. ) probably to drain it completely from the boiler from ground level
rather than from uh near the valve near the-

L [Well I did-I did drain it from ground level,

E You were- you were draining from bottom- the bottom point

L I did drain it from that level but I didn’t drain it right down.

( . ) I drained it as far as was necessary.

E [well of course there’s no need [umm fair point

E But I think that’s the best advice I can give you

Allen, (. ) uhh have a look at it next time you run the system and if there’s no sign

E of expansion then you’re right it isn’t (. ) doing its job properly and I think the system
ought to have a professional check up actually on-site

C Thanks for your call Allen,
C We'll go to Caroline next ringing from Farnham Hello Caroline
L Hello,
E Good morning Caroline
L Hello (.) well I hope you can help me because I'm absolutely fed up umm I brought
this garden chalet (. um a few months ago; (. and I didn't want it coated with
anything because I wanted to coat it myself ummm (. with the same paint that I used
on my garden- on my house window which is secants I don't know if you're familiar
with that (. I think where I went wrong I used the (filter) secant seven ( ) yes that's
it- well actually when I went in to shop I called it (factor) seven to mean filter seven
and um I put it on and it was just- the chalet is made up of European w-soft wood
whatever that is
L a bit of pine I would expect,
E Yeah that's right (. and when I was putting the secants on which is absolutely
fantastic on my house (. um windows you know I can't speak too highly (. about it.
(.) but it was like sliding around and it looks absolutely awful, and it hasn't sunk in,
and all I got paint marks all over the place. (. Anyway what I did last week (. I
scraped every single bit of that varnish off in that hot weather it nearly killed me. (. and
ummm I put on something called woody:. which is a wood preservative * .hh but of
of course (. now the woody is scraping off because I suppose the secant is an oil base
E [yeah
L and I put a water based preservative on top (. so after all that hard work I just don't
know what to do now;
E hehheh. yeah I fear the problem may have been Caroline (. despite you asking for
your shed not to be treated with anything (. It probably was treated with some form
of wood preservative
L [umm
E first of all. now we don't know what type was used by the manufacturer but if it was
a solvent based type it will have left a water repellent surface there (. and
L [umhm
E certainly a water-based product won't take over that hhh. not until the shed has had
L [no
E a year or so to weather. * uhh now the secants filter seven now I do know secsants
L [right
E products I don't know that particular product itself I'm afraid (. You say it was a
sp- a solvent based varnish (. @basically
L [Well what I should have done apparently is put the HLS
E secants on first and the filter seven is like a top coat.
L [Yes yes I think this is the problem (. I'm not blaming you for not following the
instructions but it does sounds as though that is the fault
L [yeah
E [Yes I know it's my fault
L I don't think the shop was particularly helpful if they didn't point that out to you
E [No:: well to be perfectly honest I'm fed up with DIY shops
and garden centres, because (. hhh. the- when I got into this one shop and she says let
me get out paint expert and all this so-called paint expert did was (. read the
instructions on the side of the tin: well I can do that:), you know,
E Quite quite . hhh well look Caroline I think you have got two choices (. at this time
L one is to pack it in this year (. you sound as though you could do with a
L [haha
E break anyway
L My husband could do with a break I can tell you;
E I'll bet (. because I'm afraid otherwise you're faced with stripping back once again,
uh which is going to mean I mean there is nothing you can use beyond chemical paint stripper to get off this varnish I mean you can’t use a blow lamp or anything. You could try a hot air gun but do be very careful because if uh you know The dividing line between charring uh the wood and not charring the wood is very thin if you’re skilful you can get away with it. I’d be inclined just to leave the thing entirely for this year let it weather over the winter hhh and then let’s start again in the spring but with a solvent-based preservative there are several of these with pigment added so you can have the sort of the cedar look or light oak look or whatever you fancy, but do stick with solvent-based type rather than a water based type uhh and I’d just hope that that does the trick. hhh Mike when wood is tanalized what does that mean. That’s just a preservative treatment carried out at timber yards it’s a process of forcing preservative into either or into manufactured components you know like fencing components and that sort of thing so any wood you buy for outdoor should be treated tanalized is just one of two or three different processes that timber merchants use. ummm 819-8111 our number if you have a question for Mike Lawrence on the Fix-it phone in
To our next caller, in Edmonton It’s Michael on the line, Hello Michael,

Hello Therese good morning.

good morning to you Michael.

uh good morning Michael.

What can we do for you.

uh I’ve got a problem with our wa:lls. uh what happened was: umm we knocked out the chimney breasts from downstairs right up- to upstairs right into: the: loft.

and umm one lot- you know one side of the house looked really good but umm the other side of the house there’s a slight problem. because we’ve got one room upstairs undecorated and there’s a slight patch of damp on it and I was wondering what we should do: before we decorated it and whether it was a major problem.

Always difficult to diagnose damp over the radio, but um obviously you’re wise to worry about it bit. uh can you just explain to me is this wa:ll anything to do with where the chimney breast is or was

Yes it is- um it is um you know where the: plastering is it’s the actual plaster there’s a patch of uh wet on it and uh the actual plaster work has been done no:w for well over six months

and this on the wall that the chimney breast was removed from

yes and umhm the plaster itself

[am I right,

yeah I see um okay is there a flue back to back with the one you removed

yes in the: house next door

[in the house next door yeah I presume you got permission from them

and did it all properly before you took this chimney breast out

Yeah

good hehehe because it’s something you actually need- you do need a certificate from your local authority for removing half a chimney breast like that because there’s a chance you could upset the stability of the wall-right enough of the history lesson umm the damp could be two things one it could just be residual moisture in the brickwork. that had been in there for some years especially if the flue had been disused. It may have suffered condensation and the brickwork may have been continuously slightly damp. and you now have exposed the back wall of the flue to the open air effectively

by removing the chimney breast. plastered over it, it

[umhm

may simply be that dampness gradually drying out through the plaster. if it’s that, really all you need do is avoid sealing the wall surface with something like vinyl wall covering stick with emulsion paint or or plain wallpaper which will actually let that moisture evaporate through it over the next few

months and basically just wait and see. However it could be damp from next door. * which is a possibility and that could have all sorts of causes

again it could be condensation if they don’t use their flues. it could be rain getting in: down the stack due to faulty flashing, where the stack meets the roof surface, due to bad pointing on the chimney stack, all those sorts of things that you would need to look at. It’s obviously made more difficult that it’s next door rather than

your stack I mean you obviously went right up through the roof the whole stack

is gone on your side
[yeah the whole lot

E yeah so (...) really provided the roof was made good properly. where the stack was
removed it looks odds on that the problems are (...) either condensation from your side
or problems next door I think time will tell Michael if you’re prepared to sit tight on
it for the next couple of months * watch that patch mark it with pencil. (...) so
L
[yeah
E you can watch if it shrinks. (...) if it a- uh appears to shrink then it quite obviously
just drying out gradually it could take some months * but it’s nothing to worry
L [yeah
E about.
L It hasn’t uh * actually shrunk and it hasn’t gotten any larger.
E [umm how odd
L I mean it came out- it came out about a month after the rest of the plaster had dried.
E umm umm (...) you’re sure it’s damp and not just discoloration. (...) I mean that’s
L [well it feels damp
E something it does definitely feel damp does it,
L [it feels damp to the uhuh hand damper than the
rest of the wall
E how very odd
L and it’s got it’s got kind of a slight whitish umm
E yes all that is- all that is is the dissolved salts in the brickwork being brought to
the surface as the water evaporates it brings- it’s the same stuff that comes out in
L [yeah
E kettles it’s the same principle when the water- when the water evaporates it leaves
them: behind as sort of a white powder. * Brush that off dry don’t try to wash it off
L okay
E I mean it can’t be rain penetration, it can’t be plumbing problems, it’s got to be some
residual moisture in the brickwork Michael. and I think the best thing is to just to sit
tight on it decorate as I suggested with something that’s porous to water vapour and
really just wait and see. (...) Give us a call back in a couple months time if it’s still
there.
C Thank you for your call Michael,
Siobhan’s on the line now, in Tottenham.

Hello (good morning)

Good morning Siobhan

Hello (.) umm my problem is I have a wall mounted programmer (.) for my central heating and hot water system. (.) and it’s the clock-dial type the 24 hour clock dial type * the problem at the moment is it seems to have seized up (.) it’s not turning, (.) and uhmm do I need a new one, probably yes (hehe) it’s one of the old older style ones is it with a clockwork mechanism is it, you know that actually dri:ves the dia:al around (.) not one of these fancy new digital (.) jobs hehe.

no (I’ve had it for four years)

Well they can pack up Siobhan, I mean it’s just one of these things. They’re a piece of machinery. (.) Their problem is often they’re off for long periods of the year and then umm they seize up have you actually tried the simple trick of turning the dial by hand.

I have, it’s so stiff

and that hasn’t freed it.

I think probably the simplest thing to do then is to (.) contact the manufacturers I’m sure it has a name on it somewhere (.) I don’t have them all on my fingertips

hah.

I have. it’s so stiff

and that hasn’t freed it.

I think probably the simplest thing to do then is to (.) contact the manufacturers I’m sure it has a name on it somewhere (.) I don’t have them all on my fingertips

[No]

hah. I’m afraid. Certainly if you contact your local heating supplier they’ll be happy to give the manufacturer’s address, (.) Give them a ring and tell them what’s happened what a lot of them do:, is to offer exchange units. (.) They will send you new innards for the controller and you: then fit that @it’s not a particularly difficult job, and then you return the old-seized-up one back to them. Uhmm you know a simple exchange process like that. (.) huhh if you if you don’t feel up to actually doing the swap-s the changeover yourself it’s something that any plumber or heating engineer or electrician will be happy to do for you. (.) but it’s generally the best bet rather than trying to tinker around inside the things.

So they still make the old dial thing,

yes I was amazed some years ago (.) we had a very old uh dial- type heating controller which had run for (.) oh ten or twelve years without any trouble and the same thing happened to us: and I was actually delighted to phone up the manufacturers * and sort of say what do I do now and they said oh: name and address, we’ll send you one and they actually sent it before getting the other one back. which obviously helped it means you don’t have to have the system out of commission for too long (.) very helpful service indeed and very reasonable so I think that’s the best thing to try Siobhan,

(.) okay,

okay thank you.

Right Thank you for your call
C It's Ian now in Peckham, Hello Ian,
L Hello,
E Good morning to you Ian
L oh Good morning Michael. uhh my question's about installing a fireplace
E oh good for you
L yeah
E hehehe I've convinced somebody
L yeah * I've bought an antique fire surround and uh (..) I've just got an old cast iron
E umm (..) firegrate- fireplace off a building site which needs renovating
L first of all um once I've done that (..) I just want to know (..) how to go about
E yeah
L installing both of them into uh a chimney breast, you know fire breast, is that- I
E yeah
L haven't got uh (..) really much of an idea at the moment.
E heheh I see: um you talk with the about the um first of all is this a cast iron fire
L surround, you know (..) sort of Victorian
E no
L it's a pine one,
E it's a pine one. okay. and the the grate itself @what you describe as the grate you
J mean just a coal basket that's going to sit in the bottom of the fireback is that right,
L uh no it's sort of- it's like a- (..) it's quite a big uh piece of cast iron you know it's
E about 3 feet tall square oblong well rectangular sort of thing * it's got a bit of a
L I see does-
E surround about itself
L I see it actually seems to have sort of an integral cast-iron fireback (..) itself so (.)
E yeah
L that's what it is
E okay well that- start off with that that is going to sit back in the fireplace recess
L yeah
E but as I was saying at the beginning of the programme the the problem there is
L and the flue
E actually making the connection between the (..) top of the fireplace so to speak and the
L flue itself
E well I so I don't think we- we're not going to want it to be operational I don't think
L It's just decorative
E It's just gonna be for show yeah
E well I think in that case basically all you have to do is to set it in position (..) Do
L you have a clay fireplace back there at the moment
E yeah
L I don't know what it is at the moment it's just all uh it's just blocked off- and
E hehheh
L (painted)
E I see well step one is gonna be to open everything up Ian and see what you've got
L in there, (..) if- sorry go on
E wah wh-
L How- how well I mean how much wall do we knock down
E well if it's been blocked up, (..) start right in the centre of the chimney breast and
L basically work outwards (..) and it'll be perfectly obvious where the edge of
E yeah
L the existing fireplace recess is. (..) You will come to a point where uh the brickwork
E or whatever mee:ts the edge of the existing surround there'll be a lintel across the
53 opening (.)
54 L [Oh will there
55 E Yes that’s right and you will realize that you’ve reached a sort of existing square
56 edge as you chip everything away
57 L [yeah
58 L Okay and so um the cast iron grate the fireplace I’ve got (.) that’ll fit (.) it’s unlikely
59 that’s gonna sit perfectly inside- the hole is it
60 E That’s right. It depends if the old fireback is still in there. If it is; and it’s a fairly
61 small fireback you may have to remove that in order to fit your cast iron thingymabob
62 (.) in it’s place:
63 L yeah
64 E But again you won’t discover that till you actually open up everything. (.) but as I
65 say the point that you’re going to have it as a decorative feature you’re never going to
66 light a fire in it means you don’t have
67 L [no
68 E to worry about the flue. But do do- tell anyone you sell the house to in the future
69 L [right
70 E hhhahaha
71 L I will (.). Also another thing is (.). once we’ve got the grate (.). in place. The fire
72 E [umhm
73 L surround you know leaves quite a big gap between itself and the grate. and so can
74 we just decorate that with tiles or something (.)=
75 E [why not yes I mean that was the-
76 L =that would look normal would it
77 L E That was the standard infill yes in Victorian times there would be a band of
78 L [yeah
79 E decorative tiling around there.
80 L [yeah
81 E ummm yes I mean that’s a perfectly acceptable thing again because you’re not going
82 to light fires in it you don’t have to worry about the heat (.). cracking tiles or the sort
83 of cement you use to put them up. just tile them in as though you were tiling a
84 bathroom wall or something. hhh
85 C okay Ian thank you for joining us
On the line now, (. ) Christine in West Norwood. Hello Christine

Hello my query is regarding an existing fire surround which I have * umm I attacked
it with some (nichmore) ( . ) because it had ( . ) numerous layers of paint and I've
just gone down and down in layers of paint and now I’ve
come this horrendous situation where I’ve got sort of (. ) hhh umm it’s a beige
coloured stone I think ( that’s underneath) and I don’t know whether it’s marble or what
kind of stone it is. (. ) and it * it’s all sort of
uneven and I don’t know how to go about finishing it now
Well I’ve got rid of most of it (. ) I’ve (. ) sort of
stopped now and it’s not neat and it’s all sort of (. ) like cracked
Pitted and generally rather nasty which is probably why it was painted in the first
place uh ( . ) um okay Christine once you’re happy you’ve got all the paint off,
I think really the next step is to basically to do some abrading ( . ) in other
words to to actually sand the surface of the stone down to try to get a nice smooth
even surface it’s a good job for a power sander if you’ve got one
Okay
umm and don’t um obviously you can’t use ordinary glass paper on that I would
suggest probably the best thing would be aluminium oxide ( . ) abrasive paper. * hhh and
really just t-tackle the job as though you were you were sanding down a table top. uh
start off with a sort of medium abrasive first of all to try to remove umm, sort of half
a millimetre of surface and so on. Just to try to get rid of all the defects. ( . ) and then
just finish off with a fine um abrasive paper hh. ( . ) um It’s really going to be a trial-
and-error thing I think to see how you get on: (. ) It’ll be a very dusty job so clear the
room put the dust sheets up and so on (. ) Perhaps equip yourself with one of those little
throw away face masks. ( . ) but I think you’ll find that that will you know may well (. )
get the surface to something like it’s original condition. * hhh if that doesn’t
work, the other thing you can try is an acid masonry cleaner * Now these basically
dissolve away the stone (. ) um so they need using carefully (. ) uh read the instructions
very carefully and handle them with care because they’re fairly nasty chemicals, but they
do do the trick in cleaning up (. ) sort of old dirty marked stainwork. uh not stainwork
(stonework. sorry about that (. ) something like that so those are your two
choices either abrasive or a masonry cleaner umm try it see how you get on.
How shall I finish it if I get down to a smooth stone finish should I: seal it or (. )
paint it over or (what so you s-) [Well hhh. after all the hard work you’ve gone to (. ) uh I would be
tempted to leave it sort of in it’s natural state. The problem is whether you’re going to
light fires in it.
No,
Because obviously soot which is probably the biggest stain problem that fireplaces
suffer from. (. ) good (. ) if you’re not going to light fires I would be- I would prefer
to leave it unfinished. You certainly don’t want to paint it again hhh. If you do want to seal the surface because it appears to be very porous um I would apply um a silicone masonry sealer * It’s the sort of thing that’s normally used on outside brickwork, (.) to to keep the rain out. (.) but it does both seal the surface so to prevent stains coffee cup rings and that sort of thing from marking the stone. (.) uh it will also bring up it’s colour a bit @rather the same effect as varnishing wood it will (. ) enhance any natural colour in the stone.

L Great.
E Okay?
L Yes thank you very much
E Righto Christine thanks for calling
C Christine, thank you, to Philip our next caller
C To Philip, our next caller who’s on the line from Hayes, Hello Philip,
L hello,
E Good morning Philip.
L Oh good morning umm couple things the first one is (.) uh to do with the washing
machine drain (.) in: the kitchen. (.) and umm I understand that you have to
E [yeah
L have a break in the pipe effectively so you put you put the hooked bit of the pipe
from the washing machine (.) into the vertical plastic pipe.
E [into stand pipe yeah
L Now the problem I see it as that pipe goes right into a wall and straight into a drain
which is right outside the kitchen door. (.) and we’re tending to let- it’s
E [yeah
L tending to get a bit smelly because it’s an open pipe coming from the outside=
E =into the kitchen.
L into the kitchen. now is there any way round that or do you just have to try and keep
the drain * (clean as it were)
E [Well it it it
L No Philip, the- the thing that’s missing by the sound of it is that you don’t (.) sound
as if you’ve got a trap on that stand pipe.
L No:
E Well it shhh.ould have. what it should do is go down- it stands against the kitchen
wall. (.) and then- you should at the base of the pipe at floor le:vel
L [yes
E have a U bend just a a standard plastic trap such as you might
L [oh I see
E have under the bath or basin and then the pipe will go
L [right
E out through the wall and discharge into the gully outside.
L That that won’t uhh stop the flow of the water
E No not at all because when the machine is discharging just like- (.) emptying any
water-using appliance you pull the plug on the wash basin the contents of the basin
L [yep
E run down through the trap and out and the last of the water (.) reseals the trap
L [yeah [yeah
E you know it’s as simple as that so all you need to do is off down to the superstore
L [ah right
E pick up a a U bend and just re-make that pipe run on
L [yeah
E have to disconnect the elbow at the point where the
L [right
E pipe goes through the wall, hook your trap on and just re-position your stand pipe.
(.) simple as that.
C Did you say you had another question Philip,
L Yes it has to do with fencing I’ve recently just been putting up some fencing a:nd
two kinds actually one I put up in January and it was fence panels (.) and the
E [umhm
L other’s close bordered featheredge fencing I’ve been doing last wee:k and I found that
E [right
L uhh some of the timber is beginning to twist ra:ther severely. (.) uh
E [umhm
L even after few days in in (.) some cases had to take out some of the the actual
boards and replace them. (.)
E [yeah yeah
L Is it- normal with modern day timber or is it- that you know; should I go to other
supplier or what (what )
E umm well I think I think you’ve you’ve hit on something unfortunately yes: I think
it is normal today I think there’s an awful lot of poorly seasoned timber around and
L (yes
E I think it’s been compounded by this incredibly hot weather that your timber has
L (yes
E been literally roasted. uh it’s perhaps come out of an undercover store where it’s been
L (yes
E closely stacked and had a moderate moisture content level and it’s come out and
L (yes
E you’ve put it under an infrared la(hh)mp virtually yes and baked it dry: I’ve seen this
with some building work been going on next door to us: they did some new fencing
work about a month ago. (.) and there’s a lot of splitting and twisting going
L (yes (yes
E bad I would go back to the supplier: (.) show him some of the stuff that he’s sold
you. and say look this is no good: I wanted fence panels that are gonna stay straight
and I wanted boards that aren’t gonna twist and warp can I have some more timber
L (right
E please. and if he’s worth his salt he ought to hand over without any complaints
at all. uh but you’re perfectly within your rights you’ve really got a product that isn’t
satisfactory you know that isn’t suitable for its purpose take it back and ask for a
replacement
C Philip thank you for your call,
Carol now on the line from Hackney. Hello Carol,
L Hello
E Good morning Carol
L Good morning. (.) umm my question is that in a Do It Yourself manual I've seen a
system for sash windows that completely does away with the sash cord and weights and
E [yeah
L it's it's like a metal spiral hat the window runs up and down on.
E That's right yeah.
L But I can't actually find out how to get a hold of this. Do- (.) do you have any idea
who manufactures it.
E umm yes I not off the top of my head I'm afraid Carol no:: but um certainly there
are one or two firms around might be worth getting in touch with, there's uh (.) an
outfit called the box sash window company. * Who I I know advertise in the
L [Right
E do-it-yourself magazines I have a feeling they're also in the London area, so it might
be worth (.) trying directory enquiries just to see if they if they are: I'm afraid I don't
know off the top of my head I haven't got all my reference boo(hh.)ks with me.
L Right
E [umm It's also something that I would have thought a good glass merchant should
be able to help you track down, * but a lot of glass merchants now into the window
business you know replacement windows and so on hhh.
L [yes
E even a good builder's merchant could help because it is something which can be
fitted directly to existing sash windows. (.) uhhh you know to to replace the old cord
L [That's right yeah
E and pulley mechanism. Uh I'm sorry I don't have the answer at my fingertips but I
thing a little homework may lead you to it. (.) umm if worse comes to worse we'll have
to do some homework at this end and uh see if we can track the manufacturer down
for you.
C How does this spiral thing work then Mike
E well Basically it's a spring * that's all. * It's just
C [ohh
E a spring that sits on either side of the window and (.) is (.) extended as the window
is opened uh and then works in the same way as the cord and pulley. (.) you know
it counterbalances the weight of the window and then is just compressed again as the
window is slid shut but maintenance free and this is the beauty
C [right
E of it no sash cords to break, (.) It's a- it's a- it's one of those- I
C [yes and they're so-
E remember once (.) being asked to write a little article on replacing the sash cords, for
some magazine or other. and, (.) you know I was told to do it in half a pa:ge (.) you
can't (.) it's just such a fiddlely job prising off all these bits of timber, lifting
C [umm
E the sashes out,
C [the threading-
E threading it through, tacking it in place and if you don't get it right the window
either stops sort of (.) two inches short when you shut it or it comes crashing down
because you've got it out of balance (.) it's a tricky job certainly and uh one (.) one
which you embark on with trepidation I think
C [This sounds a good way around it.
E Well they are: and I'm sorry Carol I don't know the answer off the top of my head
but if you don't have any luck uh we'll put it on our homework list and uh see if we
53 can come up with the answer on that one.
54 C ((phone number)) is our telephone number on the fix-it phone-in
C And we'll go to our next caller now, (.) in Windsor. It's Cathy. Hello Cathy,
L Good morning. I do hope Mike can help me because I'm soaked to the skin: (.) I've
E [oh dear hh.hehh.
L been standing in the bath for two hours trying to siphon the water out of the second
floor (..) bathroom, (.) down below into the water container. And I seem to have lost the
6 secret of getting the siphon going. Can you please help,
E hehhehh. Oh dear (.) oh dear good for you Cathy. first of all, gold star for saving
8 water this is to go on the garden is it,
L well That's the idea yes.
E okay well the secret of a siphon is (..) simply to fill the siphon pipe with water. (.)
11 Then to immerse the top end in: whatever you're emptying (..) and stick the bottom end
12 in whatever you're trying to fill. Of course if you don't have that pipe completely full
13 of water, (.) it won't work. (..) you get an air lock in it, and the siphon breaks down:
14 (..) Now are you using- I suppose you're using a garden hose are you
15 L That's right that's right yes what I've done is I've got a large bin (.) underneath the
16 uh bathroom window, about twenty feet below
E [umm
L that end of the hose is already submerged in water. in about ten inches of water.
E Yes that won't matter actually
L Well that's sort of to stop the air going through, that was the idea: (..) the other end
21 I'm standing in the bath (..) ( literally end ) about five feet of hose, into the bath, (.)
22 Hold my thumbs over it when I think it's full of water, raise that above my arm, you
24 know above my head (..) and hope that the water goes down inside the um inside the
25 hose (..) meanwhile I'm soaked with water-
E [there's water all over the bath,
L That's right
E ooh what fun
L (haven't) started going for the last hour and a half
E Well as I said Cathy you haven't managed to get a complete column of water (.)
31 through that hose
L but the bin is getting fuller
E Well yes you keep on emptying a hose full but that's all and then the siphon is
34 breaking again
L What am I doing wrong.
E I think your arms- your thumbs aren't far enough apart for a star(hh.).t. Is there
37 someone around who can give you a hand,
L Yes there is
E okay well what we need is basically someone at the bottom end to block off the
40 bottom of the hose
L Oh is that what it is
E While you you've got to get that hose full of water along it's entire length * okay,
43 L Right yes
E which will mean connecting it to th tap or something getting it full of water and then
45 (..) for a split second (..) you both need your thumbs over the end of the hose
E Well do you know I used to do this in the last drought all by myself without any
47 help I used to get it going
L ( )
E I think the main problem is the drop you've got because this is actually- you're not
50 sort of siphoning out of a bath into a bucket on the floor or something, You've
actually got this huge drop which is taking the water out of the hose very quickly. (.)
52 Basically your end has got to be underwater (..) in the bathroom (..) before the other
end is unstoppered, and once that’s done provided you keep your end in the bathroom

L [yes

E under the water it should-

C [hahahahaha I hope someone doesn’t come in halfway through this conversation

E As long as your end of the hose is kept under water in the bath the siphon will

continue to run. * huhuhuh okay.

C I thought you were going to go on about sucking water out of the end and all that

stuff

E No no no well that tends to be messy I mean that will get the siphon going

L if I haven’t got this done by next week I’ll give you another call next Saturday

E huhuhuh okay

C [yes you do that

E Meanwhile you won’t be able to have a bath hehehehh oh

E Good luck anyway

C [yes thank you for your call
C We'll go to Irene next who's in Hornchurch. Hello Irene,
L Oh hello good morning
E Hi Irene
L Well I have a plumbing problem in my bathroom which has been here ever since I've lived here (.) but I want to try to put it right. * The bathroom cold water system is
E [uhuh
L such that when cold water tap is turned on at the same time as the wash basin or the loo flush (.) only one will function.
E Yeah
L and the cold water (.) running from the bath (.) tap is very slow and ( ) and I wondered if it would need a new pipe (.) to overcome this.
E yeah what I think you've got Irene is a clear case of water starvation there (.) What
L [oh
E is happening there is the pipe supplying the bathroom, (.) can't deliver enough water to serve more than one appliance at a ti:me. (.) It could be that the pipes are (furred)
L [right
E up I mean if you've got an old house and perhaps the pipe work (.) I don't know do you still have lead pipe in the house, or is it all copper
L Well that I don't know I'm a I don't really I mean I can't remember twenty years ago
E sure
L I just don't know:
E I appreciate that but as I say maybe furring up or it may simply be a desi:gn fault. (.) that the pipe supplying the bathroom (.) is not big enough to deliver the water you need. (.) In either case really the only solution is to get a plumber in to actually take up the floorboards trace the pipes and see what is there first of all (.) and then he can
L [umm
E advise you (.) whether the pipe needs replacing. (.) It's not going to be an enormous job I wouldn't suspect but it is one that's the answer to the problem I think.
L @It would be but um- (.) the water to the bath was very slow when we moved here, (.) and then my husband had the tank put on stilts. because we're in a bungalow
E That would have helped
L and that did help the water was faster it see:ms to be getting slower and slower and now:, as I said if we have the whole three working, (.) one or the other packs up
E Yeah. (.) well I think that's the root of the problem Irene but again I think the best to get a plumber in to give a once over and actually pinpoint the faults for you. uh and then advise you the action needs taking.
C To our next caller
To our next caller then. It’s Dennis in Penge, Hello Dennis,
Hello there.
Good morning Dennis.
Good morning, yeah my problem is I’ve got a front door and it’s double glazed. 
We had it put in a few years ago now ah the problem is that it’s rubbing against 
the bottom threshold. It’s scraping. Now you see I’m a carpenter but 
I can’t understand how I can umm sort of fix so it doesn’t rub at the bottom. It’s all metal if you see what I mean.
It’s an all metal door.
yeah I can only think that it’s dropped on its hinges a bit Dennis,
Yeah 
I don’t suppose whether there’s any adjustment available on those though it might be worth having a look, hh is it’s a metal door in a metal frame is it, 
it is a metal door in a metal frame yeah.
Yeah and what is the sill, is that also is that a hardwood sill, 
No: it’s actually metal as well. the frame is actually metal as well. and the thing is when you look at the door, it doesn’t show any evidence that it’s dropped away from the hinge. If you see what I mean the top hinge hasn’t dropped away 
but the binding is is quite noticeable and quite serious.
It is quite noticeable yes 
hhh. there’s not a lot one can do with these doors on a DIY basis Dennis unfortunately um the only th-thing I can suggest is to get in touch with one or two local firms supplying replacement window and that sort of thing see if they can uh send someone up and to give you a hand and try and sort this thing out I mean it may be that the door will come off its frame and be realigned within its frame but it’s very difficult to do on a DIY basis. uh-
mmm quite heavy I should think to remove it 
well that’s right. I mean its not- with a wooden door you can whip it off and plane a bit off the bottom you can’t do that with metal doors and I think actually getting an expert in to have a look at it would be a good idea.
Well on that note Thank you very much for that call Dennis the last one in this part of the programme.
C We can go to our first caller (.). hh who's ringing in from Twickenham and it's good afternoon to Liz Hello Liz?
L Hello::
C Yes what can we do for you
L um I'd like to um ask Mike Houton, uh when you know your cultured pearls have to be restrung< I've got some (mikimoto) pearls (.). and I got them for my 21st birthday
C [umm
L I've had them about two years now. (.). um when do they need to be (.). restrung
C Oh yes (.). restringing. (.). is that very important then * Mike
E Yes good morning Liz
L Good morning.
E ummm it's very important to have your pearls strung very regularly * a year to eighteen months if you wear them- wear them (.). all the time or even two or three times a week. (.). and it's very good to just check the uhh the stringing just where it joins the clasp if that's going dark (.). then it's time (.). to have it restrung. (.). and if
L [umm
E you take it along to any reputable jeweller. (.). They'll be delighted to help you with the restringing
C Does it cost much Mike
L [Thank you
E uhh a single strand may cost about ten pounds to have it cleaned restrung checked
C ummm
E Actually quite a small price when you think that it's completely hand done (.). no
C umm
E machines can string
C No a very fiddlely job I should @imagine .
E [very fiddlely
C So if you don't restring regularly, uhh do they do they get stretchy and loose then
E [that's that's how they start they get stretchy (.). umm they get gaps between the little knots that are in-between the pearls and the pearl itself and then they break (.). and then you lose (.).
C [yes
E maybe only one or two maybe you loose more (.). that's why it's important to have it restrung
C [uhuhh
E and what about cleaning what do they actually use to uh to clean them
C [We just use soapy warm water.
C Oh
E Right, but you have to restring them after you use that because obviously the silk in the pearls gets damp (.). and then uhhh you- it would rot away even quicker
C umm
E so if one wanted to clean pearls at home oneself
C One should always wipe the pearls after use. (.). if you want to keep the pearls perfect, (.). just wipe them with a (.). slightly damp cloth. (.). and then they will keep
E [umm
C perfect for a lifetime.
E That's because of the sweat or the oil on our body
C uh that's right that's right
C umm to our next caller then it's Kathleen
Um to our next caller then it’s Kathleen * Are you there Kathleen?

Sorry? (.)

Yes what’s your question for Mike.

Yes my husband bought me some um Lotus deluxe simulated pearls, (. in 1966. (.)

Uhh I was wondering if they were worth any: (. value or anything to them (. silver

clasp on them and it’s a three row (. pearl set.

Right there’s no value uh to simulated pearls apart from (. enjoying wearing them

because they’re very fashionable at the moment.

L  umm

But um uh uh I’m sure they’re in the very good condition

Yes they’re in the (box cleaning)

uh

That’s right um and I should recommend that you wear them as much as possible but

as to the value um anything that’s simulated uh or imitation very rarely has a re-sale

price.

I see, (. thank you,

And what are they actually made of then simulated pearls

Uhh The lotus ones that the lady’s talking about are are usually made of a glass bead

uh where the uh a kind of pearl essence is secreted over the glass bead (. but

they’re very good quality that particular brand (. and

Yeah

Uhh they’re a bit tougher are they than real pearls in that they don’t suffer the

same scratches and knocks and

Ummm they can- the the outside kind of lacquer that they use for the simulation can

get damaged

So they still have to be handled with care even though they’re fake

Exactly.

to our next caller
C It's Ronnie in Dalston. Hello Ronnie?

L Hello. Umm, good morning. I just bought a uh-huh a good morning Ronnie.

C marbe pearl ring and earrings. Now I don't know what the marbe is about hehh really I know they're very beautiful but uh

L I was just going to ask. I was going to ask you, Ronnie, what it means, we'll have to ask Mike.

E [yes]

L Right

E Right. Marbe is a half pearl. Produced on the inside shell of the oyster, by a certain oyster.

L [uhhuh] called the white-lipped oyster. And um they're extremely fashionable at the moment, and the oyster just secretes uh the maco that's the skins over uh this half pearl in exactly the same way it produces a cultured pearl. So

C [But it's only half]

E It's only half a pearl and when we when we remove it we just slice the shell and and the pearl comes the marbe pearl comes off * and and lovely lustre

C [umm]

E and uh perfect for rings presumably.

L perfect for rings and perfect for earrings.

C [and brooches and things] [yes]

E [yes they they they give a a beautiful show because normally they are between 10 and 15 millimetres in diameter]

C [umm]

E and they look uh very important and extremely fashionable at the moment.

C so is this your first pearl ring Ronnie?

L uhh yes it is yes.

E Are you enjoying wearing it

L oh yes hehehehe I-

C [What's the setting like Ronnie]

L umm well it's 18 caret gold there's 8 diamonds around it

C oohh

E [sounds glorious]

C Don't do the washing up in that

E That's right

L [no hahahahh.

C Ronnie thank you for that call,
C We’ll go to Leslie next in Waltham on Thames Hello Leslie
L Oh hello; (. ) I wonder if you could help me; (. ) My mother has got a three row
strand of zero pearls and matching earrings and umm (. ) she doesn’t wear them anymore
it’s got a beautiful side clasp it’ s- it’s really evening wear (. ) and she doesn’t wear them
anymore and she wondered (. ) whether she could have them converted into something
she would wear or whether it’s better to sell them and (. ) buy something else; and if
so how much would they be worth?
E uhm certainly you could convert them uhm maybe (. ) could you tell me a little
more about them are they (. ) uh have they got a large pearl in the centre graded down
L [yes
E They’re graded (. ) it’s quite a big heavy three row
L [right
E right ummm I: think I would umm uhh convert them into uh a longer
single row uhh that means you can’t use up=
L [umhm [no you wouldn’t
E =all the pearls that are there but at least you could use uh part of it,
L Could she not get a double choker out of it
E Certainly she could get a double choker out of it,
L uhm
E But uh the less rows the more useable they are in general terms (. ) uhm a single row
L [umhm
E can be used an- every day of the week while a three row is for that special
L [yes that’s right
E occasion (. ) or else take it into a local jeweller if you’re thinking about selling it, (. )
and he will be delighted to offer you something
L What sort of price do you think they would be:
E uhmm that’s very difficult because uh it depends on the colour and the shape and (. )
and the condition they are in now.
L Well they’re in beautiful condition
E I’m I’m sure
L they’re lovely
E yeah
C So it’s worth taking it around
E [(it’s worth taking- )
L It seems awful to break them up I mean it’s such a gorgeous set but I don’t know
how much you’d get for it compared to what you’d have to pay for something like that.
E Right it- uh I uh would take it to uh two or three local jewellers.
L umm
E See what they think * and uh I think it’s worth
C [(okay many thanks)
E investing the money in something you can wear all the time.
C Is it quite expensive then to have an existing piece of jewellery like that changed
around into something else,
E Not necessarily if if the lady had uh had what we call uniform uh three row, ie the
pearls all the same size you can quickly convert that into a long one row which is very
fashionable at the moment the trouble with the graded pearl is that they’re all graded
to the same uh uh large and small pearls and if you try and insert more (. ) it just looks
a bit funny.
C yeah right ((says phone number)) is the Fix-it phone-in.
C Hilda is next, calling from Reigate. Hello (.) Hilda.
L [Hello
C Good morning (could you help me please)
E [Good morning Hilda
C Good morning umm about gold. (.) um some little family pieces that have been
neglected and not worn, one is a broad bracelet with some chasing and a wire (.) on it
and sort of milling around the edges and the other is a gold link chain (.) and they’ve
become very dull and there are actually stains on the bracelet.
E I should take them along to your local jeweller * really, you you could clean them
yourself but it sounds to me that it’s gone beyond what (.) one one can do with the
gold cloths and sort of silver cloths that are available at the moment ummm
L I’m not able to get out at the moment,
E Right umm then uhh I would I would try have you got a silver cloth (.) something
you use for cleaning umm silver or cutlery or anything like that
L I haven’t I can I can
E If you can get one, and uh try (.) p’polishing using that, just gently you’ve got to-
L you don’t mean the (impregnated wadding) things,
E yes uh uh that would be uh not the not the items that you use for cleaning brass
because that’s a bit too vigorous for the gold.
L but the tableware, (that)
E [that’s right that’s right and if you try rubbing fairly gently at first
C to see whether the stain goes (.) umm it’s only umm because you haven’t used them
E and they’ve been sitting in one place they’ve got a kind of bloom on them. (.) but
L [yes
C there’s no damage to the gold and and um if it doesn’t improve then you’ll have to
L take it along to your local jeweller who will be able to re-polish
E it. and bring it up to new.
C [( ) Can you dip the chain in anything (.) because it’s difficult to get in the links
E [.hhh
C or something like that (.) for too long (.) you could (.) well you could
E [it would take off the gold perhaps
C start removing the layers of gold and I wouldn’t want that to happen. umm but uh
E try soap and water (.) after you polished it it depends how the staining
C [really
E is (.) but uh anything like that. It won’t- it certainly won’t harm it and at least you’ll
C be trying to improve the texture of the gold
L Hilda, thank you very much,
C Sheila is next, ringing from Hayes: Hello Sheila,
L Hello hello to both of you,
E Good morning,
L Right um I have um two rings um uh one has diamonds and sapphires one has a
diamond and a ruby which I'd like to have enlarged and I'm a bit apprehensive because
um whenever I've had jewellery repairs done in the past (.) admittedly it's been the
kind of repairs where the stone has had to be taken out the stones have come back
chipped (.) and uh I don't know why that's happened
E [Oh dear
L the jewellers always say that um (.) they don't tell me that they've done it, but um
they can't take a stone out without damaging it in some way even a hard stone like
a sapphire.
C Is that true Mike ?
E N- That's not true at all uh hah um can I ask you one
L [uhhh.
E question are you going to have them sized larger or smaller
L Larger. I should think probably one size up
E one size well there should be no reason uh for the stones to be removed to size one
size larger (.) and um all I can suggest is if you go along to a jeweller
L [yes
E who is a member of the A- the National Association of Goldsmiths
L Yes one of them was. that uh that did the damage to my necklace
E Right well I: can only say that that is most unusual
C [Shouldn't happen
E [ummm no definitely shouldn't happen and if I had been you at that time I would have complained very
vigorously and taken (.) other advice but it it- eh eh there is no
L [( ]
E reason to touch the stones when you're re-sizing a ring upwards sometimes uh you
have to take uh the stones out when you're sizing down: (.) because it weakens the
setting by making the oval shape of the ring a little smaller but going up one size
should be no problem (.) and ummm whereabouts are you from
L I'm in Hayes Middlesex
E Hayes Middlesex uh um there- can you get to Uxbridge
L yes I think I know the place that I think you're-
E [There's one very good jewellers in
Uxbridge (.) who I'm I'm sure would umm be happy to do it and do it properly for
L [yes
E you.
L Yes I'm sure I know the one you mean when they do size it up do they sort of
stretch it or add gold
E Depends on the thickness of the shank and and (.) well
L [(well mine's pretty thin)
E Then I would say they would definitely add gold if it's thin. (.) um if it's only a
L [right
E small improvement in size uh then sometimes they'll stretch but I don't recommend
that personally
L right Could I just ask one more small question on that theme (.) I have a very pretty
E [of course
L delicate Edwardian (.) bracelet with amethyst seed pearls and peridot in (.)
E [yes
one of the peridot is slightly chipped I think it was like that when I got it.

L: yes

E: um 2 or 3 years ago now that the stone has to be taken out um if I had it replaced (obviously I would) and it's in I think it has

E: yes

L: got a (Collette) setting now is there any would

E: yes

L: they tend to damage the rest of the stones they're all very close to each other I'm terrified of having this lovely bracelet back with all the stones chipped

E: Not at all. they uh uh competent jewellers are used to dealing with delicate items they can remove the smallest of stones and you won't know that

L: right

E: anybody's been there apart from replacing it

L: Right well thank you very much indeed

E: My pleasure

C: Thanks for your call then Sheila,
We’ll go to Maureen next who’s in Stanmore. Hello Maureen,

Hello I wonder if your guest could help me please. I bought a watch a few weeks ago which has got a me-metal link strap and unfortunately it brings out a terrific rash on my wrist. I’ve painted the strap with clear nail polish, I’ve also put cellotape round it but nothing seems to stop this. Is there anything that you can tell me that I could do. please.

This is a problem that is a very difficult one to answer. I know from what sort of metal is it Mike, that causes this.

It’s uh I don’t think it’s the metal that’s causing it it’s the plating over the metal to give the gold colour plating.

Right and it’s just the reaction of your skin against the uh the metal bracelet uhmm, one thing you can do is to put uh tape. uh underneath it to keep it away from your wrist but even that.

Mind you she tried cellotape apparently.

Well cellotape’s a bit thin and it’s catching.

[ohh]

Probably on the edge of the bracelet and irritating your skin and you have to leave it to to go down uh the wrist after you’ve uh had the irritation because it does bring it up straight away just the friction. But I would put if you can put a soft band inside then that will solve the problem or even a circular pad underneath the watch itself just to lift the bracelet off the wrist. But apart from that all I can recommend is that you uh decide for gold next time because you will not react against pure gold or nine-caret gold and it’s the metal plating that does it and it happens increasingly now as they put metal in the plating.

Yeah especially with earrings I think they bring out sort of allergies as well don’t they.

[that’s right]

Thank you for your call then Maureen.
C It's Suman in St John's Wood Hello Suman,
L Hello::
C Yes
L yes I'm inquiring about seed pearl ( ) I have six (row) 28 inch and I'd like to have it restrung, the problem I'm having I've tried few different estimates. (.) The cheapest one I found locally 225, (.) the highest I've found is 400 pounds. (.) I don't understand why is big difference just for restringing.
C Are seed pearls these tiny ones?
L yes
E [(seed pearls yes (.) the the problem is that it takes a very long time to restring a seed pearl. if you can imagine 28 inches six rows is probably * 250 pearls on
C [umhm
L It's minute
E Absolutely uh and it takes days: * to produce and that's why: uh the price is high
L [that's right
E in the first place uh the difference between the two or the several prices you've got
L [umhm
E is probably is to do with estimating how long it is going to take * uh it's a very difficult job to uh to uh estimate the length of time and uh
C depends on how steady your hand is I suppose what
E [exactly exactly
L you've been up to the night before
E and of course it's the quality I mean stringing is a very difficult art. (.) finishing the uh the uh strand off so it doesn't break, (.) keeping it secure, guaranteeing it for you
L [umhm
E because most competent jewellers .hh will guarantee the restringing for six months=
L [that's right
E =(.) uh all costs money, unfortunately
L [umhm
C Are seed pearls knotted as well,
L no no usually just plainly strung knotted by the clasp.
C [no
L uh that's all just to keep them protected. (.) that's all. but uh I can imagine
E [umm
C the gentleman breaking them after three months and being very upset (.) so you have
C [ye:s
E to be very careful
C Are seed pearls irregular in shape
E They can be I should think uh these are uh uh bumpy I should think in shape probably 2 millimetres in size
C [yes
E And how are they developed seed pearls
C [ummm
E in oysters (.) when you're diving for uhm oysters you'll more than likely find little seed pearls in where (.) little grit- pieces of grit have got in.
So they’re not big pearls that haven’t had a chance to grow:

No no no they’re just small seed natural pearls and they’re produced both in cultured pearls, the byproducts are little natural seed pearls so um they’re uh very beautiful

I can’t imagine threading them it must be a nightmare of a job

It’s a terrible job uh

Do you have to use really fine needles or something.

Well you can’t use needles usually you can only use wire and so it’s very thin wire, and silk and just threading the two and it’s just a job that takes a lot of time

and do you actually hold the seed pearl between your fingers when you thread

the wire through?

yes usually you can uh if you’re clever enough you can use the silk of the old threading to run it on to new silk for the new threading that takes uh a lot

less time. but umm both prices seem: even 275 pounds seems a lot of money, and I would recommend that you shop around a little more uh there are one or two good companies in the West End of London who would be delighted I think to quote you to do it

Right okay Suman, thank you very much for your call,
C Linda’s on the line from Crouch End Hello Linda,
L Good afternoon, hh I wonder if you can help me Mike, I’ve got two strings umm
(.) They were bought for me for my 21st-they were bought separately and strung on a::
ruby and pearl uh Georgian clasp uh now I’ve had them
E [umhm
L some years I’m not saying how long since my 21st,
E hehehe
C Oh go on
L NO no no it’s not that long about 21 years ago
E oh that’s-
L umm, the thing is I don’t wear them as often as I (.) would like to, mostly because
I wear perfume (.) and I know: it damages them. when I wear them they turn from
white to a very pretty pink* and I: you know if I leave
E [umhm
L them in the box I know they’re going to sort of stay that white and I’d like to give
them the warmth (.) but I don’t really want to leave my perfume off at the same
E [of course
L time (.) Is there some way I can protect them.
E oh uh There’s- it’s very easy uh if you just don’t put perfume where the string of
pearls will lie on your neck. (.) It’s only the direct contact between the perfume and
the skin and the pearls that creates, the friction (.) uh to uh umm damage the nacre of
the pearl. (.) so if you dab it behind the ear or uh just don’t wear it on the neck and
the pearls will be perfectly safe. (.) of course uh as I suggested earlier wiping them with
a damp cloth after gives that extra protection.
C ummm
E You needn’t worry about them at all. (.) um Obviously ladies love to wear perfume
and pearls and they do go together providing they don’t touch each other.
C Linda mentioned the change of colour to a pinkish glow does that happen with skin
contact then,
E It certainly does umm uh if you shut a pearl up in a box it uh it loses
the air, and kind of dies (.) and when it comes on to the skin it
C [umhm [ohh
E starts to live again and the lustre shine (.) come through in a very short period of
time (.) Pearls are good on the skin we recommend it uh
C [umm
E there’s no point in having it in a box. * no but
C [no that’s true
E uh and perfume (.) providing you just keep it away (.) everything’s fine
C do pearls come in different colours
E yes all-
C Black pearls
E black pearls uh yellow pearls pink pearls * greenish colour,
C [umm
E and what causes that
C We’d like to know: we don’t know the answer as to uh why pearls come out
different colours, (.) We believe it’s a combination of the sea water, (.) uh and the uh
fresh water, (.) the kind of oyster, how healthy it is, but if we knew the secret of how
to produce beautiful flower pink pearls (.) we we’d be extremely rich today
C [yes
E Yes the umm the pinky colour which is the most sought after, is less then one percent
of the total production of pearls
what about black pearls
black pearls even less (.) I’ve just come back from Japan and I went to a black
[ohh
pearl farm where they produce naturally black (.) and literally (.) two and a half
thousand pearls per year (.) the only place in the world that produces the naturally black
cultured pearl.
C um how do they make them come out black
E It’s a special kind of oyster it’s the black lipped oyster (.) and for some reason these
[umm
E oysters produce black pearls
C Because they’re gorgeous aren’t they
E [ahh I love them beautiful colour. (.) fantastic
[hhh
C ummm right to our next caller then
Hello Joy,

Hello?

C yes

L * umm my question is where does the saying, pearl for tears come from. and why and how did the superstition start.

E umm Joy uh uh the reason that pearls mean tears is because the oyster when it produces the pearl in olden days cried over the irritant. It's like the pearl is produced by the oyster crying umm it secretes this uh this uh chemical uh carbon uh carbon calcium carbonate I beg your pardon uh over the irritant to try

C [hahaha

E and smooth it just like the piece of grit in the eye

L (ye:s, I know ye:s,)

E and that's how: umm that's why the saying pearls mean tears came from

L Oh I see. I see.

C It's like there are other jewellery pieces of gems rather there are other gems that are

E [that's right

C associated with different things aren't there

E [that's right

E I I I think almost every gem: um somebody's superstitious and

C [like emeralds are supposed to be unlucky aren't they

E [Emeralds are unlucky because they crack very easily. opals uh are universally considered to be unlucky if you wear an opal and um and other stones just

C [yes wonder why that is

E the same. it's just uh I think if you go around the world, you

C [ummm

E can find people superstitious about anything. In Japan they're

C [yes:

E very superstitious about six you never buy anything anything with a half dozen in

C [the number six

E Japan

C umm very difficult to buy eggs in Japan

E hahaha

C or two three piece suites. you never buy-

E [that's right

C right Anne is next in Enfield
Anne is next in Enfield. Hello Anne?

L Hello:

C Yes

L Oh Hello Mike,

E Hello Anne

L I've I've got a ring, it belonged to my grandmother, I think it's Victorian. it's umm 18 carat gold, it's thick and I've heard it called mourning ring.

E Yes

L and it's looks as- it's got umm it's carved around, and it looks like uh (above it but it's painted) black and it's got three small I think they're called seed pearls.

E That's right

L umm I don't know what to do with this thing hahhah is it of any value or

E Oh yes umm uh lots of people collect unusual things like mourning rings

C so it's mourning in the sense of funeral is it,

E yes absolutely it's a it's a kind of way of remembering a loved one.

C umm a very Victorian idea

E [I would imagine very Victorian idea, and it's similar to people

keeping a lock of hair in a locket. it's the same sort of thing

L [that's-

E That's right (something's been threaded) through it

C it's a bit morbid really isn't it

E a little yes but it's a way I suppose it's just

C [ummm

E like a photograph it's just a different way of showing you and something that you

C [umhm

E of antique jewellers that would be delighted to buy a piece like that

C But worth shopping around a bit

E [absolutely absolutely

C Anne thank you for your call,
C We'll go to Esther next in Southgate, Hello Esther,
L Hello?
C Yes.
L I had left me a hundred and fifty four pearl strand but of course uh it is broken
umm (.) the one- it's knotted each one each pearl in between each pearl it's knotted and
one of the knots has undone (.) and um it's come you know (.) but it is- uh I really
don't know umm how to how to you know to have them valued (.) I took them into
a shop, and umm they said that-- they didn't give me any valuation they just said oh
well we could clean them. ah and you know I asked them if they were of any value
because before I spent any money but I should imagine they must be worth something,
(.) umm to have been that age you see they must be about 70 80 years old I mean there
wasn't any plastics in those days.
E No there wasn't certainly and uh in fact uh only just at the start of producing
cultured (.) so you could have a natural pearl uh necklet uh there
L [yes
E and I recommend uh go along to a a jeweller that's uh a member of the National
Association of Goldsmiths (.) uhm in Southgate
L [yes
E I'm just trying to think because I was born there so I should know (.) um some
suitable jewellers maybe go to Enfield and um and try one or two of the independent
jewellers there. (.) and they should be able to value it for you? (.) and uh they should
be able to advise you on how to look after it and how to bring it back to a beautiful
condition.
C umm so how long ago (.) did uh were pearls first umm simulated
E umm they were first cultured in 1893. but actually uh
C [umm
E you couldn't buy strands of pearls until about uh (.)1920.
C umh but the phoney ones when did they get started
E [the phoney ones there were phoney ones:
between the first and second World war uhh (.) and they were made mostly in France
C [oh so that long ago
E and they weren't plastic they were glass (.) and uh they developed into plastic as the
years go by but certainly not to my knowledge anything as old as 75 or 80 years (.) is
is made imitation
C that will be the real thing
E [yeah that's right
C Esther, thank you for your call,
C Next on the line it's George from * Northam I think it is, Hello George?
L Hello there Northaw it is.
C Northaw I beg your pardon
L May I have a word with him please,
E Yes ah * I'm pleased to hear you.
L yes I've got a gold watch, () and I took it to the
E [yes
L jewellers to have a hairspring put in because uh it was belting around a bit fast you
know, and they turned around and said it need to be de- de- demagnetized
E [yes
L * and I've I've taken it to several jewellers but-and I get the same ques:tion the same
ans:wer.
E wh- uh Can I ask you what brand of watch it is.
L It's it's- the brand?
E The name on the dial
L umm
E hh.ahhah
L Oh dear.
C He's having a look
L It's block
E Pardon,
L Block something block
E Oh incablock * right but above the incablock name there
L [incablock yes
E should be a a uh another name like uh omega or * rolex
C [rolex
L No not rolex () oh dear I can't see it.
E Not to worry uhm
C Timex that's what it says on minehh.
E what I would recommend is uh most watch companies and this is why I asked the
wh- what brand is () will look
L [yes,
E at the watch and just replace it. the incablock is the- is to do with the mainspring and
it's a special kind. and if this has been damaged then () uhm they will umm
replace it straight away without any problems. * and that's why if you'd mention the
C [umm
E brand name I probably could tell you where to send it to.
C so this demagnetizing thing is a bit of a: () mystery
E it's it's uh it's something I must admit I haven't heard of () so when anybody says
C [ummm
E something like that it's always best to send it back to the maker. () they can sort it
out very quickly () very easily and put your watch back into working condition.
C George thank you for your call
1 C Kay is next in Chigwell. Hello Kay
2 L Hello I've been given a black opal. (.) and I'd like to know where I could get it
3 valued (. ) so heh yes
4 C ooh lovely
5 C I've never seen a black opal,
6 L Yes actually it's blue in colour but it's supposed to be a black opal and whether it
7 E [That's right
8 C [ummm
9 L would be worthwhile setting * (but as you just said) it's very unlucky (I )
10 E [hahaha I didn't
11 say black opals were unlucky (. ) oh uh how big is it * is it uh the size of a one p.
12 L [it's like in a oval shape
13 (. ) and there's like two little chips as well which could be made into earrings or ( )
14 E [yes
15 E right right and about the size of a one p.
16 L uhmm (. ) no I think a little bit smaller than that
17 E [but oval in shape
18 E bit smaller than that fine ummm uh I would certainly say it's umm if it's a natural
19 black opal, (.) and uh obviously a jeweller would be able to confirm that. (. ) then it's
20 worth a lot of money and you should uh (. ) set it in something like a ring or (. ) a
21 pendent or a brooch something that you'll wear (. ) uh regularly (. ) lots of
22 C [ummmm
23 E designs can be made around a black opal
24 C so a black opal still have those flecks in them do they
25 E [absolutely
26 E Does it (. ) flash green to you when you when you move it
27 L Well it has got a little bit of green in it but it's predominantly blue.
28 E Yes yes it sounds a beautiful piece * uhh why- the the
29 C [ummm
30 E reason I'm hesitating about it being totally natural is that (. ) sometimes (. ) uhmm (. )
31 because oh- black opals are extremely rare uh they have what's called a black opal
32 doublet (. ) which has a slice of another stone on the bottom uhh and these are not as
33 valuable as the true black opal. (. ) but your local jeweller will be able to tell you
34 exactly what it is (. ) um and should be able to advise you on designs etcetera
35 C Okay Kay thank you for your call,
C Right to our next caller. It's Bobby in Hadley Wood. Hello, Bobby,
Hello:
C Yes.
L Yes, well I just wondered I just heard that opals are unlucky but I've got an opal
necklace and all the opals are round, they're the normal you know the green with
orange flashing opals and it has an oval clasp and
E [yes, yeah]
L opal oval clasp and between each opal um you know on the string of of opals there's
E [yes, [yes]
L um a small crystal sort of a diamond shaped crystal um and I wondered what
E [yes]
L you thought of it. I understand it's an unusual, it's very beautiful
E [Sounds beautiful, it is very beautiful]
L Yes and probably the stones in between are um uh glass crystal, um and the opals from rubbing against each other
E [yes]
L Right.
E Because uh but it sounds a lovely piece and uh
L [yes]
E certainly needs to be kept well strung um the opal
L [yes]
E beads are quite heavy and therefore stretch the thread so it's worth looking
L [probably]
E after them very carefully.
L [I see.]
E And do they have to have any special care you know I mean apart from keeping
L them nicely in a box or
E No uh opals umm we just also recommend whatever the piece of jewellery uh
L [yes]
E wipe them after use it will just protect them against anything that might uh rub
L [yes]
E on the skin and rub on the the necklet but apart from that provided the silk
L [I see yes.]
E is strong or the thread is strong then that's all you have to do.
C And do you advise people Mike to keep individual items of jewellery in separate
boxes rather than slung together in a jewellery box
E [yes definitely yes]
E yeah and and for security reasons it's much better uhh the thief's delight is a
jewellery box because he's got all the things uh in one place and
C [yes]
E he can take them. I would always recommend you keep your jewellery separate for safety and looking after them in the best manner.
C umm well Mike thank you very much indeed for joining us here on the Fixit phone in,
E My pleasure.
C And first on the line from North Kensington it's Audrey. Good morning Audrey,
L Oh good morning uhh
E [good morning Audrey]
L Good morning Jeff. (. ) uh I have a roof garden full of potted plants (. ) and I went
E [yeah]
L away to (. ) Greece for three weeks leaving someone in charge to (. ) hh over water
rather than underwater. and I came home to a half cemetery. (. ) I won't discuss the
E [((sigh))]
C [((laugh))]
L things that I've lost. umm but they are:: a few plants that I would like
E [no]
L advice on (. ) one is a golden cypress which is brown:ned all in the centre (. ) near the
trunk .hh the other is a (high costa) rhododendron which has
E [um]
L got an early case of autumn (. ) and very few-very little green on the leaves at all
they're just rust brown I've left them on: (. ) the fuchsias (. ) all but one uhh are now
little sticks but they are now growing little green leaves again I have a yucca (. )
E [um]
L which looks like it's been scorched (. ) and a jade tree that that is is looking like uh
* how we would feel in a nervous breakdown
E [hh.]
L so what do I do: with these plants. ummmm you know uhh
E [right uh]
L (. ) wh-what do I feed them on how can I help them to recover.
E right well I think what we'll (. ) not talk about is feeding them at the moment because
the problem is going to be the roots. (. ) they have died through
L [yes]
E overwatering (. ) underwatering: emmm th- therefore (. ) what you've got to do
L [underwatering]
E is actually get some new roots grow:ing before you actually start doing any heavy
36 feeding. (. ) because if you- if you actually put too much feed on them, you will scorch
L [yeah]
E the roots (. ) uhhh so (. ) what we've got to do is have a look at the roots
L [I see]
E ahah it doesn't matter which one it is, have a look at the roots (. ) see see if there are
38 any live roots there, and .hh gently soa:k the containers if there are live roots there, *
L [um]
E overnight probably would be the best and then let all the water drain away, * and
39 hopefully (. ) they will start to come back. put them in the coolest part- that- you can
on your roof garden; and * it it's just keep fingers crossed and once the roots start
L [yes yes]
E to come away then feed them with umm not at this time of the year a high nitrogen,
because that would put too much leafy growth on- and so you want a potash fertilizer
L [um]
E potash.
L yeah. * uh one of the tomato feeds
E oh tomato feeds oh yeah (. ) right okay::
L [yeah]
E @that would be ideal that
L um well what about this yucca, I mean it was in beautiful shape and I had it for
years and it was just beautiful and now it's got scorched leaves

E [it's a-

L that's right it's a-

E I mean I'm not- they're not going to be replaced are they.

E they're not no this is one of the problems. they're never going to be replaced. ummm

L you will have to start building up new plants (.) all over again

E what you might be able to do is to salvage (.) some of them by taking cuttings and

L starting new ones which would probably be better than trying to get the old ones to

E root away again.

L @oh damn

E If you've got any material that is suitable for taking cuttings from then have a
go: (.) you will start off with a nice young plant which will get away quicker

L [umm

E than the old one trying to re-establish itself through a thick

L [umm

E root ball and uh (.) memories.

L [what

L what about the golden cypress I mean will that recover, (.) I mean most of it's green

E [if all the centre has gone] then hhhh. I'm hoping it will

L be all right because the tips are still going.

E [the tips are still going]

L yes (the tips are still going)

E [if the if the sti- tips are still going, uh then again * get the

L water back into there, but without overwatering get the roots going and just keep our

E fingers crossed it's it's a shame it's just that uh it's been a very hot ti:me

L [yeah

E and next time ask somebody different to look after them I guess, ( )

L [it is always a problem

E C it is- it is awkward though isn't it. because if somebody kind enough to actually

L come round the fact that they haven't given the plants enough water

E [yeah

C not really have ( )

E [training in the skill of doing it is probably essential because looking

L after any pot plant container grown plant requires uh skill unlike if you're doing it every

E day you know that certain plants need water every

L [yes that's right

E day and other plants need it twice a week (.) three times a week depending on how

C it's growing like

E yes it's quite a responsibility taking on someone

E [oh yes yes

C else's plants ( ) isn't it

E and when you think that some of the plants could be quite a size if you had to

L replace them it would be a a lot of mo:ney

C yeah true we'll go to Linda next who's in Chesham
Hello Rosemary,
Hello good morning.

E good morning Rosemary

L umm I've got a couple of questions if I may very quickly. (.) the first one is about

E [yeah.

L a grapevine I've got (.) this this summer it has massive grapes on it (.) and they've

E [yeah:

L got (.) sort of mould on it and I try it the garden not to use * umm ( ) as I can um

E [dee-

L so that's why I want to know whether I should be spraying it I hope to make wine

out of the grapes. first of all, and secondly should I start watering by watering can.

E [right

L right is it- where is the vine first of all.

E it's it's growing (.) in in the ground umm against the wall and over a tree:

L right so it's fairly rampant (.) easy to get at all- of the branches.

E [yes

L uh no

E no.: (.) right so spraying it is going to be a little bit of a problem, so you're going

to have to have something that's systemic to actually get into the leaves that

you can (.) get to: and then it will go through

L [right

E the plant itself. and so you want something like

L [right

E Benlaid .huh or ( thiofinitemethyle)

C hahaha

L [(goodness)

E (tall one) that ye:s um

C can you spell that Rosemary

L well I've got Benlaid

C that was the easy one

E [you've got Benlaid well yes (.) because if you don't want to use strong sprays those
are the only two that I would recommend that you use.

L right

E and umm the watering situation is a difficult one because it you actually start

overwatering at this stage you could split the fruit.

L I see

E so very careful watering would be advised especially as it's been so dry but are they

splitting at all,

L no not at the moment

E the fruit is still all right. so then give them a

L [( )

E careful watering two or three gallons:, probably and then mulch the surface and that

will help retain the moisture that's in around the roots (.) and hopefully it will be all

right

L mulch it with what

E ahh well what have you got

L I don't know

E grass mowings?

L um well ( )

E [no not at the moment not at the moment okay forest bark

L forest bark.

E yes go in for forest bark not for peat nowadays because peat is getting scarce
53 L oh really
54 C [ohh
55 E yes
56 C ecological ( )
57 E [we must [that's right yes
58 C did you have another question Rosemary,
59 L yes it's about a melon (.) uh that I'm trying to grow
60 E [umm [right
61 L (.) um I heard somewhere (I think it was last week on your programme) that I should
62 be um um fertilizing the flowers and I was just wondering whether I could cross-fertilize
63 it I've only got one melon umm I (saw a bee at it ) the other day I don't know whether
64 I should actually be doing it myself
65 E [shh.
66 E yes well you can do it yourself you can get a little piece of cotton wool or very fi:ne
67 brush and you can tell the difference between the male and female plants because the
68 female has got the little fruit there already (.) whereas the male it just sticks
69 L [umm
70 E out there so I should get hold of your little bit of cotton wool and go along but if
71 the bees have already been doing it it's amazing what they do .
72 L If it's just one plant which it is
73 E It doesn't make any difference
74 L would it have male and female plants on it-
75 E It should have male and female plants on there flowers
76 L [good
77 E on there
78 C Right Rosemary thank you for your call
C Brian is next in Walthamstow Hello Brian

L Good morning

E [Good morning Brian (pause)

L Oh perhaps you might be able to help me I'm trying to lay a lawn over an old lawn * the ground of the old lawn is very hard and stony (. ) Now I've been out trying to

E [yeah

L get topsoil (. ) I've had no luck with topsoil but someone sold me ( lay ) peat and

E [yeah

L sand. * now will this wear will this give me a lush lawn.

E not as good as a topsoil now you've got a lawn already there so you've got a fair amount of turf already (. ) on the site .

L yes yes.

E now I would try to utilize that as much as possible (. ) and a way of doing it would be to kill off all the grass that you've got there to start with (. ) and all the

L [umm

E vegetation underneath using something like tumbleweed or Weed-all to get rid of the uh the grass (. ) and weeds. (. ) and then rotovate that or dig it whichever you fancy

L [yes

E doing, and incorporating that into your surface and then (. ) if you want to then mixing in organic matter such as peat or forest and some sand now you say is it good draining soil,

L it’s a- unfortunately it’s a bit too good

E it’s too good (. ) therefore forget the sand

L [( through)

E yeah eh forget your sand and you want to get as much organic matter in there as you can peat and forest bark to hold moisture in would be important. But I would try and get as much (. ) decent soil in there as well.

L right thank you (pause)

E okay,

L yes thanks

C [ well another satisfied customer

E good

C Brian, thank you for ringing in,
C And it’s Sid now in Forest Gate. Hello Sid,
L Hello there
E Good morning Sid,
L Good morning uh Jeff I’ve got a problem what it is basically is elderberry and sycamore which have rooted under the foundations of the house. (.) and although I keep cutting them down as soon as ( ) cutting them down they start growing again
E [ooh]
L I’m wondering how I could possibly get rid of them
E yeah right couple of things you can actually do:: is to (.) I would say cut the elderberry right down to the ground and then to spray it with some tumble weed as the new shoots come. (.) Two or three sprays of the tumbleweed should get rid of the elderberry.
L umhm yeah,
E ahh as far as the sycamores go, how big are they
L ahh well the roots are pretty strong I should say roughly about three inches in circumference
E so so they’ve started * coming away there. You could do the same with that
L [(they’ve really rooted)
E by cutting it down, and putting in either tumbleweed, (.) or some other weed killer uh which is gonna be strong enough. I’m just trying to think now which um one would probably be (.) the best of those (.) um the um oh I had a blank last week and I’ve got a blank today
C hhh. well don’t look at me I can’t help you
L yes yes I know I look at Therese no she doesn’t help ah but tumbleweed will do it
E it will kill the sycamore
L into the top of the (@tumbleweed)
E and then-
L [don’t dilute it down just use it at full strength
E just use it very well no dilute it fifty fifty.
L fifty fifty
E yeah and then that’ll help it get into there and uh: hopefully it will get down into the roots. you could put some- (.) thing over the top just to stop it unmm being washed out you know a bit of clay or uh plasticine (.) something like that to bung the
L [yeah
E holes up with. and and that will probably do:
L okay right thank you very much thanks for your advice
E okay right
C [good luck Sid thanks for ringing in
C We'll go to Andrew now calling from Crystal Palace. Hello Andrew,
L uh good morning Therese good morning Jeff,
E good morning Andrew
L uhh now I've got um some (. ) salvias they're not the normal red varieties they're ones called (Hall of Fame) I believe
E umhm
C now uh I must interrupt you for a moment Andrew I had a mental blank for a moment and I looked at your call and the fact that you're talking about salvias and I thought it said saliva
L Oh God hahhahah
C ((laughter)) and I thought my God what's a saliva plant
E Is it the typist on the other end
C No no it's me I can't read I can't read ha ha sorry to interrupt you Andrew
L That's okay anyway uh no They're not of the normal red varieties They're um salmon
E [no
L pink and they're got all different sorts of colours on them ( )
E Yes some very nice ones of them about at this time
L Yeah and um these ones have actually produced some seeds. (. ) now I wonder if I can actually grow these seeds and what plants am I likely to get
E hh.umm you'll probably get quite a mixture because some of the salvias have been uh grown over the last few years. (. ) and um they've:: done (. ) quite a bit of crossing to get um these different colours. (. ) now if it was an um I can't remember if
L [yes
E it's an F1 hybrid or not. (. ) uhhh if it is then you'll get some complete throwbacks to the ordinary salvias and other strange (. ) mixtures uhh even with the ones you've got if they're not hybrids you're going to get (. ) a mixture of colours again. but it's always worth having a try you might come up with something really good and then you'll be selling your salvia seed.
L Oh I see right so
E [So have a go it's worth it
L It's worth having a go
E But if you want to keep the same: pattern as last year then also get hold of the same seed that you had last year it is possible you will not get the same.
C Right Andrew thank you for ringing in,
C but now it's Mary on the line from Hampton Hill. Hello Mary,

L  hhhello oh good morning (to both of you )

E  [good morning Mary

L just two quick questions. (.) one is I've got some tomatoes in the growback now

E  [yeah

L  those big leaves: I'm sure that takes some of the nourishment away,

E  [no

L will it harm the plants

E  [oh no leave the leaves on.

L  ohh

E  [if the leaves are nice and green leave them on don’t take them of.

L  ohh * well I've snapped off quite a few will that harm them

E  [only if-

L  wh'wh' I've upset you now haven't I. (.) oh dear what

C  [ha,hhh

E  [you're doing is you're taking out the manufacturing part of the plant and that's where

E  [oh

L  [oh dear what

E  [in this hot weather (.) uhh what

L  [oh [oh dear

E  [you will do is you'll make them ripen up quicker, (.)

L  [yes:

E  [but they're not necessarily going to have all the goodness

L  I see oh dear so it's best to leave them on only I didn't know they seemed to be

E  [that's right

L  growing so marvellously only they're all bunched in together you see and I thought

E  [I'll take off some of those uh (.) leaves, get them a bit more air a bit more space:

L  a bit more light

E  [Have you taken the side shoots out,

L  I have indeed yes.

E  [well if you've done that then there should be plenty of space around

L  them, what variety of tomato was it

E  [I see

L  [oh dear I think it was money-

E  [ohhh don't no if it was moneymaker don't mention it ohhh ahh don't

L  [oh

C  [why why

E  ahh you want to go for something like Gardener's Delight next year

L  that's what I thought

E  [does everybody go for moneymaker

L  oh moneymaker's so easy to grow: (.) but the flavour

E  [yeah

L  [you want to try Gardener's Delight next year it's only a lovely

L  little (.) uh one but it's so nice

E  [is it

L  [is it

E  [oh yes

C  [heard of Turkish Delight never Gardener's Delight

L  [(oh thank you

E  [oh yes

L  the other one is I've just got a it's not a very big garden it's a Victorian (.) cottage
garden so I don’t know whether that has any bearing on it but (. . .) practically every plant
that I (lift up or go to dig) (. . .) they’re are earthworms (. . .) hundreds of them everywhere
E good you’ve got some good soil.
L good soil (. . .) cause I though perhaps it’s ( . . .)?
E yes:
E no no not necessarily if there’s plenty of earthworms working in there there should
be loads of organic matter in there they’re having a whale of a time,
L Really
E yes I encourage earthworms in my soil
L do you know that earthworms are little little things ummm
E [have you got little umm centipedes running around as well (. . .) and beetles or have
you got
L umm I have seen a couple but these are the sort of hardbacked things * come in the
house and
E ohh
C ohh
L they come in the house
C wood lice
E wood lice and pillbugs
L wood lice I don’t know is that the same thing
E yes what you’ve got you’ve got a lot of organic matter in your garden enjoying the
feast that you’re providing for them (. . .) and so: I shouldn’t worry I should enjoy having
them there if you want to keep the wood lice out then you can get a little dust (. . .) that
you can put around your door entrances uh and that will keep them at bay otherwise
just enjoy them they’re there enjoying life if they’re not harming the plants don’t worry
about them they’re probably doing more good-
C right well Mary thank you for your call
C And it's Wendy from East Moseley. (. . .) Hello Wendy.
L Hello. (. . .) good morning
E [Good morning Wendy.
L emmm I've got some heathers that I've been growing for a number of years, (. . .) and
E [umhm
L now five (. . .) are blooming beautifully (. . .) luscious leaves and everything. (. . .) two
E [yeah,
L of them have started to go brown in places, (. . .) hhh in another part of my garden I've
9 got three heathers and they've gone completely brown and I'm wondering what
10 happened.
E Browned off with the weather. (. . .) ohhhh sorry we have
L [hehehe
C [ohhh
E to have one a week That's that's it you've had it ummm right they've gone brown:
15 from the centre or from the tips back.
L I think they seem to have gone from the tips in the ones that are part green part
17 brown. (. . .) the only thing (. . .) I did wonder is whether it is the cat
E [yeah
L ahh (. . .) now I was going to ask if you had any. (. . .) umm
E I'm just wondering if they've been naughty have they been sitting in the middle of
22 them,
L I have caught one trying to do that and I I put some sticks over one to stop him
E [ummm
L doing that um I haven't seen him do it the ones in the front
26 E Right th' th' there might- are there broken twigs in the bottom there, has it physically
27 broken it.
L No
E oh then that's all right then so you're all right there, so what you want to do is to
cut the tips off, (. . .) and check that there aren't any pests there (. . .) to start
L [ummm
E with um it's unusual that (. . .) they (. . .) have too many problems like that, give them
33 a mulch of something gritty probably, if it- what type of soil have you got
L ummm well the back is- well I don't know: it's fairly normal the front is rather
35 E [is it- heavy
36 L sandy.
E It's sandy
38 L And I put plenty of mulching and um peat in (. . .) before
39 E [yeah
40 L I and I've also added mulch since
41 E and they half of them are okay and half are
42 L no those the ones I've added the mulch to the sandy they've gone:
43 E they've gone
44 L ummm
45 E @ah I wonder if there's a pest in the roots there somewhere (. . .) I would probably
46 want to have a lift them up and see if there's something happened to the root
47 system, because it seems as though with because it seems it might be that with
48 L [ummm
49 E those then. (. . .) um I think it's you know it's one of those look see we've stopped the
cats to start with, (. . .) give them a watering and some mulch, if you can dig
51 L [hehe
52 E one of the dead ones up see if there's any sign of any pest or if all the roots
disappeared then there’s something at the roots. * and you would have to put a spray
 E or something down and what we’d probably put down (.) to do a decent job would
be something like hexile which is a powder and you mix it up and that (.) would be
poured in around the base and that you know if there are any grubs or anything that
would get rid of most of them. (.) I think that’s what I
L [ahh
E would do at the moment I can’t think of anything else (.) that is causing the problem
C right well thank you for your call Wendy, we’ll go to Mark next
Hello Mark,

Hello good morning Mark.

uh Therese can you tell me, if there is a weed killer that’s not harmful to pets.

eight right my answer is going to be uhh this (.) any weed killer that you use in a garden

has had to go: (.) uh through specific uh tests to make sure that it’s okay for use by:

amateur gardeners. (.) Therefore these tests are fairly stringent (.) and if you follow the

instructions on the packet? (.) to the letter, (.) it will tell you

[yes]

e that you can put pets on the (.) garden once the material is dry:, and that should be

[yes]

sufficiently safe. * uhh but that’s (.) that’s all I dare say, *

[@I see]

because they have undergone these tests the the recommendations are laid down.

umhm

but but what what did you want to get rid of

well actually I’ve: used the weedall in the past (.)

[yeah]

and now the last couple of years we’ve had the pets: and of course my wife wouldn’t

let me put anything down: (.) so I’ve got the garden full of weeds.

[no]

right well if you use weedall, uh it will as soon as it’s in contact with the soil it’s

neutralized, once it’s dry on the plants. it is harmless to::

[um]

e the the cats and that around there as it says on the instructions on the packet

[( )- yeah]

that’s quite safe.

as (.) far as we know: at this moment in time, but as (.) always happens with

pesticides of some sort or another (.) something is being found out about them all:: the

time.

yeah tell me something I heard on the television on (Mike and Madgie) that you can

use ordinary salt * especially for dandelion. I’ve tried it (.) it works

[yes]

perfectly it’s killed everything else as well:

hahahahaha. oh dear

yes it’s non-specific (.) uh yes salt (.) p-petrol’s another good one as well if you

happen to spill that: on lawn, you know if you’ve forgotten to fill your (.) um

petrol-driven (.) uh mower and you spill that on they are non-specific

[yes]

so do be careful where you put them they just want to be on the (.) crown of the (.)

[I see]

plant and not anywhere else otherwise it will bur::n

so handle with care

even fertilizer in this weather will burn.

ummm right Mark thank you for that call.
C Okay to Griff next who's calling from Twickenham. Hello Griff,
L Hello good morning
E [good morning Griff
L umm we have a cienelphus (.) eh which we planted about two years ago. (.) ehh it
grew very vigorously to some eight feet hi:gh. (.) flowered about two months ago and
afterwards we uhh we pruned it. (.) and since then heh. the leaves have all turned brown
E [yes
L Yes (.) yes this is what does tend to happen with the cienelphus because it puts on
this lush spring growth with the flowers, (.) and you have to prune it as soon as
E it finishes flowering, otherwi:se it- (.)
L [well it gets out of hand
E It does get out of ha:nd yeah you can imagine that it’s put on two foot (.) to three
foot of growth last year, and you add that to it it’s six foot this year, and next
L [that’s right
E year it’s nine foot. (.) So it’s as wide as it is high
L [that’s right
E so yes you did the right thing: unfortunately the weather this year has prov:ed to be
a little bit too hot for them. (.) and so we’ve got a little bit of brown growth on them.
cut off the brown growths, back to hopefully some live wood, (.) try and protect it from
the sun if possible which is- means (.) some form of uhm plastic uhhh open wea:ve
plastic not uh ummm polythene * covered
L [What is that kind of a netting, or is it a-
E Yes (.). yes just to help shield it from the sun (.)
L I see (.). yes
E And as it’s seven feet high that’s possible but you know if you’re talking about ten
L [yeah
E twelve foot high (.). difficult difficult
L Yeah uh one other quick one if I may, (.). uh we have a a laylandy which is: um well
about ten feet high and I usually try to cut this time of the year a couple of feet
E [yes
L (.). from the- at the top (.). and uh trim the si:des is
E [yes
L this the right time to do it now.
E yes yes
L With with the weather as it is,
E umm the the problem is always the weather isn’t it, and um if if jobs have to be
done I say if you’ve got the time to do it (.). an::d you can get out and do it now, do
it now because if (.)
C If you’re waiting for a change in the weather you could (.)
E That’s right as I say you could be here until November December and then we’ve got
frosts causing problems.
L [yes yes
E So: it’s a risk we have to take
L [right
C hh. (.). okay Griff, thank you for ringing in,
C Mike is next in: Chiswick. (.) good morning Mike.
L Hello good morning Therese good morning Mike another gorgeous day.
E good morning Mike yes
L um I hope you’ll consider this a gardening question, it’s probably a borderline case,
umm I don’t want to grow something I want to get rid of it (.) umm I contemplating
E [oh that’s all right
L buying a house a new house well a secondhand house actually, (.) it’s surrounded by
trees, it’s got a red clay tile roof, I say a red clay tile roof you can hardly see the roof
because (.) and there there’s where my problem is it’s covered in a green well I want
to say moss but it doesn’t appear to be a growing moss, perhaps it’s spores
that have fallen down from the tree: (.) umm
E [that’s probably what it is
L in a nutshell I want to get rid of it I can’t I couldn’t live with it, (.) and I certainly
can’t afford three or four thousand for a new roof.
E no
L Is there some simple way of me getting rid of this green (.) something or other ( )
E [the
L green yes the green slime which you’ve got on the roof which is nice and dry: at the
moment,
L that’s it you’ve hit the nail on the head you could almost brush it off at the moment
E uh yes that’s your first (.) thing, there’s not going to be a chemical that will do your
job properly. (.) you’ve you’ve got to do it physically. so it might be of uh (.)
L [ahh
E task you might have to get some scaffolding and some proper (.) roof ladders, but:
one way of doing it would be to brush it and then to get a power sprayer
L ( )
E which will go up to at least a thousand pounds per square inch. and I would start at
the top if you can and do it downwards because if you did it upwards you might get
(.) water being sprayed up underneath the tiles. (.) so it’s uh
C not an easy job is it
E it’s not an easy job
L it doesn’t sound like a very easy job does it.
E no but the chemicals that you’re going to put on there: umm are going to * they’re
going to clear it up a fair amount, but not going to give you ahh. a satisfactory (.) job
either
L well there’s no way really I could (wirebrush) every tile on a (thumping) great big
roof:
E no that’s that’s why uh a power sprayer would be the best thing.
L just just uh just plain water,
E just plain- you can get uhm soaps (.) that go into it and they will help a little bit but
it is the actual the physical force of the water that does the job you know they uh clean
the um (.) walls and un buildings with it.
C umm hope the tiles survive
L but I mean this this green uh (.) this green moss-like
E [@they’re thick ones I hope
L stuff is (.) sort of embedded in: it’s growing almost I
E [that’s right yes
L wouldn’t think a power water (would though )
E [it’s surprising what a power- uh I say if you get one
at over a thousand pounds per square inch there is a lot of pressure there. it’s not a
toy.: it’s a physical brute force will get it off and that’s what I would use (.) having
done slippery uh paths with it (.) It’s a brilliant tool. Much better than a chemicals
C umm I can't remember. I think Mike said he didn't like the look of it but we've
had these questions before in our DIY section of the programme and our DIY experts
have maintained that it's not actually harmful at all. Having moss on the roof,
oh no it isn't so long as it doesn't-
C [it's a bit of insulation if anything
E well yes so long as it isn't physically blocking umm waterways you know you
know if it's physically blocking um water chutes down then you could be getting
problems there. and if it starts to lift but yes we'll go on to gardening questions.
C [umm
E D-DIY blokes hahh.
C ((recites phone number)) is our telephone number
C: And we’ll go to Ruth next who’s in Barnet. Hello Ruth,
L: Hello good morning
E: [good morning Ruth]
L: I wonder if you could help me Jeff. I’ve got a problem I think it’s rather serious it only to my knowledge it’s appeared in the last three days, (.) and I’ve got a rather large crack in the centre of my lawn (.) hhh and I- my lawn is usually very wet indeed in
E: [umhmmm]
L: in this garden right up to the middle of May: (.) it’s very deep, two
E: [right]
L: and a half feet, (.) (measured it),
E: .hhhh you’re on clay
L: yes,
E: yes. (.) This is going to be one of problems this year we had it in ’76. and on clay soils, and in fact this is partly a DIY: one as well because (. ) houses built on clay soils especially new ones will have lots of cracks appearing (. ) because of shrinkage (. ) and this is what’s happened in your lawn it has shown the case (. ) quite clearly, that as the clay shrinks the water comes out of it and it shrinks (. ) GREAT BIG cracks appear * and I suggest if this is happening to people, they get in here we’re going to go back to organic matter again, and grit and sand into these cracks because I’ll tell you what (. ) if you want a nice lawn uhhuh it’s gonna save you having to (hollow tine) it during the wintertime, because the cracks are appearing naturally and you can get the organic matter right down (. ) further than you would with a hollow ti:ne.
C: save you whatting it
E: hollow tining it.
C: what’s that
E: making taking little cores out of the grass during the the wintertime and then putting organic matter in there: (. ) and uh grit
C: [oh umm] [umm]
E: so I: would that’s what I would do is to (. ) get as much organic matter into those cracks (. ) because that would help retain even MORE moisture and get an even better root run for the plants: around it.
C: right.
E: because you’ve got to conserve moisture.
C: Ruth, thank you very much for ringing in,
C: Right to our next caller and it's Derta on the line in Battersea, Hello Derta,
L: Hello,
E: Good morning Derta.
L: hhh. I'm a bit nervous hehehe
E: So am I don't worry
L: uhhuh we have planted a little apple tree. It is called a Lackson superb. (.) and last
E: [yes,
L: year we had a couple of (.) apples on there, but the cat knocked them off. but this
E: year, we've got two (BEAUTies on there) size of a tennisball. What I want to know is,
L: hh when are they ready to pick. (.) and a:re they edible.
E: [apples,
L: oh yes yes it's umm it wouldn't be called Lackson-
E: yes
L: Lacston superb if it wasn't edible. yes it is a very nice apple, a:nd it is ready to pick.
E: (.). now h.uhm (.). this time (.). this year it's gonna be difficult. (.). because saying
L: months emm is going to be very difficult because the apples will be ear:ly. (.). than
E: [umhm,
L: what they normally are. (.). so (.). the test is you want to go along and just hold the
E: apple in your hand, and just give a little (.). quarter
L: [umhm
E: turn and if it comes off (.). then it's ready.
L: [umm
E: okay
L: ah yeah
E: ahh if not-
L: that could be anytime now.
E: nno:. yes-whhhhh @I see he says no. has it got- it hasn't got any colour on it yet..
L: uh they- start getting a little bit of colour now:. ( )
E: [right well be a little bit more patient
L: then, and let let some more colour get on it. probably leave it another month.
E: [ahha
L: ahh but it's: uh it's gonna be hit or miss with apples this year they'll be dropping
E: off before we're ready
C: I hope you get to it before the cat does this time Derta,
E: yes: keep the cat off.
C: Cathy's next in Southgate
Cathy's next in Southgate

Hello Cathy,

Oh hello,

Good morning Cathy

Good morning Jeff. I have got two problems with my runner beans: umm they're looking very well and healthy, but m-m-many of the beans are growing curly. (.) instead of straight.<now not all> of them but some of them are forming figures of eighthh.

around the vines. It really is very peculiar

yes

yes. right well the problem there:, could be twofold it could either be aphids, which have got in and made it uh * sort of go kinky, (. ) th-hh. the other ohh.ne is

don't use the sprinkler on: your runner beans:, (. ) if you're going to water them

no

no

just pour the water around the roots try not to get it on the foliage or the flowers.

and I will put it down to lack of water.

yes of course I've not been using the sprinkler because we're asked not to.

no

[I have been-]

no

[I'm going to put it down again it is the lack of water and this this sort of situation]

[I'm going to put it down again it is the lack of water and this this sort of situation]

and runner beans are prone to this. they need lots of water around their base. to help them set * they need- your's are setting all right but they're not growing and it's the sheer heat of the sun:. it's a shame (. ) we like the weather, but it does cause problems.

I know, we've had so many questions where the answers have been it's the weather.

it's the (ants the lice ) it's the soil again isn't it. and the weather

and the sun yes right Angela's next in
Hello Angela,

good morning Angela.

hi I have a houseplant. um which I think- it's called a money plant. (. ) now I think

it may be in-infested. * umm I was watering it a week ago. and I spotted kumh.
little white things crawling about in soil

in the soil (. ) now are these little- (. ) are they gr:ubs, (pause)
what are (they)

[uh about (. ) quarter of an inch half an inch long,

oh they're (.) s- long and thin:. and white. quite small.

yes

[uh

like a housefly, ( eggs or)

not a housefly (.) no th-uhmm fruit fly. (.) something like that that's probably laid
its eggs in there because you've had the soil probably a little bit too moi:st. and they
like the conditions there. (.) so they've laid their eggs in there, and have got uh like
little gnats flying around in the pot

uhhh no but um clusters of little white like eggs forming at the the the base of the
plants. (pause)
humhh (.) little white eggs

yes they look hmm it's difficult to explai:n. somewhat frothy (.) if you know what
I mean

somewhat frothy (. ) @well it's- ye:s. have you got slugs in there as well,

I don’t know I haven't looked

haven't log:ked. anyway I should just get ummm let's see what would we use there
uh a liquid derris? (.) and put that into the pot and see what happens

to the: little wiggley things and see if they curl up and die. (. ) and if the little eggs
are there I would take them out and have a look see if they are any slugs there
otherwise * try not to water so much.

sounds as though Angela might have a lot in there, all wildlife

WILDLife, in your pot-, see you can have them anywhere wildflowers in the garden
or in a pot.

ye:s. Angela thank you very much for your call, and Jeff Hawkins. thank you very
much for joining us,
APPENDIX 5. List of the Turn-type classifications for the FX1 sample.

Code:

CS= Chairman’s Short utterance  
CM= Chairman’s Multi-utterance  
LS= Layman’s Short utterance  
LM= Layman’s Multi-utterance  
ES= Expert’s Short utterance  
EM= Expert’s Multi-utterance  
Bold signifies model stage identifiers

<table>
<thead>
<tr>
<th>Interactions</th>
<th>GJ</th>
<th>GE</th>
<th>GL</th>
<th>GP</th>
<th>GV</th>
<th>GC</th>
<th>GA</th>
<th>GG</th>
<th>GM</th>
<th>GY</th>
<th>AR</th>
<th>AL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>CS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>LM</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>CS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>CS</td>
<td>LM</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>LS</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>AS</td>
<td>AH</td>
<td>AT</td>
<td>AC</td>
<td>HH</td>
<td>HT</td>
<td>HJ</td>
<td>HM</td>
<td>HC</td>
<td>HP</td>
<td>HR</td>
<td>HV</td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td>CS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>CS</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>LM</td>
<td>LM</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td>ES</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6. List of the Turn-type classifications for the FX2 sample.

Code:

CS = Chairman’s Short utterance
CM = Chairman’s Multi-utterance
LS = Layman’s Short utterance
LM = Layman’s Multi-utterance
ES = Expert’s Short utterance
EM = Expert’s Multi-utterance
Bold signifies model stage identifiers

Gardening

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
<th>G10</th>
<th>G11</th>
<th>G12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>CM</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>CS</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LM</td>
<td>ES</td>
<td>LM</td>
<td>LS</td>
<td>CM</td>
<td>LS</td>
<td>CS</td>
<td>LM</td>
<td>LM</td>
<td>EM</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>LM</td>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td>EM</td>
<td>LM</td>
<td>EM</td>
<td>ES</td>
<td>LM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LM</td>
<td>EM</td>
<td>LS</td>
<td>LM</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>LM</td>
<td>LS</td>
<td>EM</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>LM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>CS</td>
<td>LM</td>
<td>CS</td>
<td>LM</td>
<td>LS</td>
<td>EM</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LM</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
<td>CS</td>
</tr>
</tbody>
</table>
### Hardware

<table>
<thead>
<tr>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
<th>H6</th>
<th>H7</th>
<th>H8</th>
<th>H9</th>
<th>H10</th>
<th>H11</th>
<th>H12</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>LM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>CS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>LS</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>CS</td>
<td>CS</td>
<td>EM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>CS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
</tbody>
</table>
APPENDIX 7. List of frequent non-task-specific words for cluster analyses.

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th></th>
<th>I</th>
<th></th>
<th>so</th>
<th></th>
<th>about</th>
<th></th>
<th>some</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>actually</td>
<td>32</td>
<td>if</td>
<td></td>
<td>62</td>
<td></td>
<td>in</td>
<td>63</td>
<td>thank(s)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>all</td>
<td>34</td>
<td>is</td>
<td></td>
<td>64</td>
<td></td>
<td>it</td>
<td>65</td>
<td>the</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>also</td>
<td>35</td>
<td>just</td>
<td></td>
<td>66</td>
<td></td>
<td>know</td>
<td>67</td>
<td>then</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>any</td>
<td>37</td>
<td>like</td>
<td></td>
<td>68</td>
<td></td>
<td>line</td>
<td>69</td>
<td>there</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>are</td>
<td>38</td>
<td>might</td>
<td></td>
<td>70</td>
<td></td>
<td>morning</td>
<td>71</td>
<td>think</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>around</td>
<td>39</td>
<td>my</td>
<td></td>
<td>72</td>
<td></td>
<td>think</td>
<td></td>
<td>this</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>be</td>
<td>42</td>
<td>new</td>
<td></td>
<td>73</td>
<td></td>
<td>to</td>
<td></td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>because</td>
<td>43</td>
<td>next</td>
<td></td>
<td>74</td>
<td></td>
<td>no</td>
<td>76</td>
<td>um</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>bit</td>
<td>44</td>
<td>not</td>
<td></td>
<td>77</td>
<td></td>
<td>next</td>
<td>78</td>
<td>we</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>call</td>
<td>46</td>
<td>of</td>
<td></td>
<td>79</td>
<td></td>
<td>of</td>
<td></td>
<td>well</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>can</td>
<td>47</td>
<td>old</td>
<td></td>
<td>80</td>
<td></td>
<td>of</td>
<td></td>
<td>what</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>do</td>
<td>48</td>
<td>on</td>
<td></td>
<td>81</td>
<td></td>
<td>old</td>
<td></td>
<td>when</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>get</td>
<td>51</td>
<td>one</td>
<td></td>
<td>82</td>
<td></td>
<td>on</td>
<td></td>
<td>which</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>give</td>
<td>52</td>
<td>or</td>
<td></td>
<td>83</td>
<td></td>
<td>or</td>
<td></td>
<td>will</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>good</td>
<td>54</td>
<td>out</td>
<td></td>
<td>84</td>
<td></td>
<td>question</td>
<td>87</td>
<td>with</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>got</td>
<td>55</td>
<td>problem</td>
<td>86</td>
<td>yeah</td>
<td></td>
<td>question</td>
<td>87</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>ha</td>
<td>56</td>
<td>right</td>
<td></td>
<td>88</td>
<td></td>
<td>yeah</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>has</td>
<td>57</td>
<td>right</td>
<td></td>
<td>89</td>
<td></td>
<td>right</td>
<td></td>
<td>you</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>have</td>
<td>58</td>
<td>ring</td>
<td></td>
<td>90</td>
<td></td>
<td>your</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>hello</td>
<td>59</td>
<td>should</td>
<td>91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>how</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 8. Transcriptions of the Computer Advisory Phone Consultations (CC).

CC1

1 E  (Advisory)  "
2 L Hello. (.) hummm * I've had a bit of a problem with the uhm * the EUCLID
3 uhmm (.) E-mail service. (.) I wondered if you could help me.
4 E  [Yeah,
5 E What kind
6 L Ummm (.) when a new message comes through. * humm * well- can- will the screen
7 automatically show (.) several messages or will it just relegate the previous message to
8 the filing system.
9 E Ummm * I'm: not quite sure what you mean
10 L  [Well I'll tell you what happened]
11 L I'll tell you what happened (.) hh Somebody sent up an E-mail message which we've
12 E  [yes
13 L been waiting for. * a::nd we (.) had no receipt- uhh uhh knowledge of ever receiving
14 E  [yes
15 L it. (.) No:w ahm when we went back into the F:ile (.) to look around the date (.)
16 y'know the list of messages that had been sent
17 E You used the SCANALL command.
18 L Yeah. * We discovered it
19 E  [yeah
20 E Right okay so somebody had actually accepted it without your knowledge * uh
21 somebody must have uh logged on and actually selected that (.) option * to to get that
22 file. (pause)
23 L Uhhm well this is what I'm trying to find out.<You see three of us use this machine.
24 Now
25 E Yeah I think one of- one of the other persons has logged- gone into Mail: (.) and not
26 realised they've actually accepted the message (.) then
27 L  [they've just gone on with their own business,
28 and. * yeah I:
29 E  [Yeah without realising it<yeah well they could have gone into Mail had a look
30 at it didn't realise- probably didn't realise they've accepted it.(.) but it is it is actually
31 in the Mail system now
32 L Yeah
33 E Uhhm now * you can do SCANALL: that's S space A short for SCANALL
34 L  [yeah
35 L Yeah I know that I get into it
36 E  [You can get into ( messages ) if you if you want to look at that
37 one you just type the number of it. Say it was number ten (.) just do ten (.) and then
38 L  [yeah
39 E press return that will give you- that Mail message
40 L Yeah but because I'm not the only person going in to: using Mail service (.) Uhhmm
41 E  [umhm
42 L and the communications are not- (.) as good as they should be You know what
43 people are like they want to get on with their own jo:b (.) I
44 E  [Yes
45 L don't want this mistake to happen again (.) Is there any wa:y that (.) we can
46 E  [Right
47 L indicate (.) that the (.) message has been recei:ved
339

48 E No. (.) no there’s nothing like that, uhh well I mean * if it- if it’s in the SCANALL
49 (list) it has been received (that ) you can’t you can’t do any more than thaat:
50 L [Yeah I realise that
51 L But but it’s a long list you see and I mean I (.) because if someone else might take
52 a message into Professor G~ I’m not to knw w (.) so:
53 E [Right (.) I mean what what we recommend we actually
54 do have a policy on this (.) sort of thing we recomme:nd (.) uh that people do not share
55 IDs particularly where Mail is concerned. * there there is no problem anybody (.) who
56 is a member of college in any capacity getting a (.) computer ID. (.) and what we’d like
57 (.) to see is that every individual user has their own ID: (.) because (.) what- worse
58 could happen (.) somebody might delete that Mail message (.) and I’m afraid this is
59 L [Yeah
60 E going to be one of those things if you have a shared- a sha:red (.) shared system you
61 know shared shared user number (.) that this sort of thing can’t can’t really
62 L [yeah
63 E be (prevented ) because (.) anybody going around with that number has got full
64 privileges to delete the Mail system delete even the Mail, do anything they want (.) and
65 there’s no way we can protect against that
66 L Ye:ah (.) oka:y well that’s one way of getting ’round it
67 E I mean I-what we’d suggest is that other people using that ID re-register on on
68 different ID:s and have their own Mail boxes * It’s certainly no problem (with us)
69 doing that
70 L Right * The other thing is uhuhm (.) waiting for the connection sometimes to
71 EUCLID. * It it t-it can take y’know ages and ages
72 E This is particularly in the afternoon.
73 L Well I’ve just tried to get in now: .hh and uh (.) is there any way * I can hurry it
74 up? (.) I mean I keep pressing the return,
75 E No I’m afraid not that that’s the state of our technology I’m afraid, uh until we get
76 the new equipment uhuhm these sort of delays are gonna hap- are gonna happen till we
77 get the new system (.) later on this year:, * that’s why it’s all being replaced because
78 the problem with EUCLID is that it’s (basically too old) now * it’s
79 L [yeah
80 E it’s reached the end of its life * and um (.) when we replace it you’ll get much
81 L [right yeah
82 E better response and everything will be a lot better then (.) we hope ? I’m sure it will
83 in fact. (.) but up till then I’m afraid (.) no * there really isn’t anything we can do: I
84 suppose we we y’know we have-need to replace our equipment we’re gonna get the
85 money for that equipment but we’re not gonna get it new (.) we gonna get it * over
86 the summer and and uh (.) that’s the way the funding works these days,
87 L When do you think the new * uhh mainframe will (. ) be- * take effect
88 E Oh that-
89 L (put into existence)
90 E It’ll be- arrive here in October It’ll probably be used in service before Christmas (.)
91 if not shortly afterwards (. ) but EUCLID will go before then * there will probably be
92 L [yeah
93 E an interimsreplacement machine in in before that time. * We ho:pe * that that
94 L [umm [umm
95 E will that will uh (improve things starting straight off) that will be end of June or
96 something like that (.) uhh we hope that will start improving things * and then
97 everything will depend (. ) or we’re gonna find out anyway (problems over the summer)
98 but then when the system comes on later on then things will get a lot better * but
99 hopefully you’ll see some improvement in Ju:ne (.) and you’ll see the rest of the
100 improvement at the end of the yea:ar
101 L Is there any possibility of this problem I just discussed with you being rectified so
that when you look at the file of messages .hhh list of messages (.) that you know there
is some kind of indication that it’s been printed. (.) (has taken place) No
E No we we it doesn’t our mainframe doesn’t contain that kind of information It knows
that it’s been read but it- (.) it doesn’t know that it’s actually been outputted ( ) as far
as that goes you know
L [But how does it show that it’s been read]
E Well if it’s not been read it will have a U in front of it.
L Ah (.)._ I didn’t know that. a U in front of what
E ((When you do SCANALL))
E When you do SCANALL: the first column if it’s never
L [yeah]
E been read by anybody (.) it will have a U in it. * that’ll that will have a U if it’s not
been read (.) uhh right to to the end (.) if you start to read it and then quit out of it
it will still have a U next to it * the U will disappear once the letter has been read
right to the end.
L Where does the U appear * on the,
E the first column of SCANALL (.) listing
L @yeah first column
E Yeah * well uh if it- if you delete the message, you get an X in that column (.) to
say that it’s been discarded. (.) Now that hasn’t been lost in the system until you
(count) Friday * when you (count) Friday that’ll go but uh at at * that
L [umm]
E uhh at uhm (.) yeah well it has been marked for deletion I think (that’s actually
what X means in that column) * you can see if nobody looks at the message altogether
cause you know if it’s unseen: (.) then it can’t have been printed.
L Yeah
E Umm no that’s not true no you can print an unseen message actually, * so that won’t
(.) even tell you (.) You’ll have to look at it because you can just go in, accept it (.)
and then just uhm escape out without even reading it that’s possible
L [but
E But for it to have been unseen that means that it’s been ah ah ah (.) on the machine
for a long period of time (.) doesn’t it,
E No no you can- if you’re in Mail and you get the incoming mail you get a message
saying you have new mail: (.) if you type A or Accept at that point (.) the
L [yeah]
E message will become unseen * you won’t ever it won’t be listed out by default then.
(.) it will just be an unseen message you have to actually uhh (list) it (.) to
L [yeah]
E actually get the unseen (.) ( list) right to the end.
L Right (.) Okay thanks very much
E What’s- can I have your name
L It’s M~ G~
E Oh hi: yes I remember you
E Oh hello yes hh. uh as you know I did go along to your * EUCLID course
E That’s right yeah
L But it’s just Mail problems and it really is giving me a (.) terrific headache
E You’re in English aren’t you
L Yeah
E Yeah that’s right * Yeah uhh,
L I mean y’know this this past mistake was really serious uh because G- has been on
the phone y’know to Canada saying well we’ve never received the message and I’m
waiting for it * and all the time of course it’s been here (.) I’ve got my suspicions who
might have just gone into the machine and gone on with their own business and
relegated it to the listing file (.) y’know but I can’t accuse anyone
E [yeah
E Well the thing is once you’ve go into the Mail probably they’ll all collect their mail
they’ll automatically accept their message and (they just assume and get out) without
reading it and it’ll become an unseen message in the listing
L Yeah okay (.) thanks for your help anyway
E Okay
L Yeah
E Goodbye
L Goodbye
Hello: Advisory.
Um it's a rather embarrassing problem I've got here (.) I've got a PC and I'm trying to get Minitab. * and it says command term and I keep putting in Minitab and it just keeps saying it's a bad command or filename
Hang on a minute whereabout- who are you and where are you from.
I'm um * a student and I'm in the Genetics building um so it's the PC on the third floor of the Genetics ( ) department
(can I have your name)
L- Z- * the PC that's in the Genetics department. I mean are- are you sure it's supposed to run Minitab because it's not all PCs have * that kind of software up
No actually I was told that this this um particular PC has the facilities for Minitab
Ah uh do you know whether that means maybe it could have Minitab on it I mean did somebody actually say that it has Minitab on it
(yes) yes someone did say that
And what happens when you type * (Minitab what do you get)
Well [Well]

mean it's often quite a local thing * ((cough)) that they've chosen to put it up under a particular name (on)
Oh right (and)
I'm I'm really under a fix to advise you because uh I don't actually know how the machine in Genetics is configured Do you know * who's responsible for it (.) I mean it's it's not one of our service machines (and so it) doesn't have to be configured in any set way you see (.) so it's really the best person to ask is either somebody who regularly uses it or even you know * umm or somebody whose job it is to sort it out:
Oh * oh right I see c-

Frankly I'd help it's just (.) I mean one day we'll have machines that are under the (aegis) of the Centre or the college and then I'd know what I'm talking about but when it- department machines they could have (set it up in) one of-a huge number of different ways
Oh right
And I really (.) I mean I might be able to try and pull something up if I was actually sitting in front of it. * because you can list the directories and see if there's anything that looks like Minitab
okay yeah
((cough)) I mean you could try doing that. basically you're looking for um probably dat files one that has the filename followed by dot dat and when you do a directory on a on a bit like the (harddisk) you can see the um what sort of filing extension you see it slightly depends on what it might do * and dat files are the ones that (actually) in separate commands. the Minitab might be there

But that is if there is really definitely you know that nobody's been messing around
with taking it off or anything like that. or that it's not used from a floppy maybe. 

Oh right well never mind well thank you for your help anyway

If you can't find I mean um anyway you might find that someone like um the 
departmental secretary you know would at least know someone who would be able to 
advise you. on that particular machine 

Okay then * fine I shall try it out

E [if you just-

I tell you what if you just hang on I'll just check and find from anyone around here 
if there's anyone who actually knows * umm how they- whether there's a different 

Okay then * hang on a minute 

[wh-

way of sorting it out. 

Right okay then I'll hang on a minute

okay thanks

((off phone))

Hello?

Hello?

No I'm afraid this its- I mean when we give it out it should be called up by the 
name Minitab

Yes

so it can't be (the demonstrator) that someone's been messing about (with it)

okay then * well never mind thank you so much for your bother Byeh.h.

[(

bye hh.

bye
1 E Advisory
2 L Hello Advisory?
3 E Hello?
4 L Hello yeah I have a question. Can I? (pause)
5 E Yes
6 L (Do you know) there is a *
7 E Sorry who are you
8 L I'm M-
9 E Can you spell-
10 L [mm
11 E Can you spell your name
12 L ((spells))
13 E what department
14 L Geology
15 E ( )
16 L Yeah. I want to print some of the files of ( ) it is a department file ( ) okay?
17 E You want to print the file
18 L Yeah v-
19 E What package are you using,
20 L uh eh EUCLID.
21 E Yeah, * and and are they just straight EUCLID files
22 L Yeah this is the file in the department files and I think this is a directory. there is a lot of files in this directory.
23 E Right yes
24 L So. I want to print most of them. How can I- What is the command for printing ( ) most of them I have to * uh print all the all the files separately? or I can say only print directory.
25 E No you can use umm ((cough)) * @excuse me I'm not actually on Um there is some particular ( ) facility which you can u:se ( ) um * which you can do something like this with you hang on and I'll try and find out
26 L Okay
27 ((off phone; break in tape))
28 E Hello?
29 L Hello?
30 E Yeah you want to use a command called trace T R A C E
31 L [um
33 E And um you give it a catalogue name ( ) by which you
34 L [yeah
35 E can trace files and um you have various options (which you can do) what you can say ( ) um you can say trace
36 L [yeah (pause)
37 E And if you want to print them all um ( ) you can say
38 L [yeah,
39 E trace followed by the um directory name followed by (the filename that contains all)
40 L [yeah
41 E the other files and then you can say (. ) Befo:re and you can restrict what you want it to do first so you say before:re space print it would stick um print before- what it does is it looks through it looks through that directory and picks up all the filenames.
42 L umm
43 E so if you say trace followed by the directory name followed by before and uh * print.
L umm? yeah trace directory name and print
E  

((background talking))
L Wait what I have to do< I don’t understand it should be trace file umm
E followed by the filename,
L filename or d-directory
E Well directory name um followed by um * before B E F O R E
L B E-<B E-
E F
L F
E O R E
L O R E equals? space
E space
L print
E print now hang on a minute (just ask somebody hold on ) * It then puts um a
macro which is a list of commands in the current file which is percent B
L What what is it
E Well what it does is it it sets up a file for you which you can then run to actually
do the printing
L Yeahhh. * but now it is trace space then it is unhh directory name space before
E Yeah now what that does does is that doesn’t actually do what you want it to do it
sets up a set of commands to do it.
L yeah,
E so what you then have to do is run, and run the commands and actually make it do
it so you then have to: when you’ve looked- done that you can look at the file percent
B so you can say type percent B and check that the commands are
L [yeah
E what you want like then you can edit it if you wanted to take some out or whatever
you want and then you can say and then if you type in percent B you know the little
percent sign B it will then obey it * and it will do all the print
L [yeah ummm
E [yeah
L okay thank you very much
E umm if you get stuck you can actually say help space trace and
it will tell you all about this on- on the screen.
L Help (.) space trace yeah?
E [yeah
L okay thanks
E Okay
L Okay thank you * bye
E [bye
CC5

E (Advisory)
1 L ( ) speaking from the department of genetics I got-
2 E Sorry sorry who are you (pause)
3 L I am a user of EUCLID (I've got a) problem I got a piece of disk from the BBC
4 E right
5 L Can I just transfer it to EUCLID
6 E You've got a disk that works on a BBC
7 L Yes
8 E file
9 L yes a file (pause)
10 E Oh right Hang on a minute, I'll find out I'm afraid I don't know that straight off *
11 @I would have thought you could
12 L umm
13 E I'll ring- Can I ring you back
14 L Sorry
15 E Can I Can I telephone you back
16 L okay
17 E and what's your name
18 L My name is Z-
19 ((spells))
20 E Sorry
21 L ((spells))
22 E right okay * and what's your extension number
23 L 0000
24 E 0000
25 L yes
26 E okay I'll get back to you
27 L okay thank you
28 E bye
29 ((break))
30 L Hello this is Z- speaking
31 E Oh hello um this is computer centre advisory
32 L yes
33 E um yes you can do it by bringing your disk here because
34 L yes,
35 E we've got a BBC that's linked to um DCX you might be able to do it on your own
36 BBC if you're linked to DCX port a version of Kermit
37 L I could yes aahah
38 E you can? (pause)
39 L No probably I think that the best way is to bring my my disk to to the computer
40 centre and uh and go from there
41 E right okay
42 L okay,
43 E so you can do that during any of our opening hours
44 L okay thank you very much
45 E okay
46 L okay bye
47 E [bye
Hello Advisory. Can I k-question please

Yeah sure

When we have on BBC when uh- using it from uh EUCLID we have uh we have escape (joint) Escape G and Escape B Escape break break the line but when I'm using from the um Kermit in the PC computer. Wh how we can do this then

What do you you're trying to uh

uhuh one

trying to get on to EUCLID

No no eh I get on to y-EUCLID but em no * when we are using from BBC connected connected with EUCLID

Yes but is it an editor you're using

Yes in (Eddy condition) when we are saying wh-when we want to join the line or when we (.) want to break the line we are saying escape break- uh B for breaking the line or escape J for jointing the line but in the uh PC linked with EUCLID eh with Kermit can you tell me how we can do

[yes okay it's Eddy you're using]

Yeah I'm using EDDY

I'll have to look it up for you Can I ring you back.

E Eh * what time

Well it'll only be about ten minutes because I've got somebody else here

But ee- you know I am in the * geological terminal room

Geology

Geology yes (geological science) terminal room

Yes and what's your name

M-

And how do you spell that please

(spells name))

And is there a phone there or do you want to call me back in ten minutes

Okay okay

Okay?

Okay bye

[bye]

((break))

Advisory

Hello? M- is calling again

Ah (you're having problems)

((Yeah I tried)

Yeah no I tried for joint joint but it doesn't break

With joint it doesn't break

Yeah

Have you just been pressing escape b

Yeah escape b yeah * but for jointing I pressed escape J it it joins

Right but it's not really escape I I've really no idea okay come to um * have you got your file on EUCLID so I could just have a look at it maybe

Y-no I am trying it yeah I got file

Well if you tell me what your file is

My catalogue file is uh

What's your id first

((gives id))

((repeats))
348

((repeat together))

E (account name)

L ((gives whole number))

56 E right okay and your filename

L My filename is catalogue file 000

58 E ((repeats))

59 L 000000

60 E ((repeats all))

61 L ((echoes last part))

62 E Right okay=

63 L =well this is the file that I am trying now * so

64 E [right

65 L [but uh-

66 E And whereabouts are you trying to join the line.<I mean I could have a look and see

67 if I can-

68 L [y'know I I typed the whole uh thing in * again you know I was two or three lines

69 jointed but it is a problem all the time for me you know

70 E You can't join any of the lines

71 L No I I I I y'know I finished it actually (pause)

72 E Oh I see so () you just want to know how to do it in future

73 L Yes but because I I had a mistake with it so I tried it but I couldn't fix so I typed

74 it again

75 E So it's okay now you need to know how () you need to do this in future.

76 L [mmmm

77 L Yeah yeah

78 E Umm I think you'll have to leave it with me and I'll have to look at it I'll certainly

79 look at the file and see if there are any problems on the file because I can't understand

80 why

81 L No there is nothing in the file you know I I ( ) the number I am typing now ()

82 I tried also two three days ago on this problem on this machine and I couldn't get it

83 maybe I try in the other (machine) room may be there's something wrong with this

84 machine

85 E Well that's what I wonder whether there's maybe a fault in the machine or that

86 someone's umh re-allocated some of the keys

87 L uhhuh

88 E I mean I can't see by the sound of it I can't see it's a problem with the- Eddy

89 programme because obviously it's doing everything else that it should do and although

90 L [yeah

91 E there are some changes that EDDY knows about depending on what machine you're

92 on this isn't one of them and the one particular combination that doesn't work it

93 obviously does work you know on other things What I can do is just look if if there's

94 any () uhh peculiarity or something that is causing everything * to mess itself up then

95 I can certainly look at that but otherwise I think that um * is there anyway I can get

96 back to you you know later on in the day um (do you have an extension number)

97 L My telephone number

98 E yeah

99 L ((gives number))

100 E ((repeats)) Well if I find any problems in your file I'll get back to you otherwise I

101 think we have to assume there's something funny about your particular machine and

102 probably the best thing to do, is ask someone in the department to uhm someone

103 responsible for looking after them or you know who regularly uses them and see if they

104 can find out

105 L Yeah yeah maybe I've a (change machine because there is a lot of machines here and

106 see what happens on the other machines )
E Yeah if you could do that and I'll certainly have a look at the file. If I can find any problems there, I'll let you know.
L okay okay
E okay?
Hello Advisory?
Hello Advisory. I'm not eating into your lunchtime am I? (pause)
Sorry?
I'm not eating into your lunchtime,
No we're open during-
What are your hours:
Our opening hours are during term time nine thirty
[yes]
until five (.) Monday to Friday
Umm * I got I've got some files on uhm (.) a five and a quarter inch floppy disk (.)
that I want to transfer into EUCLID files. They're ASCI files. and I I wondered if there's
a Kermit procedure (.) uh for transferring them from (.) uh an IBM machine * to *
EUCLID
There is:
I mean it's fairly straightforward if they're ASCI files
we've actually got a * PC intersect Yes that's (in handout) * using Kermit and it
does provide examples for actually transferring filesystem to and from EUCLID
Okay, excellent (.) uh when can I get that uh (pamphlet).
Well we can we could (.) send you one in internal mail,
I'd like to come round and pick it up. (I'll level with you (.) I want to do it) right now:
(right)
Right we should have doc- hold on a moment, let me just check to see if we have that
document in (pause)
Yeah we've got some in Advisory so you can (.) come here
Right okay I'll come over now (and pick one up)
Do you think I could have your name and department
Yes my name's H- ((spells)) and I'm in the Economics department of SOAS
in SOAS right thank you
Okay fine. Uhh, Advisory is up on the:
It's in the- on the first floor of the Kathleen Lonsdale building do you know where that
is
Yes I ( do)
Yeah the first floor uh when you get to the top of the main stairs turn left a:nd (.) you'll
see: * a hand hanging from the ceiling pointing to the door
Right: okay
Okay?
okay thanks very much
Bye
[(bye]
okay thank you very much
okay bye bye
bye
Hello: Advisory, can I help you,
Yes please uh actually I'm working on Lotus and I'd like the printers to uh print sideways and I know there is sort of a command * to uh I've done it on printgraph actually, () for rotation
Ah Sorry what package were you using, () you're using Lotus. Sorry we don't support Lotus,
Ahh It doesn't sound like there's anybody here who would be able to help you
L Ahhah. Is there: anybody do you know of anybody outside the UCL, ah who does support Lotus?
Ahh (pause) @trying to () think () I think () it's possible that Kings might do:
King's College, you can try them
The number is 0000000?
Could be I think you know that better than I do I'll I can just look it up
L That's okay I think I have got By the way what's C- 's number?
Sorry
L C- (pause)
Uhh sorry I missed that () could you spell that?
L [C- C- () C- The chap at the uhh at the Computer Centre
I don't know he sits next to H- S- and he was teaching uh SPSS
Ah is it- S- () Sorry I didn't hear you
L [Yeah [No it's no problem
His extension number is 0000
L 0000 O::kay! Thank you so much.
L Just a moment, Can I have your name and department
L [okay [That's okay I'll call him Thank you so much
Sorry ah it's * just that we're actually keeping a log of calls to Advisory at the moment, I wondered if I could have your name
[okay * S- Economics,
In Economics
L Umhm
Can you spell your name please
L S as in sugar X X X X
E S?
L X X X X
((repeats)) Right from Economics
L Umhm
Okay
Thank you: @cheers
[Bye:
Bye
E Advisory hello
L Hello?
E Hello Advisory here
L Oh Computer Services, Advisory, I'm X X Bristol Polytechnic
E Oh right yeah
L I've been using your uh let me get what's the program's called guest FTP account
E Oh yes yes right guest you log in using Guest ID
L Yeah and I'm trying to sort out about thirty or forty files from an American system
E uh yes
L And then the database
E Sorry why are you using our guest rather than becoming authorized public because we
don't give much (. ) in the way of facilities to the guest
L I'm using your guest as the only way I can get through to the United States of America
E Right so you yeah but we've sort of limited what people can do with guest there aren't
as much facilities there are there,
L No
E hh. Right
L Well cause I've got all these files to you that didn't take too long because I just used
E [Right
L FTP
E Oh right yes
L Now to get them from you to me
E [yeah
L and while using your guest FTP that's going to take me a week I reckon because there's
a whole menu to go through to push each file (. ) down to me. now can I get FTP access
um to that sort of directory where I move files
E [ly-
L You you want to get to the level above so you can copy the whole lot don't you
L That would be nice
E Ummm Right ummm @what's the best way of doing this * wha- what you're using the
transfer command are you
L Well at the moment I'm using well this this sort of sort of menu set up in the FTP
account which (will do the job but) it will take a long time for me to (. ) push
E [right
L the file. one at a time I just wondered if there was some way I
E [Oh right that's
L could just use a straight FTP type of connection and (. ) pull the files down
E Yeah. you do you should be able to sort of drag them down from your host file
L [yeah
L and so (. ) individual file and send the whole lot
E That's right can I get FTP access to your (. ) account
L We might have to * uhm authorise the use of an ID or we actually should have given
you (. ) your own user account We can allocate them to external people and then you just
have you own user id on EU:CLID and then it's just like a normal account. Ummm I think
L [yeah
E I think if you speak to one of the network lads see and then see how see what they they
L [Yeah
E can advise they may not it they can- (. ) pass you on to somebody else
Would J- S- I * don’t suppose he’s around
Never heard of him where is he
Well he’s the bloke who set this thing up I think
(Sorry what are you saying somebody else
So what’s happening is that the the guest ID is being used by ( ) people who are unofficial mail servers undergrads and things
No I’m not using it for that you see the only way I can
get through to the United States file transfer is to use umm the relay the MSS net relay which umm as far as I know can use use you (.) you control that
(pause)
Uhh (. ) yeah hang on I’ll try to speak to one of the other (. ) lads and I’ll get back to you (pause)
Hello?
Hello
we’re not too sure that sort of having access to the uh top level is gonna be any any any use. but there are ways of constructing a macro that does the job for you. When you page there’s a thing- when
you do transfer ( . ) there’s actually a command being executed is system transfer if you page that ( . ) there is page and then a little bit lower down there’s
the usual bits of page okay? and basically what you do is construct a macro ( . ) which has on each line a a separate transfer for each file: Now it’s quite straightforward to get a list of all your files because there’s a command called trace
Oh yeah
If you trace ( . ) it will give you- in your percent C are are familiar with EUCLID,
No
It traces temporary file which has a list of all your filenames You then use an editor to construct ( . ) a file, ( . ) which has all the things in it
Right
And then then it’s difficult here because you got to give the uh the uhmm uhmm the uhmm new names for the file * okay? Uh if you hang on I’ll try to spend sort of five minutes constructing most of it and then you gotta go through:- What’s your user ID
XXX
XXX
XXX and
Bris Poly
B R I
((spells))
XXXXXXX
XX
Wait umm what’s the actual site name on that account habe you tried any of these files
Uhm have you transferred a single file yet
I have transferred a a few single files and they’re okay they’re in the right format and all that
E Yeah so wh-what have you used for the site name
L For my site name
E Yeah
L Yeah uh Brispoly B2
E Yeah that that was the site uh uh uh wh- site local file local device
L You might need my uhm
E Password
L Yeah (.) that’s uh XXXXXX
E No: spaces
L @no spaces
E Right oh okay I'll try to construct a file oh well I'll try to send them
L [Do you know where they are
E If they're they're in guest I can find them
L Yeah they're under something called XXXX
E You've got you've got a hangon there
L Yeah
E @ XXXX yeah
L [It asks you to open a- you know initial session asks you to open up a ( )
E [Oh right well I'll try and uh send them to XXXX
L [XX
E Sorry?
L XXX
E Yeah X
L XXX beg your pardon
E Yeah well I'll
L [XXXX
E [Right
E Okay I'll I'll have a go and we'll see wh- what what comes up
L All right thanks very much
E Okay right
L Bye bye
E Bye
Hello Advisory

Hello I have a question about E-mail

Yes certainly

When composing you know a message to send off too long sometimes when you're typing a message 'too long' comes up. It seems impossible to get rid of it.

What's happening is you're not pressing return at the end of the line when you get- in your typing when you get to the edge of the screen press return.

Well I have been doing that (but obviously just) once or twice

No you've got to do it at the end of every line:

Right

Uhh you can actually ( set) mail to re- justify uh your files actually in your profile so you can re-justify it in any way: you can press return anywhere but you just can't fill the line up any line ( any space possible so it doesn't matter where you press return )

Yeah

but normally when you get it towards the end of the line you know when you get towards the end of the screen press return on every line

Right umm right go right to the end of the screen can I

Yep right uh ( straight down to the bottom ) you might actually go a bit more but beyond that when you get a message saying it's too long

But when you get this message do you actually have to re-type the whole thing again?

how do you get rid of it

Uhh press return: * you won't you won't lose the whole line you'll only lose the last part of the uh

Well I have tried to do that but it keeps coming up again

Well keep pressing return @you'll get back to ( )

When you type is there any way of editing

Yes there is:

Well How do you do that

Well you know when you finish your letter you do a colon at the end at the end of the message umm then you say send mail (. ) put No rather than yes (. ) then you can type edit and then - which editor are you ( most) used to using

I see

Not really using an editor (I'm just using- )

You’ve not used an editor at all on EUCLID

No

Okay well I think what you need to do is is you need to come to the library at the Computer Centre and get some documentation on E-mail and also on the editors (available) we have several editors available and you can use uh any of those

from mail for your editor Probably the most useful is the screen editor Eddy but it depends on what kind of terminal you've got What computer are you using,

Uhh it's an IBM

okay (. ) it's a Kermit,
okay then you'll probably want to use Eddy because that's quite nice it works quite well on the IBM

um do you- do you just type Eddy from uh ready (.) @at some point or what

You can type Eddy from ready yes ((laughter)) (that's funny yes) you can actually do that yes uhh that's that's one way of calling Eddy but within Mail: (.) you just type Edit and you can set Mail up to call Eddy by using the profile

command uh which is within Mail

right

Umm it's a bit difficult to explain all this over over the phone (.) do you think you could call into Advisory

Yes I could yes

Umm it's a bit difficult to explain all this over over the phone (.) do you think you could call into Advisory

Yes I could yes

to explain that I'm on till eleven o'clock but one of my colleagues there will be on until to five o'clock today

okay

um it's one of those things about you know a bit difficult to explain over the phone

okay well thanks very much indeed

Can I have your name

My name is A-- Survey of English Usage

@Survey of English Usage

[I don't actually know if I can manage it today but I'll certainly come in at some point

okay

I'll try * thank you very much indeed

okay bye bye

bye
Hello Computer Centre Advisory

O:h hello (.) umm do you know anything about problems uhh with FTP between ULCC (and UCL)

Umm

Has anybody rung about it to you

[We have some problems what- with our end

Well I don’t know if it’s your end or ULCC’s end

We have had problems (with with our end as such

Have you,

Yeah

(pause)

Ahh (.) well you’re still having problems I have FOUR FILES nothing particularly massive

[uh- Who are you

I’m S-M- from Physics and Astronomy

Oh right @S-M-

Ummm I have FOUR FILES that I initiated into FTP from ULCC dot CMF (.) yesterday probably between two and three in the afternoon and

[yeah

they still haven’t come across I wonder if you knew anything about them

Haha

Well if I am ( ) these are not (huge) files

regular U files

No I said not huge

Oh not huge sorry ummm * @let me check (pause)

y’know I mean they’re four thousand records which I don’t consider to be huge it normally transfers * with not much problem

[No that’s nothing nothing at all

Yep let’s have a look at the whole You haven’t phoned Computer Advisory have you

Well no I’m trying to talk operators at ULCC and although they’re uh up and running and my messages are going across from my end I’m not getting any reply from them

Oh okay * you haven’t spoken to any operators here:

No=

=well I’ll check with them in a second

Ok thanks (pause)

Uhh * I know (there has been quite ah- * apart from the new system occasionally stuff gets generated from ULCC (.) ultimately by the CRAY which hangs the whole file (system on EUCLID) you see that that is the uh (map in the the possible acquisition of files system it handles all ( ) FTP mail and things

[right

(like that ) and uh I know it’s possible that it’s just not available really at ULCC it not our problem but (their) problem it’s just not available really (at ULCC) * never get on (the file system because you can’t get over to ULCC)

Oh I see

Right I’m there (pause)

now my box should be coming into xxxx * or xxx sorry

Yeah there’s mail there for you, (pause)

Mai:l

yeah @queue of outgoing mail

an outgoing mai:l queue

XXXXX serial number xxxx has got mail * (I) don’t see anything there at all
but nothing with X or anything with X
E uhh (pause)
E ( ) hold on I'll try and call the operators and see what eh the situation is
L okay
((break))
((background noise))
L You're saying the message has passed through uh to UC to-
E yes yes I can't get anything
L I mean it took four hours to transfer something from ULCC dot CMF to ULCC dot
MDF
E (particularly with the files)
L oh Yeah uh I've just been unable to get anything I'll just check to see what I've got-
E I can send the file to another site * and then see what happens there
L [yeah
L Try sending one to Rutherford
E Uh no I haven't got (an account at Rutherford)
L Well send it-
E I'll send it to XXX
L all right fair enough (.) same difference
E @(once you get in it just keeps going and going) * ummm I can't explain it very
L [yes:
E well
((pause; sound of keystrokes))
E ahh umm no (well it's) interesting we'll have to go go through (ULCC)
L @okay right right okay
E yeah it's looking like ULCC it's their end
L okay well I've sent them a load of messages but um
E Have you tried phoning them up
L Have I tried what
E Phoning them up
L Ahh I will I will phone them up
E will you because they do have an extension) dedicated to network problems
L That's right yes I do phone them from time to time and if I can't get- it's just that
when I logged on this morning there was a news item from the operator saying that this
E [yes
L it
E Well yeah okay yeah Bad network I think or something like machine breakdown
L yeah yeah yeah
E Well I'm sorry I wouldn't completely rule it out but that that file went straight away
L [looks like ULCC end
E okay
L looks like ULCC end Right I'll chase them
L okay
E Many thanks for digging around
L okay no problem bye
L [bye
1 E (Advisory)  
2 L (Do you support) Word Perfect five  
3 E we do yeah,  
4 L yeah I have a query Now um when I am using uh wordperfect umm on an existing  
5 file actually after a few minutes a message comes up saying all back files uhh sorry all  
6 backup files and then one re-name two delete and the machine does not respond to  
7 either commands. (.) Now I’m getting this message every about two minutes  
8 E the reason for that is: that * at some point when you terminated wordperfect * as  
9 normally and it’s not deleted its backup files it takes its backup files backup file every  
10 x minutes where x is changes that number so when it changes the backup  
11 L (but the- )  
12 E and if for some reason something goes wrong it uh it (.) doesn’t delete the backup  
13 file so you actually can recover If you just wanted to carry on again all you need to do  
14 is press the number for overwriting it  
15 L Well actually I responded to it but the machine I mean the software would not accept  
16 the- you know either renaming or deleting it so what I do-  
17 E You gave it uh one or two  
18 L (yeah)  
19 E and it doesn’t work  
20 L No it doesn’t work so what I had to do is F-one and then the message goes off the  
21 screen and then I exit and then I actually delete the whole back up  
22 E Are you working on one of our machines or is it departmental machine  
23 L    [Uhhhhh  
24 E Departmental machine actually * but I don’t think it is anything with the machine I  
25 mean it w- it has to be with the setup of Wordperfect umm you know with the software  
26 itself you think- I don’t think it’s to do with the con- configuration uh thing on the  
27 machine is it?  
28 E Well we wouldn’t know it without actually looking at the machine now (.) I’m going  
29 to pass you over to wordprocessing ( )  
30 L Okay  
31 E okay?  
32 L thank you thank you  
33 E  [you just hold on there  
34 ((pause and dialling))  
35 C Good afternoon word processing  
36 E Hello is there anybody there who could help with uh backups uh somebody is getting  
37 into a mess over it  
38 C backups  
39 E They must have done something
E: Advisory
L: (I'm ringing from the Alumnus Office) looking at a copy of the UCL Computer Centre course umm .hh in the newsletter of (. ) December,
E: yeah
L: and it says at the bottom of this list if I want a leaflet describing the courses I should ring up advisory.
E: Oh right
L: so
E: which courses are you interested in
L: um there's one on MSDOS, () and there's one that's been advertised on WordPerfect as well
E: Oh right well WordPerfect one is (later on in the the coming month)
L: what in February
E: Yeah
L: [yeah
E: Yeah
L: Yeah this month
E: Sorry * that's true.
L: [(laughter)]
E: Yeah Umm do you want me do you do you want us us to send you the information
L: Yes if you would
E: Okay () what would be your name again please
L: My name is A- B- ((spells))
E: ((spells)) in the-
L: Alumnus office
E: Sorry?
L: Alumnus A L U M
E: A L U M
L: N- N U S
E: N U S Right () okay I'll send something in the internal post then
L: Right that's MSDOS and um Word Perfect
E: Yeah yeah I think at the moment they do the MSDOS one sort of it happens irregularly, there may be one () if there is one booked it might @I haven't noticed it (but uh I'll have a look)
L: And it's just (delivered) in four hour stint-
E: Yeah I think (do) they're most sort of all day jobs it depends on () um how- how they're being organized ()
L: And do you do you a list of the sort of the other courses that are available
E: Uh yeah I'll I'll put all that stuff in
L: Oh lovely yes thanks very much
E: Okay?
L: yes thanks bye bye
E: bye
Hey Advisory,

Oh hello I wonder if you could help me um I rang up to find out about Oracle

Yeah the (system)

That's right yeah

And um I've got some information I need to get in touch with Oracle direct (.) and I can't find any address for them

Oh okay uhhh we will put you on to our Oracle man so so

What's your name

My name's J— E— in Phonetics (pause)

Right

You're not going to call me back are you

We do indeed well we sort of roundabout like His name is A--- D--- um I'll give you * an extension just in case it doesn't go through umm if I can find it on the list,

0000 extension I'll try transferring you hold on

[(sound of phone dialling)]

Hello B--- is A--- around

He's not in the office hold on a minute * and they don't know where's he's gone I'm afraid,

okay just an enquiry about Oracle which (.) he'll have to deal with I'll I'll tell them to phone him back

Hello?

(yes)

Sorry he doesn't appear to be in the office (.) at this actual moment though he is in today (.) would you like to phone him back

[I'll try and ( )]

Yeah (.) A-- D-- anyway

[thanks very much]

Thanks a lot (bye)

[bye]
Hello Advisory?

Hello um I have a question regarding Foucalt (pause)

What yeah okay well what- (.) sort of * question

Ahh the question is that um if I want uh well I am running a program with (. ) data and each stage of the program as it goes through uh one certain uh calculation and output certain uh variables and arrays. (. )

Now at the end of the run I will do a test on certain (. ) eh averages. (. ) Now I want to go t- to that test but I don’t want all these outputs to come on the screen. uh What do I do to dump them to an output stream or somewhere (pause)

E Ehh what * where are you writing them to

L Well I’m I’m using stream six to write

E No well if you dump them you’ll dump everything that comes to stream six

L oh so I wouldn’t be able to get anything on the screen afterwards

E No you’d lose you lose everything that you’ve written to screen six not just * (data) let’s say but if ( you putting any fonts) to stream six you’ll lose those as well

Rght well is the value of the variable you’re interested in coming-

[but

E being written out by the program or are you examining it using photo

L [no no it’s not

E I’m examining it using photo.

L right so you can actually just dump stream six probably,

L yep (pause)

E cause you obviously

L And if I do dump stream six (. ) since this one is not written in (. ) the codes I wouldn’t lose it anyway because uh

L [no you wouldn’t

E No so you would be able to actually do that (. ) I mean all you need (. ) to

L [right

E do is when you actually * (ru:n the program you just direct the output * from stream six which is (. ) unit six you have to type unit six (. ) and direct it (. ) to uh you want to get rid of it so you can direct to screen and that will just direct it there

L [right

Yeah yeah I just realised that that is ( the type thing ) I just didn’t think of that because eh every time I uh do that I just don’t give it a stream so it will automatically come on the screen just

E yeah it defaults to the screen

L [if if [so I a

L if I give it a file then uh then that will solve the problem

E Yes it would

E okay thanks

E right could I have your (. ) name and department we’re actually carrying out a survey at the moment

L [right

L right okay name is A-- ((spells))

E ((repeats))

L ((spells))

E ((repeats))
53 L and I'm from Transport studies group
54 E Transport Studies right okay?
55 L thank you
56 E right bye
57 L bye
E Hello
L Hello
E Yeah sorry how can I help you
L I have got a question about (line) software Who would I speak to
E Umm well it depends what you want to know I mean are you actually wanting to order it
L Well we want to know if it exists for an Apple Macintosh and we want to know if it planned for SPSS that sort of ()
E Right yes it probably is umm (R—) is who you want to uh talk to Can you give me your name
L Yes D— H—
E I can try putting you through now or if he’s not there I can leave you a message I can leave him a message Would you are you you’re internal are you
L Yeah
E Yeah well I can still try putting you through because he has an answerphone on his or I can easily take a message if that unless you want to speak on an answerphone (.) some people don’t hhh.
L No I don’t mind
E Oh well do you want to ring you can ring him direct if you want to hold on 0000
L Okay bye
E bye
APPENDIX 9. List of Turn-type Classifications for CC Sample.

Code:
LS= Layman’s Short utterance
LM= Layman’s Multi-utterance
ES= Expert’s Short utterance
EM= Expert’s Multi-utterance
Bold signifies model stage identifiers

<table>
<thead>
<tr>
<th>Interactions</th>
<th>CC1</th>
<th>CC2</th>
<th>CC3</th>
<th>CC5</th>
<th>CC7</th>
<th>CC9</th>
<th>CC10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>ES</td>
</tr>
<tr>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LM</td>
<td>LM</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
</tr>
<tr>
<td>ES</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>ES</td>
<td>EM</td>
</tr>
<tr>
<td>LM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
</tr>
<tr>
<td>ES</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>EM</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>LM</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>LS</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>LS</td>
<td>LM</td>
<td>EM</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>LS</td>
<td>ES</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>CC11</td>
<td>CC12</td>
<td>CC13</td>
<td>CC14</td>
<td>CC15</td>
<td>CC17</td>
<td>CC18</td>
<td>CC20</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LM</td>
<td>LM</td>
<td>LM</td>
<td>LS</td>
<td>LM</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>LS</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LM</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>LS</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
<td>EM</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>EM</td>
<td>ES</td>
<td>EM</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>LS</td>
<td>LS</td>
<td>LS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
</tbody>
</table>